

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Stephen G. Burns, Chairman
Kristine L. Svinicki
William C. Ostendorff
Jeff Baran

In the Matter of

STRATA ENERGY, INC.

(Ross *In Situ* Uranium Recovery Project)

Docket No. 40-9091

CLI-16-13

MEMORANDUM AND ORDER

This decision addresses a petition for review relating to a materials license application for an *in situ* uranium recovery facility in Crook County, Wyoming filed by Strata Energy, Inc.¹ Natural Resources Defense Council and Powder River Basin Resource Council (together, “Joint Intervenors”) have petitioned for review of the Atomic Safety and Licensing Board’s Initial

¹ *Natural Resources Defense Council’s & Powder River Basin Resource Council’s Petition for Review of Atomic Safety and Licensing Board’s January 23, 2015 Initial Decision Denying Environmental Contentions 1 Through 3, and Interlocutory Decisions Denying Environmental Contentions 4/5A and 6/7* (Feb. 17, 2015) (Petition); see also Exs. SEI014A to SEI014P, Ross ISR Project USNRC License Application, Crook County, Wyoming, Technical Report (Dec. 2010) (Technical Report); Exs. SEI016A to SEI016E, Ross ISR Project USNRC License Application, Crook County, Wyoming, Environmental Report (Dec. 2010) (Environmental Report).

Decision on their admitted contentions.² Joint Intervenors also challenge three earlier interlocutory Board decisions that found several contentions inadmissible.³ For the reasons stated below, we deny review.

I. BACKGROUND

Strata proposes to build and operate an *in situ* recovery and processing facility for uranium known as the Ross Project.⁴ As described in its application, the proposed operation will consist of two steps: recovering mineralized uranium from the ore body and processing the uranium-rich solution into yellowcake.⁵ Uranium recovery will be accomplished by injecting an oxidizing solution, or “lixiviant,” into the ore-bearing sandstone through a series of injection wells.⁶ The lixiviant oxidizes and mobilizes the uranium as it moves through the ore body, after which it is removed from the ore body by recovery wells.⁷ The “pregnant,” or mineral-rich,

² LBP-15-3, 81 NRC 65 (2015).

³ LBP-13-10, 78 NRC 117 (2013); Memorandum and Order (Denying Motion for Reconsideration of LBP-13-10 Ruling Regarding Environmental Contention 4/5A or, Alternatively, to Admit Amended Contention) (Aug. 27, 2013) (unpublished) (Reconsideration Order); Memorandum and Order (Ruling on Motion to Migrate/Amend Existing Contentions and Admit New Contentions Regarding Final Supplement to Generic Environmental Impact Statement) (May 23, 2014) (unpublished) (FSEIS Order).

⁴ Letter from Andrew Simpson, Strata Energy, Inc. to Keith McConnell, NRC (Jan. 4, 2011) (submitting application consisting of Environment Report (Exs. SEI016A to SEI016E) and Technical Report (Exs. SEI014A to SEI014P)) (ADAMS accession no. ML110120055); *see also* Strata Energy, Inc., Ross In Situ Recovery Uranium Project, Crook County, WY; Notice of Materials License Application, Opportunity to Request a Hearing and to Petition for Leave to Intervene, and Commission Order Imposing Procedures for Document Access to Sensitive Unclassified Non-Safeguards Information for Contention Preparation, 76 Fed. Reg. 41,308 (Jul. 13, 2011).

⁵ *See* Ex. SEI014A, Technical Report, § 1.7, at 1-6.

⁶ *Id.*

⁷ *Id.*

lixiviant is then transferred to a central processing plant to be processed into uranium yellowcake.⁸

The *in situ* uranium recovery process is used throughout Wyoming, South Dakota, Nebraska, and New Mexico. Recognizing the widespread use of this technology in this region of the country, the Staff prepared a generic environmental impact statement (GEIS) to address aspects of the environmental analysis for these facilities that are similar across sites.⁹

This licensing proceeding began in January 2011, when Strata filed an application for the Ross Project. As proposed by Strata, the Ross Project would occupy 1,721 acres (696 hectares) in the northern half of a larger area within the Nebraska–South Dakota–Wyoming Uranium Milling Region known as the Lance District.¹⁰ The project would consist of a central processing facility and 15–25 wellfield modules comprising a total of 1,400–2,200 recovery and injection wells.¹¹ Strata is also “actively exploring” the entire Lance District for potential satellite uranium recovery facilities, but had not yet submitted a license application for any of these facilities at the time of the Board’s decision.¹² A license application, whether for a separate license or for a license amendment to expand the Ross facility, is subject to a separate safety

⁸ *Id.* at 1-6 to 1-7.

⁹ See Exs. NRC007 to NRC008, “Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities, Final Report,” NUREG-1910, Vols. 1-2 (May 2009) (GEIS).

¹⁰ See Exs. SEI009A to SEI009B, “Environmental Impact Statement for the Ross ISR Project in Crook County, Wyoming, Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities Final Report,” NUREG-1910, Supp. 5 (Feb. 2014), § 2.1.1 at 2-3 (FSEIS). The FSEIS describes the Lance District as an area “90-km² [56 mi²]”—which is an incorrect conversion (90 square kilometers is 35 square miles). The exact size of the district is not relevant to this appeal.

¹¹ *Id.* at 2-9.

¹² *Id.* at 2-3 to 2-4.

and environmental review, and Joint Intervenors or other members of the public would have an opportunity to request a hearing with respect to any such application.¹³

At the outset of the proceeding Joint Intervenors sought and were granted a hearing on four contentions—all initially challenging Strata’s environmental report.¹⁴ The admitted contentions were:

Contention 1: The application fails to adequately characterize baseline groundwater quality.

Contention 2: The application fails to analyze the environmental impacts that will occur if Strata cannot restore groundwater to primary or secondary limits.

Contention 3: The application fails to include adequate hydrological information to demonstrate Strata’s ability to prevent mining fluids from migrating into adjacent groundwater.

Contention 4/5A: The application fails to adequately assess cumulative impacts of the proposed action and the planned Lance District expansion projects.¹⁵

¹³ In the time since the Board’s initial decision approving the license, Strata has requested a license amendment to expand into the Kendrick expansion area. See Strata Energy Inc., Kendrick Expansion Area Amendment to SUA-1601 (Mar. 20, 2015) (ML15096A141 (package)) (Kendrick Expansion Amendment). That license amendment request is under review, and a notice of opportunity to request a hearing was published in the *Federal Register*. See Strata Energy Inc., Ross *In Situ* Recovery Project; License amendment request and notice of opportunity to request a hearing, 81 Fed. Reg. 10,285 (Feb. 29, 2016) (Kendrick Hearing Notice). Joint Intervenors did not submit a petition to intervene in the Kendrick proceeding. Further, the Staff has started the environmental scoping process for the Kendrick request. See Strata Energy, Inc. Kendrick Expansion Area *In Situ* Uranium Recovery Project; Scoping notice, 81 Fed. Reg. 12,143 (Mar. 8, 2016) (Kendrick Scoping Notice). Joint Intervenors have submitted scoping comments on the environmental review for the Kendrick expansion area. See E-mail from Shannon Anderson, Powder River Basin Resource Council, to NRC (Apr. 22, 2016) (ML16117A369) (transmitting Letter from Howard Crystal, representing Natural Resources Defense Council, to Cindy Bladey, NRC (Apr. 22, 2016) (Kendrick Project Scoping Comments)).

¹⁴ LBP-12-3, 75 NRC 164, 210 (2012). On appeal we affirmed the Board’s standing determination and did not address contention admissibility. CLI-12-12, 75 NRC 603 (2012).

¹⁵ See LBP-12-3, 75 NRC at 212.

Following the issuance of the Staff's Draft Supplemental Environmental Impact Statement (DSEIS), Joint Intervenors filed a "motion to resubmit" their original contentions and to add a new contention (Contention 6).¹⁶ In LBP-13-10, the Board "migrated" Contentions 1-3 as challenges to the Staff's DSEIS because the DSEIS discussion of the subject matter of each contention was substantially the same as in Strata's environmental report.¹⁷ With respect to Contention 4/5A, however, the Board found that the information in the DSEIS differed significantly from the information in the environmental report.¹⁸ The Board ruled that the migration tenet did not apply and Joint Intervenors should have submitted a new or amended contention, addressing all the admissibility factors.¹⁹ Therefore, it held that Contention 4/5A would continue as a challenge to Strata's environmental report.²⁰ The Board later denied a motion for reconsideration of its ruling with respect to Contention 4/5A, stating that Joint Intervenors had made no showing on either the good cause or admissibility factors.²¹

¹⁶ *Natural Resources Defense Council's & Powder River Basin Resource Council's Joint Motion to Resubmit Contentions & Admit One New Contention in Response to Staff's Supplemental Draft Environmental Impact Statement* (May 6, 2013) (Motion to Resubmit Contentions); see also Exs. NRC006A to NRC006B, "Environmental Impact Statement for the Ross ISR Project in Crook County, Wyoming Supplement to the Generic Environmental Impact Statement for *In-Situ* Leach Uranium Milling Facilities," NUREG-1910, Supp. 5 (Draft Report for Comment) (Mar. 2013).

¹⁷ LBP-13-10, 78 NRC at 151. Under the "migration tenet," where the information in the Staff's environmental review document is "sufficiently similar" to the material in the applicant's environmental report, an existing contention based on the application can be "migrated," or deemed to apply to the Staff's review document as it did to the application. *Id.* at 132-33 (citations omitted). As the Board explained, this case management practice obviates the need for intervenors to file an essentially identical contention challenging the Staff's document followed by a motion to dismiss the existing contention as moot. *Id.* at 133 n.8.

¹⁸ *Id.* at 141-44.

¹⁹ *Id.* at 143.

²⁰ *Id.*

²¹ Reconsideration Order at 4-6.

The Board also declined to admit Joint Intervenors' proposed Contention 6, which argued that the Staff's NEPA analysis should consider the development of the entire Lance District as the federal action.²² The Board found that Contention 6 was inadmissible because Joint Intervenors had not shown that plans to develop additional *in situ* recovery facilities in the region were sufficiently advanced or interconnected with the proposed action so as to trigger NEPA's requirement that they be submitted in a single environmental impact statement with the proposed license.²³ The Board further reasoned that the contention should have been filed with Joint Intervenors' initial petition to intervene because the environmental report identified the potential for Strata to develop the entire Lance District.²⁴

²² LBP-13-10, 78 NRC at 150.

²³ *Id.* at 144-50. As noted above, Strata has now filed an application to expand its operations into the Kendrick area, contiguous to the Ross site, and the Joint Intervenors have filed scoping comments in that proceeding. See *supra* note 13. Joint Intervenors also submitted a "Notice of Filing" asking that we consider their scoping comments as part of the record in this proceeding. See *Natural Resources Defense Council and Powder River Basin Resource Council's Notice of Filing* (Apr. 27, 2016). The record for this proceeding, however, is closed and Joint Intervenors have not addressed the criteria for reopening the record in 10 C.F.R. § 2.326. Further, had Joint Intervenors filed a motion to reopen the record based on their scoping comments, it does not appear that they would have been able to meet the standards. Motions to reopen must, among other things, "demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a)(3). In their scoping comments Joint Intervenors reiterate the claim (among other things) that the Staff's analysis of the environmental impacts in this proceeding is defective because "the entire project should be considered in a single EIS." Kendrick Project Scoping Comments at 2. But, as discussed in more detail below, the Staff's EIS for the Ross project considered the cumulative impacts of the construction of possible satellite facilities, such as Kendrick, including impacts to geology and soils (see Ex. SEI009A, FSEIS, ch. 5 at 5-18 to 5-19), and surface and groundwater impacts (Ex. SEI009A, FSEIS ch. 5 at 5-20 to 5-29). Moreover, much of the Joint Intervenors' scoping commentary either does not address cumulative impacts or simply raises concerns with respect to the Kendrick area that were fully litigated with respect to the Ross facility—such as containment of mining fluids, baseline water quality characterization, and restoration impacts (see Kendrick Project Scoping Comments, at 6-7). We decline to make Joint Intervenors' scoping comments part of the record here.

²⁴ LBP-13-10, 78 NRC at 149-50.

The Staff completed its Final Supplemental Environmental Impact Statement (FSEIS) in February 2014 and issued the license in April 2014.²⁵ Shortly after the Staff completed the FSEIS, Joint Intervenors again sought to migrate or amend their contentions and offered a proposed Contention 7, which reiterated the claims of Contention 6.²⁶ In May 2014, the Board “migrated” Contentions 1 and 3, admitted an amended Contention 2, and again declined to migrate or amend Contention 4/5A.²⁷ The Board also found Contention 7 inadmissible because it was not based on new information.²⁸ Soon thereafter, the Board granted the Staff’s and Strata’s motions for summary disposition of Contention 4/5A.²⁹

The Board held a hearing in the fall of 2014 on Contentions 1, 2, and 3.³⁰ In its Initial Decision following the hearing, the Board modified one license condition to require Strata to

²⁵ See Exs. SEI009A to SEI009B, FSEIS; Ex. SEI015, Materials License SUA-1601 (Apr. 24, 2014) (License).

²⁶ *Natural Resources Defense Council’s & Powder River Basin Resource Council’s Joint Motion to Migrate or Amend Contentions, and to Admit New Contentions in Response to Staff’s Final Supplemental Draft Environmental Impact Statement* (Mar. 31, 2014) (Motion to Migrate Contentions to FSEIS); see also *Second Declaration of Christopher E. Paine in Support of the Natural Resources Defense Council & Powder River Basin Resource Council’s Joint Motion to Migrate or Amend Contentions, and to Admit New Contentions in Response to the Final Supplemental Environmental Impact Statement* (Mar. 31, 2014) (Second Paine Declaration). Joint Intervenors referred to their proposed contention as “Contention 5” because they had only four contentions pending in the proceeding. See Motion to Migrate Contentions to FSEIS, at 33 n.13. The Board, however, designated the contention “Contention 7” to maintain a consistent numbering system.

²⁷ See FSEIS Order at 19.

²⁸ *Id.* at 14-16, 20.

²⁹ Memorandum and Order (Ruling on Summary Disposition Motion Regarding Environmental Contention 4/5A) (July 25, 2014) (unpublished) (Summary Disposition Order).

³⁰ Notice of Hearing (Notice of Evidentiary Hearing and Opportunity To Provide Oral and Written Limited Appearance Statements), 79 Fed. Reg. 44,471 (July 31, 2014).

properly abandon certain historic drill holes outside the wellfield perimeter.³¹ In all other respects, the Board ruled in favor of Strata and the NRC Staff on all three contentions.³²

Joint Intervenors have petitioned for review of the Board's Initial Decision with respect to all three contentions.³³ They also seek review of the Board's interlocutory decisions refusing to migrate or amend Contention 4/5A and refusing to admit Contentions 6 and 7.³⁴ As detailed below, we find that Joint Intervenors have not raised a substantial question of law or identified a clear factual error and we deny their petition.

II. DISCUSSION

A. Standard of Review

We will grant a petition for review at our discretion, upon a showing that the petitioner has raised a substantial question as to whether:

- (i) a finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding;
- (ii) a necessary legal conclusion is without governing precedent or is a departure from or contrary to established law;

³¹ See LBP-15-3, 81 NRC at 143-44. Strata did not appeal the Board's imposition of this license condition. In December 2015, Strata requested a license amendment to further modify the affected license condition, License Condition 10.12. See Letter from Michael Griffin, Strata Energy, to NRC Document Control Desk (Dec. 23, 2015) (regarding request to amend License Condition 10.12) (ML16020A370). See also *Natural Resources Defense Council and Powder River Basin Resource Council's Notice of Filing* (Feb. 19, 2016), attachment B, Letter from Howard Crystal, Meyer Glitzenstein & Eubanks, LLP, to NRC Document Control Desk (Feb. 17, 2016) (opposing license amendment request). The Staff published a notice of the license amendment request on the NRC public website, along with the opportunity to request a hearing on the amendment. See http://www.nrc.gov/about-nrc/regulatory/adjudicatory/hearing-license-applications.html#acc_docketing. Because this license amendment request has a separate opportunity to request a hearing and is not part of this proceeding, we do not need to further consider this issue here.

³² LBP-15-3, 81 NRC at 153-54.

³³ See Petition at 1.

³⁴ See *id.*

(iii) a substantial and important question of law, policy, or discretion has been raised;

(iv) the conduct of the proceeding involved a prejudicial procedural error; or

(v) any other consideration that we may deem to be in the public interest.³⁵

We review questions of law *de novo*; and we defer to the Board's findings with respect to the underlying facts unless the findings are "clearly erroneous."³⁶ The standard for showing "clear error" is a difficult one to meet: to do so, a petitioner must demonstrate that the Board's determination is "not even plausible" in light of the record as a whole.³⁷ For this reason, where a petition for review relies primarily on claims that the Board erred in weighing the evidence in a merits decision, we seldom grant review.³⁸ We defer to the Board on issues of contention admissibility unless there is an error of law or abuse of discretion.³⁹ Moreover, we generally leave to the Board's judgment whether a proposed contention has a sufficient factual basis to be admitted for hearing.⁴⁰

³⁵ 10 C.F.R. § 2.341(b)(4).

³⁶ *Honeywell International, Inc.* (Metropolis Works Uranium Conversion Facility), CLI-13-1, 77 NRC 1, 18-19 (2013) (citing *David Geisen*, CLI-10-23, 72 NRC 210, 224-25 & n.61 (2010) and *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 26 (2003)).

³⁷ See, e.g., *Shaw Areva MOX Services, LLC* (Mixed Oxide Fuel Fabrication Facility), CLI-15-9, 81 NRC 512, 519 (2015) (citations omitted).

³⁸ See, e.g., *DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 3), CLI-14-10, 80 NRC 157, 162-63 (2014); *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-1, 75 NRC 39, 45-46 (2012).

³⁹ *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-09-16, 70 NRC 33, 35 (2009); *Calvert Cliffs 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 914 (2009).

⁴⁰ *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-15-6, 81 NRC 340, 354-55 (2015); *Crow Butte Resources Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 26 (2014).

B. Contentions Rejected Prior to Hearing

Joint Intervenors seek review of the interlocutory Board decisions relating to three contentions dispositioned prior to hearing: Contention 4/5A, which the Board declined to update as a challenge to the DSEIS and FSEIS; and Contentions 6 and 7, which were never admitted in the proceeding.⁴¹ We find that Joint Intervenors have not raised a substantial question with respect to these decisions.

1. Proposed Contentions 6 and 7

a. Joint Intervenors' Proposed Contentions

Joint Intervenors first challenge the Board's decisions rejecting proposed Environmental Contention 6 (challenging the DSEIS) and Environmental Contention 7 (the same contention, challenging the FSEIS).⁴² As discussed above, Joint Intervenors argued in these contentions that the Staff's NEPA analyses should have considered Strata's development plans for the entire Lance District in a single EIS.⁴³ Joint Intervenors claimed that Strata had "segmented" the Lance District development to mask the actual environmental consequences of its long-term plans and to expedite the licensing process.⁴⁴ To support their contentions, Joint Intervenors cited Council on Environmental Quality (CEQ) regulations providing that proposals that "are related to each other closely enough to be, in effect, a single course of action shall be evaluated

⁴¹ See Petition at 4, 7-10 (challenging LBP-13-10, Reconsideration Order, and FSEIS Order). A petitioner who has been granted intervention and has other contentions pending in the proceeding may not seek immediate review of the Board's contention admissibility rulings. See, e.g., *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-13-3, 77 NRC 51, 54 (2013).

⁴² Petition at 7-10.

⁴³ See Motion to Resubmit Contentions at 19-23; Motion to Migrate Contentions to FSEIS at 33-39.

⁴⁴ Motion to Resubmit Contentions, at 19-23; *Declaration of Christopher E. Paine on Behalf of the Natural Resources Defense Council & Powder River Basin Resource Council in Support of Contentions 4/5A and 6*, (May 6, 2013) (Paine Declaration).

in a single impact statement” and that proposals should be considered a single course of action where they have “similarities that provide a basis for evaluating their environmental consequences together.”⁴⁵ Joint Intervenors also argued that the Supreme Court has ruled in *Kleppe v. Sierra Club* that “when several proposals for ... actions that will have a cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together.”⁴⁶ In support of their contentions, Joint Intervenors cited various public statements and press releases from Strata’s corporate parent indicating that Strata intends to file consecutive applications to develop the entire Lance District.⁴⁷

b. The Board’s Rulings on Contentions 6 and 7

In LBP-13-10, when the Board considered this claim with respect to Contention 6, it concluded that Strata’s expansion plans were not sufficiently well-developed to constitute a “proposal” that the NRC must consider in its review of the Ross Project.⁴⁸ The Board found that the lack of additional “proposals”—actual applications for other facilities—undermined Joint Intervenors’ reliance on both *Kleppe* and the CEQ regulations they cited.⁴⁹ It observed that the Supreme Court held in *Kleppe* that NEPA “does not require an agency to consider the possible environmental impacts of less imminent actions when preparing the [environmental] impact

⁴⁵ Motion to Resubmit Contentions at 19 (quoting 40 C.F.R. §§ 1502.4(a) and 1508.25(a)).

⁴⁶ *Id.* (citing *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976)).

⁴⁷ *See id.* at 20-21; Paine Declaration at 14-31 (unnumbered). The press releases referred to in the Paine Declaration are dated between October 2010 and March 2013. *See id.* at 14 (unnumbered).

⁴⁸ LBP-13-10, 78 NRC at 144-50.

⁴⁹ *Id.* at 145-46.

statement on proposed actions.”⁵⁰ In addition, the Board cited Commission precedent that holds “to bring NEPA into play, a possible future action must at least constitute a ‘proposal’ pending before the agency (i.e., ripeness), and must be in some way interrelated with the action that the agency is actively considering (i.e., nexus).”⁵¹

The Board next analyzed Joint Intervenors’ claim against the three types of actions described in the relevant CEQ regulation: connected, cumulative, and similar.⁵² In the “connected action” portion of its analysis, the Board applied the “independent utility” test devised by the U.S. Court of Appeals for the Ninth Circuit in *Thomas v. Peterson*.⁵³ This test holds that related actions should be discussed together when each would have no independent utility without the other.⁵⁴ The Board found that this was not the case here—the Ross Project has “independent utility” without the possible expansion sites.⁵⁵ While the Board noted that it would be economically and operationally efficient if the processing facility built for the Ross Project were used for satellite facilities, it found that this efficiency fell short of showing that the proposed facility would have no independent utility if the satellite facilities were never built.⁵⁶

⁵⁰ *Id.* at 145 (quoting *Kleppe*, 427 U.S. at 410 & n.20).

⁵¹ LBP-13-10, 78 NRC at 146 (quoting *Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2)*, CLI-02-14, 55 NRC 278, 295 (2002)).

⁵² *Id.* at 147 (citing 40 C.F.R. § 1508.25(a)).

⁵³ *Id.* (discussing *Thomas v. Peterson*, 753 F.2d 754, 758-59 (9th Cir. 1985)).

⁵⁴ *Thomas*, 753 F.2d at 758-59. In *Thomas v. Peterson*, the Ninth Circuit held that in assessing the environmental impacts of a timber road, the U.S. Forest Service must consider the impacts of the timber sales that the road was designed to facilitate. But in that case, the timber sales could not take place without the road and the road had no independent utility apart from the timber sales. *Id.* Other federal courts continue to apply this test. See, e.g., *Webster v. United States Dep’t of Agriculture*, 685 F.3d 411, 426 (4th Cir. 2012).

⁵⁵ LBP-13-10, 78 NRC at 148.

⁵⁶ *Id.* The Board also noted that both the DSEIS and the Environmental Report acknowledged that the processing facility for the Ross Project will be designed to have a processing capacity four times greater than would be needed for the expected production of the Ross Project alone.

The Board concluded that Joint Intervenors had not shown a genuine dispute with respect to the “connected action” aspect of the CEQ’s regulation.⁵⁷ The Board further declined to consider whether the expansion sites might fit the CEQ regulations’ categories of “cumulative” and “similar” projects, because Joint Intervenors nevertheless had failed to show that the information on which their claims were based had not been “previously available.”⁵⁸ Therefore the Board determined that the proposed contention could not satisfy the good cause factors in 10 C.F.R. § 2.309(c).⁵⁹

In Contention 7, Joint Intervenors reasserted the same claims with respect to the FSEIS as Contention 6 had made with respect to the DSEIS.⁶⁰ In support of their motion, Joint Intervenors argued that Strata’s parent company had continued to publicly disclose Strata’s plans to develop satellite facilities within the Lance District, including in a May 2013 statement that exploratory drilling had commenced in the areas surrounding the Ross Project area.⁶¹

The Board found that Contention 7 failed to meet the good cause criteria because it was not based on new information.⁶² The Board noted that the public documents Joint Intervenors

Id. (citing Ex. NRC006A, DSEIS, § 2.1.1.1, at 2-13 and Ex. SEI016A, Environmental Report, § 1.1, at 1-4).

⁵⁷ *Id.* at 149 (citing 10 C.F.R. § 2.309(f)(1)(vi)).

⁵⁸ *Id.* at 149-50.

⁵⁹ *Id.* Petitioners who file a new or amended contention filed after the deadline for filing a petition for intervention must demonstrate good cause by showing that their contention is based on information that was not previously available, materially different from the information that was previously available, and filed in a timely fashion after the information becomes available. 10 C.F.R. § 2.309(c)(i), (ii), (iii).

⁶⁰ Motion to Migrate Contentions to FSEIS, at 33-40.

⁶¹ *Id.* at 35-36.

⁶² FSEIS Order at 14-16.

cited to support the contention were dated from March 2013 through March 2014.⁶³ And only the last of these, a March 2014 presentation from Strata's parent company, was dated within thirty days of Joint Intervenors' motion.⁶⁴ The Board concluded that the presentation was not materially different from previously available information and that Joint Intervenors had not satisfied the good cause factors under 10 C.F.R. § 2.309(c).⁶⁵

c. *Review Denied With Respect to Proposed Contentions 6 and 7*

On appeal, Joint Intervenors argue that the Board's rulings erroneously conflated the merits of the contention with its admissibility and that the Board erred in not finding good cause for filing Contentions 6 and 7 after the deadline for filing the initial intervention petition.⁶⁶ Joint Intervenors argue that the Board required them to prove that the Lance District's development is a single project, when the contention admissibility factors only require "a concise statement of the alleged facts."⁶⁷

With respect to whether Contention 7 was based on new information, we observe that Strata disclosed the potential for future satellite facilities in its application.⁶⁸ Moreover, it is apparent that Joint Intervenors were aware of these facilities from the fact that they raised the

⁶³ *Id.* at 15-16.

⁶⁴ *Id.* at 16. See Second Paine Declaration at 16-18 (discussing <http://www.pel.net.au/images/peninsul--aingoequei.pdf>).

⁶⁵ FSEIS Order at 16.

⁶⁶ Petition at 8.

⁶⁷ *Id.*; see also 10 C.F.R. § 2.309(f)(1)(v).

⁶⁸ Ex. SEI016A, Environment Report, at 1-20 to 1-21. "The proposed Ross ISR Project is intended to be just the first of several ISR project sites to be developed in the area. If these other sites are developed, it is likely that they will serve as ancillary or satellite facilities to the proposed Ross project site, with all satellite facilities using the same [central processing plant]." *Id.* at 2-8.

question of cumulative impacts from these facilities in their initial Contention 4/5A.⁶⁹ The Board's conclusion that Joint Intervenors already knew enough to formulate their contentions, and should have done so at the time that the application was filed, was reasonable.

Nor do we discern any error of law in the Board's ruling that the expansion plans would have to be in a sufficiently advanced stage to be considered a "proposal" for action that "bring[s] NEPA into play."⁷⁰ The Board's ruling with respect to the scope of the federal action rested on Supreme Court authority in *Kleppe* as well as our own agency case law, as discussed above.⁷¹ While the Ross Project FSEIS appropriately discussed the cumulative impacts of potential satellite facilities, a single environmental impact statement on the development of the entire Lance District would be speculative at this time.⁷²

Finally, contrary to Joint Intervenors' arguments on appeal, we do not find that the Board strayed into "weighing the merits" in considering the admissibility of these proposed contentions.⁷³ Joint Intervenors had the burden to demonstrate the admissibility of their

⁶⁹ See *Petition to Intervene and Request for Hearing by the Natural Resources Defense Council & Powder River Basin Resource Council*, at 28-29 (Oct. 27, 2011).

⁷⁰ *Id.* at 146 (quoting *McGuire & Catawba*, CLI-02-14 at 295); see also *Webster*, 685 F.3d at 426-27 (agency of the U.S. Department of Agriculture was not required to consider the possible development of a water treatment facility in deciding whether to approve construction of a dam, when no such facility had been proposed).

⁷¹ *Kleppe*, 427 U.S. at 410; *McGuire & Catawba*, CLI-02-14, 55 NRC at 295.

⁷² See Ex. SEI009A, FSEIS, § 5.2.1.1, at 5-5 to 5-8 (discussion of potential satellite facilities and other past or future in situ recovery facilities within 50 miles (80 kilometers) of the proposed project). And the filing of a license amendment request to expand the current Strata Facility, which occurred after the issuance of the Board's decision, does not alter the fact that the Board's ruling was appropriate at the time. See *Kendrick Expansion Amendment*. The FSEIS considered the cumulative impacts of future satellite facilities, such as the proposed *Kendrick* expansion. See generally Ex. SEI009A, FSEIS § 5.2. Joint Intervenors have not provided any basis for us to question this analysis as it applies to this proceeding.

⁷³ See *Petition* at 8.

contention, including establishing a factual predicate for its claims.⁷⁴ Here, the Board had to determine whether there was a sufficient factual basis for the contention in the face of the contrary evidence that no concrete proposals to develop additional sites were pending before the agency at that time. Its discussion relates to the “genuine dispute” element of the contention admissibility factors—not the merits of the underlying claim.⁷⁵ We usually defer to a Board’s judgment as to whether a contention’s proponent has provided adequate support to raise a genuine dispute of material fact.⁷⁶ We see no reason to change this practice here; we find that Joint Intervenors have not raised a substantial question with respect to Contentions 6 and 7.⁷⁷

2. Contention 4/5A

Joint Intervenors seek review of the Board’s decisions declining to admit their “resubmitted” Contention 4/5A as a challenge to the DSEIS, and later, as a challenge to the FSEIS.⁷⁸ As admitted, Contention 4/5A argued that the application failed to consider cumulative impacts on groundwater quantity and quality from satellite facilities that Strata eventually intends

⁷⁴ See *Luminant Generation Co., LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), CLI-11-9, 74 NRC 233, 243-44 (2011) (in rejecting a contention that failed to identify inadequacies in the applicant’s Mitigative Strategies Report, the board did not impermissibly weigh the merits to find that the Mitigative Strategies Report was sufficient).

⁷⁵ See 10 C.F.R § 2.309(f)(vi); see also *AmerGen Energy Company, LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 276-77 (2009) (the board did not impermissibly weigh the merits in finding that petitioners had provided no factual support for their proposed safety contention).

⁷⁶ *Indian Point*, CLI-15-6, 81 NRC at 354-55.

⁷⁷ We note that the Staff intends to prepare a supplemental EIS, rather than an environmental assessment, for the Kendrick expansion, which will consider potential impacts of construction, operation, and restoration of the site. See Kendrick Scoping Notice, 81 Fed. Reg. at 12,144. Joint Intervenors—along with any other interested groups or members of the public—may participate in the separate proceeding regarding the license amendment request for the Kendrick expansion. See Kendrick Expansion Amendment and Kendrick Hearing Notice, 81 Fed. Reg. at 10,285.

⁷⁸ Petition at 4, 9-10.

to develop surrounding the Ross site.⁷⁹ The Board's refusal to migrate or amend Contention 4/5A led to its eventual summary disposition because a challenge to the environmental report was no longer material once the Staff had completed its FSEIS.⁸⁰

Joint Intervenors' challenge with respect to Contention 4/5A, however, only addresses the Board's ruling in LBP-13-10 with respect to good cause.⁸¹ They argue that because the Board itself found that the DSEIS information "differed significantly" from the material in the environmental report, this should be enough to show "good cause" for filing under 10 C.F.R. § 2.309(c), because the information was not "previously available."⁸² Joint Intervenors argue that even if their "Motion to Resubmit" their contentions lacked a "formalistic invocation of the 2.309(c) factors," the Board erred in denying their motion for reconsideration of LBP-13-10, which included such a recitation.⁸³ But good cause was only one basis on which the Board refused to admit Joint Intervenors' "resubmitted" contentions on the DSEIS—the Board also noted that, in addition to demonstrating good cause, Joint Intervenors needed to satisfy "the section 2.309(f)(1) admissibility factors ... to provide the foundation for a new or amended contention."⁸⁴

Even if Joint Intervenors were correct with respect to their argument on appeal related to good cause, they do not argue that the Board erred with respect to the admissibility factors. Because the DSEIS provided new information on cumulative impacts to address the

⁷⁹ LBP-12-3, 75 NRC at 212.

⁸⁰ See Summary Disposition Order at 14-15.

⁸¹ Petition at 9; see 10 C.F.R. § 2.309(c).

⁸² Petition at 9.

⁸³ *Id.*

⁸⁴ See LBP-13-10, 78 NRC at 143.

deficiencies identified in Contention 4/5A, Joint Intervenors needed to challenge that analysis specifically to show that a genuine dispute remained concerning cumulative impacts. And as “the Board is the appropriate arbiter of such fact-specific questions of contention admissibility, we will not second-guess the Board’s evaluation of factual support for [a] contention, absent an error of law or abuse of discretion,” which Joint Intervenors have not shown here.⁸⁵ We therefore decline to take review of the Board’s decisions in LBP-13-10, the Reconsideration Order, and the FSEIS Order with respect to Contention 4/5A.

C. Contentions Decided on the Merits

1. Contention 1

a. Background of Contention 1

In Contention 1, Joint Intervenors claimed that Strata’s groundwater quality monitoring program was inadequate to describe the baseline—or existing—water quality of the various aquifers underlying the Ross site:

The FSEIS fails to comply with 10 C.F.R. §§ 51.90-94, 10 C.F.R. Part 40, Appendix A, and NEPA because it lacks an adequate description of the present baseline (i.e., original or pre-mining) groundwater quality and fails to demonstrate that groundwater samples were collected in a scientifically defensible manner, using proper sampling methodologies. The FSEIS’s departure from NRC guidance serves as additional evidence of these regulatory violations.⁸⁶

Joint Intervenors argued that if the site is not adequately characterized, the potential impacts of the proposed facility cannot adequately be measured.⁸⁷ We agree that the baseline

⁸⁵ *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 326-27 (2012).

⁸⁶ FSEIS Order, app. A (citing Ex. SEI007, Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications, NUREG-1569, §§ 2.7.1, 2.7.3, 2.7.4 (2003) (NUREG-1569)).

⁸⁷ See, e.g., Ex. JTI001-R, Pre-filed Direct Testimony of Dr. Richard Abitz Supporting Joint Intervenors’ Contentions 1 and 3, at 7 (Abitz Direct Testimony).

environmental conditions at a site like Strata must be considered as part of the Staff's NEPA analysis.⁸⁸ As we discuss in more detail below, the Board found Strata's and the NRC Staff's description of the environmental baseline to be sufficient to support the NEPA analysis in the FSEIS.⁸⁹ Joint Intervenors' appeal does not raise an issue that causes us to disturb the Board's determination here.

An applicant for an *in situ* uranium recovery license must describe the hydrology of the proposed site to predict the potential effect such a facility would have on adjacent groundwater and surface waters as required by NEPA.⁹⁰ To do this, the applicant must establish a pre-licensing groundwater monitoring program to provide baseline data sufficient to describe the overall quality of the groundwater.⁹¹ This requirement is also codified in Criterion 7 of Part 40, Appendix A, which requires that "at least one full year prior to any major site construction, a preoperational monitoring program must be conducted to provide complete baseline data."⁹²

Accordingly, Strata conducted a groundwater monitoring program over a two-year period, the results of which were incorporated into the FSEIS.⁹³ Strata's pre-licensing groundwater monitoring activities consisted of six monitoring well clusters, with at least four

⁸⁸ The Board explained that there was some "uncertainty" concerning the terms "baseline" and "background" and whether these terms are interchangeable. See LBP-15-3, 81 NRC at 75-76 n.2. The Board used "baseline" to refer to the prelicensing site characterization and "background" for the values that will be established post licensing. *Id.* We use the Board's terminology.

⁸⁹ See LBP-15-3, 81 NRC at 111.

⁹⁰ See 10 C.F.R. pt. 40, app. A, Criterion 7; see also, Ex. SEI007, NUREG-1569, § 2.7.1.

⁹¹ See Ex. NRC001, NRC Staff's Initial Testimony, at 3-4 (Staff Testimony); see also Ex. SEI007, NUREG-1569, § 2.7.1, at 2-23 to 2-26.

⁹² 10 C.F.R. pt. 40, app. A; see also LBP-15-3, 81 NRC at 89-90.

⁹³ See generally Ex. SEI009A, FSEIS, § 3.5.3.3; Ex. SEI009B, FSEIS, app. C (complete sampling data).

wells in each cluster to collect samples from the ore zone, the aquifers immediately overlying and underlying the ore zone, and the surficial aquifer.⁹⁴ In addition to the samples collected through its own monitoring, Strata used samples from existing water-supply wells located within or adjacent to the Ross site and data from a former research and development operation during the 1970s to characterize the baseline groundwater quality. Staff incorporated all this information into the FSEIS.⁹⁵

Joint Intervenors' expert Dr. Richard Abitz testified that the distribution of the wells used for groundwater sampling did not collect data "representative of overall site conditions," which led to the flawed characterization of the site.⁹⁶ Moreover, Dr. Abitz said that Strata's wells concentrated on the mineralized areas within the aquifer instead of sampling water through the entire thickness of the aquifer, resulting in data that indicated more contamination in the groundwater than is actually there.⁹⁷ Dr. Abitz argued that higher baseline contaminate levels would "allow[] for a substantially more degraded aquifer after restoration" that would preclude the use of the mined aquifer in the future for domestic, livestock, or agricultural needs.⁹⁸ To address this concern, Joint Intervenors urged that the baseline water quality be established through more rigorous protocols—such as those set forth in NRC regulations for post-licensing, preoperational background monitoring or such as the Environmental Protection Agency's

⁹⁴ Ex. SEI009A, FSEIS, § 3.5.3.3, at 3-37 to 3-38. The Board explained that the monitored aquifers, or horizons, were the ore zone, the aquifer underlying the ore zone (referred to as the deep monitoring unit), the aquifer overlaying the ore zone (referred to as the shallow monitoring unit) and the surficial aquifer. See LBP-15-3, 81 NRC at 89.

⁹⁵ Ex. SEI009A, FSEIS, § 3.5.3.3, at 3-38. The research and development operation, known as Nubeth Joint Venture, operated from August 1978 through April 1979 and was decommissioned in 1983. *Id.* § 2.1.1, at 2-11.

⁹⁶ See Ex. JTI001-R, Abitz Direct Testimony, at 10, 16-17.

⁹⁷ *Id.* at 10, 21-22.

⁹⁸ *Id.* at 11, 24.

“Statistical Analysis of Groundwater Monitoring Data at [Resource Conservation and Recovery Act (RCRA)] Facilities.”⁹⁹

b. *The Board’s Ruling on Contention 1*

The Board rejected as a matter of law Joint Intervenors’ argument that the FSEIS site characterization must conform to the more rigorous criteria that specifically apply to post-licensing, preoperational monitoring.¹⁰⁰ In reviewing this contention, the Board explained the difference between pre-licensing site characterization for NEPA purposes and the post-licensing activities used to set restoration values and to detect excursions during operations.¹⁰¹ After receiving a license, a licensee collects groundwater samples from the production and injection wells to establish post-licensing, preoperational background levels for various chemical constituents, which are then used to set restoration goals.¹⁰² At that time, the licensee also installs monitoring wells at the perimeter of each wellfield, which are used to detect leaks during operations.¹⁰³ The Board cited the Standard Review Plan for *In Situ* Leach Uranium Recovery Facilities and Regulatory Guide 4.14 to distinguish between the groundwater monitoring necessary for pre-license site characterization (baseline), and the post-licensing, pre-operation monitoring that will be used for monitoring and site restoration.¹⁰⁴ Further, the Board relied on

⁹⁹ See *id.* at 7-10, 35-40; Tr. at 428 (Abitz); see also Ex. JTI006, EPA, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance (Mar. 2009).

¹⁰⁰ LBP-15-3, 81 NRC at 91-92. That is, the criterion of 10 C.F.R. pt. 40, app. A, Criterion 5 and Criterion 7A do not specifically apply to site characterization under NEPA.

¹⁰¹ *Id.* at 89-90; see also Ex. SEI009A, FSEIS, § 2.1.1.1, at 2-25.

¹⁰² LBP-15-3, 81 NRC at 76, 90; see also 10 C.F.R. pt. 40, app. A, Criterion 5B(5).

¹⁰³ LBP-15-3, 81 NRC at 76, 90-91; see also 10 C.F.R. pt. 40, app. A, Criterion 7A.

¹⁰⁴ LBP-15-3, 81 NRC at 90-91 (citing Ex. SEI007, NUREG-1569, § 2.7; Ex. SEI008, Regulatory Guide 4.14 (Rev. 1), Radiological Effluent and Environmental Monitoring at Uranium Mills (Apr. 25, 1980)). Staff Guidance documents such as standard review plans are entitled to “special weight.” *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-05-15, 61 NRC 365,

our decision in *Hydro Resources*, where we stated that conducting the more detailed post-licensing analysis “to establish definitively the groundwater quality baselines and upper control limits” is “consistent with industry practice and NRC methodology”; and, in fact, this analysis cannot be completed until after licensing, when an *in situ* leach well field has been installed.¹⁰⁵ The Board held that the fact that Strata’s groundwater monitoring (on which the FSEIS relied) did not conform to post-licensing monitoring or other, more rigorous, procedures did not undermine the sufficiency of the site characterization *per se*.¹⁰⁶

This conclusion, however, did not end the Board’s inquiry into Contention 1—the Staff was still required to show that the FSEIS sufficiently described the site. The Board next considered Joint Intervenors’ specific arguments that the FSEIS’s description of the groundwater at the Ross Project site was inaccurate or incomplete for the purposes of NEPA.¹⁰⁷ After a detailed discussion of each purported defect, the Board ruled in favor of the Staff and Strata on each point.¹⁰⁸

c. *Petition for Review of Contention 1*

(1) NO SUBSTANTIAL QUESTION OF LEGAL ERROR IN CONTENTION 1

Joint Intervenors argue that the Board erroneously held that it is permissible to defer “meaningful” or “accurate” baseline characterization until after the license is issued.¹⁰⁹ Joint

375 n.26 (2005) (quoting *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-900, 28 NRC 275, 290 (1988)).

¹⁰⁵ LBP-15-3, 81 NRC at 91 (citing *Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, New Mexico 87313), CLI-06-1, 63 NRC 1, 6 (2006)).

¹⁰⁶ *Id.* at 91-92.

¹⁰⁷ *Id.* at 93-110.

¹⁰⁸ *Id.* We do not provide a discussion of the technical arguments resolved in Staff’s favor that are not the subject of Joint Intervenors’ petition.

¹⁰⁹ Petition at 10-11.

Intervenors have not raised a “substantial question” of law with respect to the applicable standards for site characterization—their claim mischaracterizes the Board’s ruling. The Board did not rule that “meaningful” baseline characterization may be deferred until the post-licensing period. Rather, it held that the groundwater monitoring used to describe the environmental conditions at the site for NEPA purposes need not conform to the groundwater monitoring requirements applicable to an operating facility.¹¹⁰ The two standards serve different purposes.

Joint Intervenors argue generally that NEPA requires the collection of accurate information prior to making a decision.¹¹¹ While we agree that the information in the FSEIS must be accurate, in this instance Joint Intervenors equate accuracy with the volume of data collected. Joint Intervenors provide no justification for challenging the validity of the Staff’s NEPA analysis beyond a call for the collection of additional data.¹¹² But our regulations do not require licensees or the Staff to conduct the additional sampling that Joint Intervenors request before the issuance of a license. Joint Intervenors have not shown that additional groundwater sampling is necessary to characterize the existing site conditions or the expected environmental impacts of the proposed operation. While it is always possible to gather more data, at some point the Staff must “move forward with decisionmaking.”¹¹³ And, as explained below, Joint Intervenors do not raise a substantial question relating to the Board’s fact finding with respect to Strata’s site characterization. Given that the Board based its legal ruling on precedent and

¹¹⁰ LBP-15-3, 81 NRC at 91-92.

¹¹¹ Petition at 11.

¹¹² *Id.* at 12-14.

¹¹³ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010) (quoting *Town of Winthrop v. Federal Aviation Administration*, 535 F.3d 1, 11 (1st Cir. 2008)).

applicable Staff guidance, we see no substantial question of law relating to NEPA's site characterization requirements.

Joint Intervenors additionally argue that the Board improperly shifted the burden of proof to Joint Intervenors.¹¹⁴ We disagree. The Board acknowledged that the Staff has the burden to prove the sufficiency of the FSEIS.¹¹⁵ When considering challenges to how the Board weighed the evidence, we “defer to the Board’s expertise as the fact finder and decline to substitute the judgment [of an Intervenor’s expert] for that of the Board.”¹¹⁶

(2) NO SUBSTANTIAL QUESTION OF FACTUAL ERROR IN CONTENTION 1

We also decline to take review of Joint Intervenors’ factual challenges with respect to Contention 1. Although Joint Intervenors raised many challenges to Strata’s site characterization before the Board, their petition (and thus our decision today) focuses on only two.¹¹⁷

Joint Intervenors first claim that the monitoring wells were not “located and distributed in a manner designed to collect data representative of overall site conditions.”¹¹⁸ Joint Intervenors aver that “no one disputed” that Strata’s approach “was neither designed to, nor did, collect representative baseline water quality data.”¹¹⁹

We see no “clear error” in the Board’s fact finding relating to this complex issue. Contrary to Joint Intervenors’ assertion, the Staff and Strata vigorously disputed Joint

¹¹⁴ Petition at 11-12.

¹¹⁵ LBP-15-3, 81 NRC at 84-85.

¹¹⁶ See, e.g., *Oyster Creek*, CLI-09-7, 69 NRC at 266.

¹¹⁷ Petition for Review at 11-14.

¹¹⁸ *Id.* at 12 (citing Ex. JTI001-R, Abitz Direct Testimony, at 16).

¹¹⁹ *Id.* at 13.

Intervenors' claim that the site characterization was insufficient.¹²⁰ Moreover, the Board cited ample record support for its conclusions. It observed that Strata's collection methods had generated "362 groundwater samples (with 16,000 chemical and radiological parameters)."¹²¹ The Board also noted that "the number and location of wells was based on factors such as [Wyoming Department of Environmental Quality] guidelines, ... having consistent/continuous water-bearing intervals above and below mineralization, satisfactory confining layer thickness, proximity to existing drilling data, sufficient spatial distribution for development of potentiometric data, and landowner considerations."¹²² The Board also discussed Joint Intervenors' evidence, specifically the testimony of their expert Dr. Abitz.¹²³ In considering the record here, the Board found that there was no evidence of "actual bias (or an attempt to induce a biased result)" in the number and location of wells.¹²⁴ Given that the Board considered and weighed the evidence from all parties, and based on our review of Joint Intervenors' petition, we will not second guess the Board's conclusion that the number of samples and location of wells were sufficient to support the Staff's FSEIS.

¹²⁰ See Ex. NRC001, Staff Testimony at 12-14 ("Because the location and placement of Strata's wells and the sampling and analytical methods used were consistent with those described in Section 2.7 [of the Standard Review Plan], the Staff found that the quality of the baseline groundwater data presenting in the FSEIS was adequate for use in assessing the Ross Project's potential environmental impacts."); Ex. SEI005, Initial Written Testimony of Ben Schiffer, at 9 ("In my experience and opinion, 16,000 results from more than 362 groundwater samples provides a representative, quantitative description of the baseline groundwater quality within and adjacent to the project boundary. As importantly in my opinion, these data more than meet the intent of NEPA").

¹²¹ LBP-15-3, 81 NRC at 93-94. The Board cited *Pilgrim*, wherein we held that NEPA does not require that unlimited resources be devoted to information-gathering so long as the result is reasonable. *Pilgrim*, CLI-10-11, 71 NRC at 315.

¹²² LBP-15-3, 81 NRC at 94 n.19 (citing Ex. SEI016A, Environmental Report, at 3-101 and Ex. SEI045, Rebuttal Testimony of Ben Schiffer, at 15).

¹²³ *Id.* at 93-95.

¹²⁴ *Id.* at 94.

Joint Intervenors next dispute the Board's finding that Strata's well screening intervals were "appropriate" for site characterization.¹²⁵ That is, they claim that Strata's sampling wells were designed to draw water only through the parts of the ore zone aquifer that contain "stacked ore horizons" (uranium deposits), thereby biasing the results toward higher concentrations of uranium and radium-226.¹²⁶ Joint Intervenors generally assert that the wells should be screened through the entire thickness of the aquifer.¹²⁷

The Board found that Strata's well screening intervals did not inappropriately bias the results of its site characterization activities.¹²⁸ The Board acknowledged that the wells did not draw water from the entire thickness of the ore zone aquifer.¹²⁹ Nevertheless, it found the results were not biased because some of the wells were located in the nonmineralized parts of the aquifer, and, for those wells located in the mineralized zones, the screened intervals were "long enough to collect groundwater from nonmineralized layers between ore horizons."¹³⁰ It concluded that the well screening protocol used by Strata was sufficient for site characterization.¹³¹

¹²⁵ Petition for Review at 13-14.

¹²⁶ *Id.*; see also JTI001-R, Abitz Direct Testimony, at 21-22. The Board explained that "'well screening' denotes the use, at the intake portion of a well, of a porous filter that allows groundwater to be sampled from a targeted aquifer or a specific horizon within an aquifer." See LBP-15-3, 81 NRC at 97 n.23.

¹²⁷ Petition for Review at 13-14.

¹²⁸ LBP-15-3, 81 NRC at 98-99.

¹²⁹ *Id.* at 98.

¹³⁰ *Id.* at 99.

¹³¹ *Id.* at 98-100. Joint Intervenors also claimed before the Board that the Standard Review Plan requires that wells be "fully screened" through the "entire thickness of the aquifer," but, as the Board pointed out, the Standard Review Plan section in question only applies to the perimeter monitoring wells that are to be installed to detect excursions, not for site characterization. See *Id.* at 98-99 (citing Ex. SEI007, NUREG-1569, § 5.7.8.3, at 5-42 to 5-43).

Joint Intervenors do not show clear error in the Board's finding of fact with respect to well screening intervals. The Board provided a plausible explanation why the well screening protocols would not unduly bias the groundwater sampling results, and well screening was just one sub-issue of many the Board considered with respect to this contention. It is apparent that the Board considered evidence and arguments from both sides of each of Joint Intervenors' specific technical complaints, including the two they discuss in their petition for review.

We decline to review a board's "plausible decision that rests on carefully rendered findings of fact," even where the record includes evidence that supports a different view.¹³² We therefore find that Joint Intervenors have not raised a substantial question with respect to the Board's findings of fact on Contention 1.

2. Contention 2

a. Background of Contention 2

In Contention 2, Joint Intervenors argued that the FSEIS did not consider the extent to which groundwater will be degraded due to the establishment of alternate concentration limits for hazardous constituents after site restoration:

The FSEIS fails to meet the requirements of 10 C.F.R. §§ 51.90-94 and NEPA because it fails to evaluate the virtual certainty that the applicant will be unable to restore groundwater to primary or secondary limits in that the FSEIS does not provide and evaluate information regarding the reasonable range of hazardous constituent concentration values that are likely to be applicable if the applicant is required to implement an [alternate concentration limit] in accordance with 10 C.F.R. Part 40, App. A, Criterion 5B(5)(c).¹³³

¹³² *Private Fuel Storage*, CLI-03-8, 58 NRC at 25-26.

¹³³ FSEIS Order, app. A.

Joint Intervenors maintained that alternate concentration limits are inevitable at the Ross Project site because no decommissioned *in situ* uranium recovery facility has ever met primary or secondary standards for all contaminants.¹³⁴

As explained with respect to Contention 1, *in situ* recovery facility licensees must establish restoration goals for hazardous constituents in groundwater through post-licensing, pre-operational testing.¹³⁵ Under the terms of its license, Strata must restore the groundwater in each wellfield to regulatory limits.¹³⁶ The first option for any given constituent is background (the level present prior to operations), which the Board termed the “primary” standard.¹³⁷ The “secondary” standard to which the contention refers is a maximum contaminant level provided for certain constituents in Part 40, Appendix A, Table 5C.¹³⁸ If the licensee cannot meet primary or secondary standards for a particular constituent after restoration efforts, it may file a license amendment request for a site-specific alternate concentration limit for that constituent.¹³⁹ To receive the license amendment, the licensee must demonstrate both that the concentration of the particular hazardous constituent is as low as reasonably achievable and that the alternate concentration limit presents no significant hazard to human health or the environment, in accordance with factors listed in Criterion 5B(6). These factors include potential adverse effects to groundwater and to hydraulically connected surface water, current and future uses of the

¹³⁴ See Motion to Migrate Contentions to FSEIS, at 23-25.

¹³⁵ See *generally*, 10 C.F.R. pt. 40, app. A, Criterion 7A.

¹³⁶ See Ex. SEI015, License, at 7 (License Condition 10.6).

¹³⁷ See LBP-15-3, 81 NRC at 114 (citing 10 C.F.R. pt. 40, app. A, Criterion 5B(5)(a)).

¹³⁸ 10 C.F.R. pt. 40, app. A, Criterion 5B(5)(b), Table 5C; see *also* LBP-15-3, 81 NRC at 114. The values provided in Table 5C are the Maximum Constituent Levels set by the Environmental Protection Agency in 40 C.F.R. pt. 192, Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings.

¹³⁹ 10 C.F.R. pt. 40, app. A, Criterion 5B(5)(c).

ground and surface waters, and possible cumulative effects with other sources of contamination.¹⁴⁰ The license amendment application would also be subject to an opportunity for interested persons to request a hearing.

In admitting the contention at the outset of the proceeding, the Board rejected the Staff's argument that the environmental effects of possible alternate concentration limits are too uncertain for consideration in the FSEIS.¹⁴¹ The Board acknowledged that the Staff "likely" could not determine prior to licensing the facility what alternate concentration limits would be approved for a particular wellfield after restoration.¹⁴² But the Board reasoned that the Staff could perform a bounding analysis to consider the range of alternate concentration limits that have been approved historically.¹⁴³

The Staff accordingly included a discussion of three approved aquifer restorations in the FSEIS.¹⁴⁴ These three restorations could give only a general idea of the range of possible future alternate concentration limits for the Ross Project because they had all been approved at a time when the Staff used a different interpretation of "secondary" standard than it now uses.¹⁴⁵

¹⁴⁰ *Id.*, Criterion 5B(6).

¹⁴¹ LBP-12-3, 75 NRC at 197.

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ Ex. SEI009A, FSEIS, § 4.5.1.3, at 4-45 to 4-46.

¹⁴⁵ Crow Butte Wellfield 1 restoration was approved in 2003 (see Ex. NRC026, Letter from Daniel M. Gillen, NRC, to Michael L. Griffen, Crow Butte Resources, Inc., License Amendment 15, Crow Butte Resources *In Situ* Leach Facility, License No. SUA-1534, Wellfield #1 Restoration Acceptance (Feb. 12, 2003) (Crow Butte Wellfield 1 Approval)). Smith Ranch-Highland Wellfield A was approved in 2004 (see Ex. NRC027, Letter from Gary S. Janosko, NRC to W. F. Kearney, Power Resources, Inc., License Amendment 15, Crow Butte Resources *In Situ* Leach Facility, License No. SUA-1534, Wellfield #1 Restoration Acceptance (June 29, 2004)). Irigaray Mine Units 1-9 restoration was approved in 2006 (see Ex. NRC034, Letter from Gary S Janosko, NRC, to Donna L. Wichers, COGEMA Mining, Inc., Review of Cogema Mining,

Prior to 2009, the Staff considered the “secondary standard” to be coextensive with the “pre-operational class of use” established by the state, which—as the Board’s decision acknowledges—is not accurate.¹⁴⁶ Alternate concentration limits were not considered necessary at the three sites discussed in the FSEIS bounding analysis because they all met the “pre-operational class of use” standard following restoration.¹⁴⁷ Therefore, those licensees did not have to meet the more stringent criteria—set forth at Part 40, Appendix A, Criterion 5B(6)—that apply at the Ross site.¹⁴⁸ In contrast, before any alternate concentration limit could be approved for any constituent at the Ross Project site, Strata would have to show that its concentration is as low as reasonably achievable and meets the other criteria set forth in Criterion 5B(6). For this reason, the FSEIS bounding analysis provides a conservative basis for predicting the likely range of alternate concentration limits that might be approved following restoration of the Ross Project site.

The FSEIS states that for the three sites discussed in the bounding analysis, most of the groundwater quality constituents were either restored to post-licensing, preoperational background levels or to “class I (domestic use)” standards.¹⁴⁹ In addition, where elevated levels

Inc., Irigaray Mine Restoration Report, Production Units 1 Through 9, Source Materials License SUA-1341 (Sept. 20, 2006)).

¹⁴⁶ See LBP-15-3, 78 NRC at 116 n.46; see also Ex. SEI009A, FSEIS, § 4.5.1.3, at 4-45.

¹⁴⁷ After a 2009 Regulatory Issue Summary found this interpretation to be in error, the Staff has used the concentrations set forth in 10 C.F.R. pt. 40, app. A, Table 5C as the secondary standard. Ex. NRC038, NRC Regulatory Issue Summary 2009-05, Uranium Recovery Policy Regarding: (1) the Process for Scheduling Licensing Reviews of Applications for New Uranium Recovery Facilities and (2) the Restoration of Groundwater at Licensed Uranium *In Situ* Recovery Facilities, at 3 (Apr. 29, 2009).

¹⁴⁸ Ex. SEI009A, FSEIS, § 4.5.1.3, at 4-45.

¹⁴⁹ *Id.* at 4-48. The state department of environmental quality determines the water quality standards. The Wyoming Department of Environmental Quality has standards for Class I (domestic use), Class II (agricultural use), or Class III (livestock use).

of certain hazardous constituents persisted after restoration, this did not change the class of use.¹⁵⁰ The FSEIS concludes that, given the relative success of past restorations, the impacts to groundwater quality in the exempted portion of the aquifer and the confined aquifers surrounding the exempted aquifer would be small following restoration at the Ross Project site.¹⁵¹

The Board found that the Staff's approach in the FSEIS, as supplemented by the record in this proceeding, "adequately identifies the potential impacts" of an alternate concentration limit, should one be necessary for the Ross project.¹⁵² The Board found that the Staff's determination that impacts would be small was supported by the fact that the mined portion of the aquifer has been permanently exempted as a source of drinking water and "there have been no reported instances of an excursion from an [*in situ* uranium recovery] facility negatively impacting drinking water."¹⁵³ The Board concluded that the record supported the Staff's ultimate conclusion that the likely impact due to alternate concentration limits is small:

[T]he FSEIS, as supplemented by the uranium bounding analysis discussed in this decision, adequately identified the potential environmental impacts of an [alternate concentration limit] should an [alternate concentration limit] be necessary for the Ross Project site. Furthermore, the preponderance of the evidence before the Board supports the FSEIS determination that the

¹⁵⁰ *Id.*

¹⁵¹ *Id.* The FSEIS explains that operations will be conducted within an area defined by an aquifer exemption permit granted by the Wyoming Department of Environmental Quality and approved by the Environmental Protection Agency. See *id.*, § 2.1.1.1, at 2-27; see also Ex. SEI0034, Letter from Derrith R. Watchman-Moore, U.S. Environmental Protection Agency, Region 8, to Kevin Frederick, Wyoming Department of Environmental Quality, aquifer exemption approval: Strata Energy (May 15, 2013). The area covered by the exemption permit is referred to as the exempted aquifer but is actually a portion of the mined (ore zone) aquifer.

¹⁵² LBP-15-3, 81 NRC at 133. The FSEIS omitted the uranium concentration approved for two of the three sites discussed (Smith Ranch-Highland facility and Irigaray Mine Units 1-9). See Ex. SEI009A, FSEIS, § 4.5.1.3, at 4-46. But this information was provided in the Staff's testimony. See Ex. NRC001, Staff Initial Testimony, at 33; see also LBP-15-3, 81 NRC at 117.

¹⁵³ LBP-15-3, 81 NRC at 132.

restoration-associated impacts on groundwater quality within the Ross Projects site [ore zone] aquifer and surrounding aquifers will be SMALL.¹⁵⁴

b. Claims of Factual Error in Resolution of Contention 2

On appeal, Joint Intervenors argue that the Board made several errors in affirming the Staff's conclusion that the potential environmental impacts from alternate concentration limits would be small.¹⁵⁵ At bottom, these arguments amount to disagreements with how the Board weighed the evidence.

(1) CLAIM THAT BOARD RELIED ON EVIDENCE NOT IN THE RECORD

Joint Intervenors argue that the Board erred in relying on evidence that was not in the record—specifically, a “transport model” relating to the restoration approval for the Crow Butte Resources wellfield 1 in Nebraska (one of the examples used in the Staff's “bounding analysis” for the Ross Project).¹⁵⁶ As explained below, Joint Intervenors show no clear error in the Board's decision, nor do they raise a substantial question of prejudicial procedural error in the Board's decision not to require documentary evidence related to transport modeling at the Crow Butte site.

In Contention 2, Joint Intervenors claimed that the Staff will approve any number as an alternate concentration limit, provided the licensee first reasonably attempts to meet primary or secondary limits.¹⁵⁷

At the hearing, the Staff denied that its practice is to set alternate concentration limits based on how much effort the licensee has expended. The Staff's witness, Dr. Johnson, stated

¹⁵⁴ *Id.* at 133.

¹⁵⁵ Petition at 16-21.

¹⁵⁶ *Id.* at 16-17.

¹⁵⁷ See e.g., Ex. JTI003-R, Pre-Filed Testimony of Dr. Lance Larson on Contentions 2 and 3, at 22 (Aug. 25, 2014) (Larson Direct Testimony).

that the Staff generally evaluates the “transport that would go on from the location within the [exempted] area out to that exempted boundary, the boundary of the exempted aquifer.”¹⁵⁸ In other words, the Staff evaluates whether the contaminants would naturally attenuate to primary or secondary levels by the time the groundwater reaches the boundary of the exempted portion of the aquifer.¹⁵⁹ Joint Intervenors’ expert requested to see the “transport model” used by the Staff for the Crow Butte site.¹⁶⁰ In response, Dr. Johnson replied that the documents supporting the Crow Butte license amendment approval had been included in the Staff’s exhibits.¹⁶¹ On appeal, Joint Intervenors argue that the Board erred because its conclusion rested in part on “a non-existent transport model.”¹⁶²

We find no Board error here; the Board appropriately relied on the Staff’s and Strata’s testimony in reaching its decision.¹⁶³ Contrary to Joint Intervenors’ assertions, the Staff provided extensive documentation to support its use of the Crow Butte analysis to support its NEPA review here.¹⁶⁴ The Staff never claimed to have a document called a “transport model”

¹⁵⁸ Tr. at 617 (Johnson); see LBP-15-3 at 121.

¹⁵⁹ See Tr. at 559-60, 617 (Johnson).

¹⁶⁰ *Id.* at 618 (Larson and Johnson).

¹⁶¹ *Id.* at 618-19 (Larson and Johnson).

¹⁶² Petition at 16-17 (citing LBP-15-3, 81 NRC at 121).

¹⁶³ See LBP-15-3, 81 NRC at 121 (citing Tr. at 617 (Johnson)). It is not error for a board to rely on witness testimony. See, e.g., *Oyster Creek*, CLI-09-7, 69 NRC at 268.

¹⁶⁴ Staff provided several documents supporting its approval of the Crow Butte restoration. See, e.g., Ex. NRC022, Letter from Stephen P. Collings, Crow Butte Resources, Inc., to John Surmeier, NRC, Mine Unit 1 Restoration Report Submittal and Request for License Amendment (Jan. 14, 2000); Ex. NRC023, Letter from Stephen P. Collings, Crow Butte Resources, Inc., to Melvyn Leach, NRC, Mine Unit 1 Restoration; Response to Request For Additional Information (Aug. 24, 2001); Ex. NRC024, Letter from Michael L. Griffin, Crow Butte Resources, Inc. to Daniel M. Gillen, NRC, Mine Unit I Groundwater Stability Data (Oct. 11, 2002); Ex. NRC026, Crow Butte Wellfield 1 Approval.

on the record—the Board’s discussion of the Staff’s testimony, as cited by Joint Intervenors, refers to “transport modeling,” not a “transport model.”¹⁶⁵ While the Board certainly could have asked the parties to produce additional documentary evidence, it was not required to do so. The Staff’s testimony regarding its practice when approving previous restorations provided a reasonable basis for determining how the Staff would address a request for an alternate concentration limit at the Ross Project site, and Joint Intervenors have not raised a substantial question regarding the Board’s reliance on the Staff’s practice here.

(2) CLAIM THAT BOARD MISINTERPRETED THE DATA CONCERNING RESTORATION APPROVAL OF SMITH RANCH-HIGHLAND SITE

Joint Intervenors next argue that the Board misinterpreted the evidence concerning the Smith Ranch-Highland facility, Wellfield A, the restoration of which the Staff approved in 2004.¹⁶⁶ Specifically, they argue that the Board mistakenly interpreted testimony of their expert Dr. Larson to refer to groundwater samples taken during the period when groundwater was still undergoing active restoration, when the data actually was gathered during the “stability” period (that is, after active restoration when the licensee was attempting to ascertain whether hazardous constituent concentrations had stabilized).¹⁶⁷

Joint Intervenors’ argument points to no material error. The Board found that Dr. Larson’s data was not relevant because it reflected site conditions prior to the time the Staff approved the restoration.¹⁶⁸ The focus of Contention 2 was the reasonable range of alternate

¹⁶⁵ Petition at 16 (quoting LBP-15-3, 81 NRC at 121). Moreover, the term “transport modeling” was not used by the Staff expert in discussing the Staff’s work with the Board—the Board introduced the term to refer to the Staff’s work as part of the discussion in LBP-15-3. See LBP-15-3, 81 NRC at 121.

¹⁶⁶ Petition at 17-18.

¹⁶⁷ *Id.* (citing Ex. JTI005A-R2, NRC ISL Database Spreadsheets, at 227-32).

¹⁶⁸ LBP-15-3, 81 NRC at 123-24.

concentration limits that might be approved at the Ross Project site *after* its restoration is approved. Regardless of whether Dr. Larson's data came from the restoration period or the stability period, its relevance to Contention 2 is minimal because only the concentrations that the Staff actually approved for restoration matter to the bounding analysis.¹⁶⁹

(3) CLAIM THAT BOARD IGNORED EVIDENCE OF EXCURSIONS

Joint Intervenors next argue that the Board "dismissed evidence of mining fluid excursions impacting water in vertically or horizontally adjacent aquifers outside the exempted areas."¹⁷⁰ Joint Intervenors cite four paragraphs of the Board's decision to support their claims, and they are correct that the Board does not discuss vertical or horizontal excursions in those four paragraphs.¹⁷¹

The evidence that Joint Intervenors cite, however, relates to excursions at sites for which restoration had not been approved.¹⁷² Joint Intervenors do not explain how vertical or horizontal excursions at these sites are relevant to Contention 2, which concerns elevated hazardous constituent levels that may linger on the site after restoration has been approved.

¹⁶⁹ Joint Intervenors also argue that the Board confused Staff testimony concerning a different site with the evidence concerning Smith Ranch-Highland Wellfield A. Petition at 18. This is incorrect. The Board simply pointed to the Staff's discussion of the other site to show that it is inappropriate to average the results of samples taken during restoration because only the concentrations at the end of the restoration process (at the point of Staff approval) are relevant to the question of what concentrations the Staff might approve at the Ross Project site. See LBP-15-3, 81 NRC at 123-24.

¹⁷⁰ See Petition at 18-19.

¹⁷¹ *Id.* at 18 (citing ¶¶ 4.98-4.101, LBP-15-3, 81 NRC at 126-28).

¹⁷² See Ex. JTI036, 2012 Status Update Casing Leak Investigation C, E, and F Wellfields Smith Ranch-Highland Operations, at 59-85 (Feb. 20, 1013). Joint Intervenors' Petition also refers to pages 61-62 of Ex. JTI005B-R2, which is only 35 pages long. See Petition at 19 n.21. We observe that most of the pages of this exhibit discuss a project (Willow Creek/Christensen Ranch) that the Board found not to be relevant to Contention 2 because site restoration has not been approved. See LBP-15-3, 81 NRC at 126-27. The exhibit also discusses shallow aquifer contamination at Smith Highland Ranch due to excursions during operations, but that issue is likewise not relevant to Contention 2.

On appeal, Joint Intervenors do not cite any testimony or pleading to support their claim that excursions during operations or restoration relate to Contention 2. We do not consider cursory, unexplained legal arguments, and we will not speculate about what a pleading is supposed to mean.¹⁷³ Therefore, Joint Intervenors have not identified a Board error that would warrant granting their petition for review.

(4) CLAIM THAT BOARD UNJUSTIFIABLY RELIED ON EXEMPTION AND ON FUTURE PROCESSES TO PROTECT THE AQUIFER

Joint Intervenors also argue that the Board erred in relying on the aquifer exemption granted by Wyoming and the license amendment process as additional support for upholding the Staff's conclusion that impacts from alternate concentration limits will be small.¹⁷⁴

We find that Joint Intervenors have not raised a substantial question with respect to the Board's findings. As an initial matter, the fact that the mined portion of the aquifer is permanently exempted as a source of drinking water and the possibility of a future hearing on an alternate concentration limit were only two factors the Board discussed in concluding that the FSEIS discussion of post restoration impacts was reasonable. Moreover, contrary to Joint Intervenors' suggestion, these factors support the FSEIS's conclusion that any elevated hazardous constituent levels left at the Ross Site following restoration would have a small overall environmental impact.

Our regulations and license amendment process require that no alternate concentration limit be approved without meeting safety criteria, regardless of whether any intervenor has

¹⁷³ See, e.g., *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Plant), CLI-10-17, 72 NRC 1, 30 (2010); *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999) (quoting *Kansas Gas and Electric Co.* (ALAB-279, 1 NRC 559, 576 (1975))).

¹⁷⁴ Petition at 19-20.

contested the matter.¹⁷⁵ If a licensee fails to show that a proposed alternate concentration limit meets the standards of Criterion 5B(6), then it will have to restore to primary or secondary limits.¹⁷⁶ Moreover, Joint Intervenors and any other interested party will have the opportunity to submit contentions and request a hearing on any future license amendment related to alternate concentration limits, should such an amendment become necessary for this site.

Joint Intervenors' argue that because the future concentration limits are unknown, the Staff cannot show that it meets NEPA now and that the Staff did not provide sufficient information to support its finding that the environmental impacts will be small.¹⁷⁷ However, Joint Intervenors have not pointed to any specific matter where the Board refused to consider their arguments and supporting evidence. It was appropriate for the Board to rely on the testimony from the Staff's experts describing how the Staff reviews secondary concentration limits in license amendment applications. And the Board also modified a license condition in response to Joint Intervenors' concerns that unplugged exploratory wells (or boreholes) existing on the site could cause vertical excursions during operations.¹⁷⁸ The Board's narrowly tailored relief appropriately addresses the concerns raised by Joint Intervenors.

In sum, Joint Intervenors have not identified clear error in the Board's factual findings relating to post-restoration contamination levels in the mined aquifers. None of their arguments call into question the Board's judgment that the FSEIS, as supplemented by the hearing record,

¹⁷⁵ See *generally*, 10 C.F.R. pt. 40, app. A, Criterion 5B(5).

¹⁷⁶ See Ex. SEI015, License, at 7-8 (License Condition 10.6).

¹⁷⁷ See Petition at 19-20.

¹⁷⁸ See LBP-15-3, 81 NRC at 143-44. The Board modified License Condition 10.2, which requires the licensee to locate and properly abandon historic exploratory wells or boreholes that may exist on the site. The Board expanded the reach of the License Condition to include wells outside the perimeter monitoring ring and downgradient of the wellfield. *Id.*

reasonably concluded that the impact of hazardous constituents persisting in the aquifer after restoration would be small.

c. Claims of Legal Error in Resolution of Contention 2

Joint Intervenors raise one legal argument with respect to Contention 2: that the Staff's issuance of the license prior to the hearing and Board decision violates NEPA.¹⁷⁹ They argue that if the hearing record and Board decision are necessary to complete, or even correct, the environmental record, then the license must be vacated and remanded to the Staff so that it may consider the complete NEPA analysis prior to deciding whether to issue the license.¹⁸⁰ To support their claim, Joint Intervenors point to the Board's agreement with their concern that Staff's analysis was flawed in some respects.¹⁸¹ Joint Intervenors argue that the Board simply "declar[ed] these violations cured" by its decision, violating the "fundamental NEPA precepts that data may not be utilized simply to 'justify[] decisions already made.'"¹⁸²

Joint Intervenors fail to raise a substantial question for our review because the Board found the Staff's environmental impact determinations to be well-founded. Our adjudicatory proceedings, as we recently discussed in *Crow Butte Resources, Inc.*, contemplate that a Board or the Commission may appropriately modify, condition, or revoke a license, if required by the circumstances of a particular proceeding.¹⁸³ Here, the Board evaluated the Staff's analysis and determined that, with the additional information considered at the hearing and in the Staff's pre-filed testimony, the environmental impacts of the proposed licensing action were appropriately

¹⁷⁹ Petition at 14-16.

¹⁸⁰ *Id.* at 14-15.

¹⁸¹ *Id.* at 14 (citing LBP-15-3, 81 NRC at 122, 124-26).

¹⁸² *Id.* at 15 (citing 40 C.F.R. § 1502.2(g)).

¹⁸³ *Crow Butte Resources, Inc. (In Situ Leach Facility, Crawford, Nebraska)*, CLI-15-17, 82 NRC 33, 40 (2015).

identified.¹⁸⁴ And, after identifying several gaps in the Staff's analysis, the Board determined that modifying a license condition was the appropriate approach to address Joint Intervenors' concerns about groundwater protection.¹⁸⁵ While we agree with Joint Intervenors that remanding, or staying, the license would have been appropriate had the Board determined that the Staff's analysis did not adequately consider the environmental consequences of this licensing action, there is no need for such action here. Here the Board's modification of the environmental record of decision did not change, in any material aspect, the Staff's ultimate determination that impacts to groundwater in the OZ aquifer and surrounding aquifers would be SMALL. Instead, the Board merely modified the record of decision to include a revised license condition and additional analyses that were placed on the record before the Board by various parties.¹⁸⁶ We have previously held that a Board's hearing, hearing record, and subsequent decision on a contested environmental matter augment the environmental record of decision developed by the Staff with respect to this issue¹⁸⁷ and Joint Intervenors have not persuaded us to abandon this practice. Not only have Joint Intervenors failed to demonstrate Board error in reaching this decision, but we find that the environmental record of decision, as modified by the Board supports the issuance of a license to Strata.¹⁸⁸

¹⁸⁴ See LBP-15-3, 81 NRC at 133.

¹⁸⁵ *Id.* at 143-44.

¹⁸⁶ *Indian Point*, CLI-15-6, 81 NRC at 387-88 ("When a hearing is held on a proposed action, 'the initial decision of the presiding officer or the final decision of the Commissioners acting as a collegial body will constitute the record of decision.' ... We have consistently interpreted our regulations to provide that environmental impact statements are modified by any subsequent Board or Commission decision."); see *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001).

¹⁸⁷ *Indian Point*, CLI-15-6, 81 NRC at 388.

¹⁸⁸ It is well settled that parties challenging an agency's NEPA process are not entitled to relief unless they demonstrate harm or prejudice. Joint Intervenors have not done so here because the Board concluded that the Staff's analysis of the reasonably foreseeable impacts from

Therefore, we decline to take review of the Board's legal and factual rulings with respect to Contention 2.

3. Contention 3

In Contention 3, Joint Intervenors argued that Strata and the Staff failed to demonstrate that the mined aquifer is isolated and that Strata can prevent fluid migration outside the production zone during operations:

CONTENTION: The FSEIS fails to assess [adequately] the likelihood and impacts of fluid migration to the adjacent groundwater, as required by 10 C.F.R. §§ 51.90-94 and NEPA, and as discussed in NUREG-1569 § 2.7, in that:

1. The FSEIS fails to analyze sufficiently the potential for and impacts associated with fluid migration associated with unplugged exploratory boreholes, including the adequacy of applicant's plans to mitigate possible borehole-related migration impacts by monitoring wellfields surrounding the boreholes and/or plugging the boreholes.

2. There was insufficient information for the NRC staff to make an informed fluid migration impact assessment given that the applicant's six monitor-well clusters and the 24-hour pump tests at four of these clusters provided insufficient hydrological information to demonstrate satisfactory groundwater control during planned high-yield industrial well operations.¹⁸⁹

All of Joint Intervenors' challenges to the Board's decision on Contention 3 relate to how the Board weighed the evidence. Based upon our review of the record, we find that none of Joint Intervenors' arguments raise a substantial question with respect to the Board's factual findings.

alternate concentration limits was fundamentally correct. *Nw. Coal. for Alts. to Pesticides (NCAP) v. Lyng*. 844 F.2d 588, 594 (9th Cir. 1988).

¹⁸⁹ See FSEIS Order, app. A, at 1; see also Ex. JTI003-R, Larson Direct Testimony, at 49-51, 54-61; Ex. JTI001-R, Abitz Direct Testimony, at 45-49.

a. *Historic Boreholes*

There are nearly 1500 historic exploratory boreholes on the site, most of which have not been properly abandoned (plugged) and over 100 of which have not yet been located.¹⁹⁰ As the Board observed, the FSEIS acknowledges that boreholes that have not been properly abandoned could cause vertical excursions—leaks to overlying or underlying aquifers—and that vertical excursions are more difficult to recover than horizontal excursions.¹⁹¹

On appeal, Joint Intervenors argue that the Board relied too heavily on a license condition requiring the licensee to “attempt to locate and abandon” the boreholes within the perimeter of each wellfield, a provision they argue is essentially unenforceable.¹⁹² Joint Intervenors argue that Strata’s witness acknowledged at hearing that it may not be able to fill all the boreholes, and that the Staff witness stated that the Staff would be “powerless to act” unless it can show that Strata’s violation was “willful.”¹⁹³

As an initial matter, Joint Intervenors’ petition mischaracterizes the hearing testimony. Contrary to Joint Intervenors’ arguments, Strata’s witness stated that Strata might not be able to locate every borehole prior to performing the pre-operational pump test, but that the boreholes “should show up in that pump test.”¹⁹⁴ In addition, our enforcement process does not require

¹⁹⁰ LBP-15-3, 81 NRC at 137 (citing Tr. at 679-80 (Knode)).

¹⁹¹ *Id.* (citing FSEIS, § 4.5.1.2, at 4-37).

¹⁹² Petition at 22. Joint Intervenors refer to License Condition 10.12, which the Board modified to include boreholes outside the perimeter well ring if the wells extend into the first underlying aquifer and are downgradient of the Wellfield. The modified condition requires the licensee to fill boreholes from the perimeter monitoring ring to the closer of the Ross Project license area boundary or the outer boundary of the exempted aquifer. See LBP-15-3, 81 NRC at 143-44. The licensee has requested an amendment to this condition, which is subject to a separate opportunity to request a hearing. See *supra*, note 31.

¹⁹³ Petition at 22.

¹⁹⁴ Tr. at 766 (Griffin); see also Ex. NRC001, Staff Initial Testimony, at 49 (“The Staff determined that after performing hydrologic tests to demonstrate confinement of the ore aquifer and routine

that a violation be “willful” for the Staff to take enforcement action.¹⁹⁵ The NRC has a well-developed enforcement process that considers both willful and non-willful violations by NRC licensees and applicants.¹⁹⁶ A licensee’s failure to correct a violation once identified could result in a notice of violation.¹⁹⁷

We find that the Board appropriately considered Joint Intervenors’ evidence and arguments with respect to boreholes. The Board found that the license condition requiring Strata to “attempt” to locate the boreholes was sufficient because the NRC does not assume that a licensee will ignore its obligations and other license conditions will help to assure Strata’s compliance.¹⁹⁸ In its decision, the Board discussed License Condition 10.13, which requires Strata to conduct additional pumping tests to ensure isolation of the aquifers prior to beginning production of a wellfield; and License Condition 11.5, which requires Strata to immediately cease operations if a vertical excursion is detected.¹⁹⁹ The Board found that these license conditions provide additional incentive for Strata to locate and abandon the boreholes.²⁰⁰ Moreover, License Condition 10.12 requires Strata to “document its efforts” to find and fill the

excursion monitoring, a drill hole not abandoned would be detected and proper corrective actions would be undertaken.”)

¹⁹⁵ At the hearing, both Staff’s witness and Staff’s counsel acknowledged that the witness was not qualified to testify regarding the specifics of the NRC’s enforcement process. See Tr. at 765 (Mr. Saxton) (“I don’t know the exact procedure”); *id.* at 766 (Ms. Monteith) (“I don’t believe that our witnesses are qualified to testify to the enforcement process.”).

¹⁹⁶ See, e.g., “Nuclear Regulatory Commission Enforcement Manual,” Rev. 9, (Dec. 2015) (ML102630150).

¹⁹⁷ See Nuclear Regulatory Commission Enforcement Manual, Rev. 9 (2013) (updated Sept. 8, 2015), § 2.2.3, at 100-01.

¹⁹⁸ LBP-15-3, 81 NRC 140-41 (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 207 (2000)).

¹⁹⁹ LBP-15-3, 81 NRC at 141 (citing Ex. SEI015, License, at 9, 13).

²⁰⁰ *Id.* at 140 (citing Ex. SEI015, License, at 13-14).

boreholes, enabling Staff to assess whether Strata's efforts were in good faith.²⁰¹ Given that the Board considered the contrary evidence and explained its reasoning, the Board's conclusion that these factors, taken together, will ensure the licensee's compliance with the requirement to find and plug historic boreholes was reasonable.

b. Pumping Tests

Next, Joint Intervenors argue that the Board disregarded evidence that chemical analyses of the groundwater following Strata's prelicensing pumping tests indicate that the aquifer is not confined.²⁰² As the Board explained, Strata performed an aquifer test—or pumping test—in each monitoring well cluster to confirm that the ore zone aquifer was confined. According to the prefiled testimony of Strata's witness, Ray Moores, this test involves pumping the well installed in the ore zone aquifer at a constant rate.²⁰³ Pressure transducers installed in the wells in the ore zone, the overlying aquifer, and the underlying aquifer measure and record the water level in each well on one minute intervals.²⁰⁴ According to Mr. Moores, "by evaluating responses, or lack thereof, recorded in the [overlying and underlying aquifer] wells it was also possible to measure the integrity of the confining intervals above and below the [ore zone] aquifer."²⁰⁵ Mr. Moores stated that the transducers were sufficiently sensitive to detect "a leaky aquifer even over short pumping durations."²⁰⁶ He acknowledged that the pumping tests can

²⁰¹ See Ex. SEI015, License, at 9.

²⁰² Petition at 23.

²⁰³ Ex. SEI042, Initial Written Testimony of Ray Moores, at 5 (Aug. 25, 2014) (Moores Testimony); see also LBP-15-3, 81 NRC at 144-46.

²⁰⁴ Ex. SEI042, Moores Testimony at 5. The tests were used to evaluate a variety of ore zone characteristics as well as confirming confinement. *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 6.

only demonstrate confinement over the immediate area, not the entire Ross Project area.²⁰⁷ For this reason, License Condition 10.13 requires additional tests prior to opening each wellfield.²⁰⁸

According to the prefiled testimony of Joint Intervenors' expert Dr. Abitz, changes in the levels of sodium and sulfate in the water from the ore zone aquifer following the tests indicate that water from the ore zone aquifer had been diluted with water from the overlaying aquifer, which has naturally lower levels of these chemicals.²⁰⁹ The Board, however, found that Dr. Abitz's interpretation was "mere speculation," and it concluded that the "better explanation" for the variable levels of these constituents was the natural differences in the minerals within the ore zone.²¹⁰

In challenging the Board's decision, Joint Intervenors claim that the Board's conclusion inherently contradicts its conclusion with respect to Contention 1, wherein the Board found that the site had been adequately characterized through its prelicensing monitoring program.²¹¹ Joint Intervenors argue that "if the results of groundwater tests in the [ore zone] will 'vary considerably' depending on the mineral content where they are located then [Strata] and Staff failed to demonstrate that the limited groundwater data collected meaningfully characterized the baseline."²¹²

We do not see any inherent contradiction between the Board's findings on Contentions 1 and 3. The FSEIS does not state that water quality is consistent throughout each aquifer—the

²⁰⁷ *Id.*

²⁰⁸ See Ex. SEI015, License, at 9.

²⁰⁹ Ex. JTI001-R, Abitz Direct Testimony, at 49-50.

²¹⁰ LBP-15-3, 81 NRC at 147.

²¹¹ Petition at 23.

²¹² *Id.*

groundwater monitoring data in Appendix C shows that the concentrations of the constituents tested vary between the wells.²¹³ At most, the pumping test results show that the picture of the Ross Project site groundwater could be painted with a finer brush—it does not show that more data is necessary to characterize the site and evaluate the environmental impacts of the proposed project. The Board’s factual finding resolved two competing technical opinions, which is a matter where the Commission ordinarily defers to the Board’s judgment.²¹⁴ Based upon our review of the record, we conclude that the Board’s interpretation of the pumping test results is reasonable and that Joint Intervenors have failed to identify a clear factual error on the Board’s part.

c. Selection of Excursion Indicators (Excursion Monitoring Parameters)

Joint Intervenors also argue that the Board erred in declining to require Strata to use uranium as an excursion indicator—one of the characteristics specifically monitored at the perimeter of a wellfield to ensure that mining fluids have not escaped the area of operation.²¹⁵ Specifically, Joint Intervenors argue that the Board recognized that there is “uncertainty” about the movement of uranium in groundwater, and that it was therefore “error for the Board to conclude that the Staff had appropriately found the impacts from excursions will be small based on excursion parameters that will *not include monitoring for uranium.*”²¹⁶ Further, Joint Intervenors argue that the Board erroneously shifted the burden to Joint Intervenors to show

²¹³ See Ex. SEI09B, FSEIS, app. C.

²¹⁴ See, e.g., *Oyster Creek*, CLI-09-7, 69 NRC at 264; *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-28, 62 NRC 721, 723 (2005).

²¹⁵ Petition at 24.

²¹⁶ *Id.*

that uranium should be used, rather than requiring the Staff and Strata to show why it should not.²¹⁷

Joint Intervenors miss the Board's point with respect to the excursion indicators. As the Board noted, the FSEIS explains that most *in situ* uranium recovery facilities will use chloride, conductivity, and total alkalinity because "[t]hese constituents move through the aquifer faster than other water-quality parameters."²¹⁸ In other words, the excursion indicators are selected because they will provide the earliest warning of a problem, not because they are the chemicals of most concern in groundwater protection. The Board agreed with Staff that the "uncertainty" surrounding the behavior of uranium in various chemical environments (that is, whether it will be adsorbed or remain in solution) is a reason not to use uranium as an excursion indicator.²¹⁹ The Board, after weighing the parties' evidence, concluded that

the case for using uranium as an excursion indicator for the Ross Project [was] not compelling, particularly given Joint Intervenors' failure to present any convincing site-specific evidence to counter the Staff[s] and [Strata's] showings that chloride and the other

²¹⁷ *Id.*

²¹⁸ See LBP-15-3, 81 NRC 148 n.73. At least three excursion indicators must be used at each wellfield, and the FSEIS explains why chloride, conductivity, and alkalinity are usually selected:

[C]hloride is selected because it does not interact strongly with the minerals in the ore zone; it is easily measured; and chloride concentrations are significantly increased during ISR operations. Conductivity, which is correlated to total dissolved solids (TDS), is also considered a good excursion indicator because of the high concentrations of dissolved constituents in the lixiviant as compared to the surrounding aquifers. . . . Total alkalinity (carbonate plus bicarbonate plus hydroxide) is used as an indicator in wellfields where sodium bicarbonate or carbon dioxide is used in the lixiviant.

Ex. SEI009A, FSEIS, § 2.1.1.2, at 2-31; see *also* Ex. NRC001, Staff Testimony, at 72-73. Strata's license provides that sulfate will be used as the default excursion indicator in lieu of chloride only in the aquifer underlying the ore zone aquifer, because of the naturally high chloride in that aquifer. See Ex. SEI015, License, at 13 (License Condition 11.4).

²¹⁹ LBP-15-3, 81 NRC at 149-50.

indicators proposed for use by [Strata] and accepted by the Staff would be effective excursion indicators at Ross.²²⁰

Joint Intervenors' petition does not point to any evidence that demonstrates factual error in the Board's finding that "uranium is not as effective a tool for providing a timely alert regarding a lixiviant excursion."²²¹ Although Joint Intervenors claim generally that Drs. Abitz and Larson demonstrated that "uranium may move through the aquifer more quickly than chloride and the other excursion indicator constituents," they cite nothing for that proposition.²²² In fact, Dr. Abitz's testimony, which the Board discussed, argues that uranium would be a good indicator because the "levels of uranium in the lixiviant are generally three to four orders of magnitude greater than true baseline; and increases in chloride, alkalinity and [total dissolved solids] in the aquifer will be less than one or two orders of magnitude."²²³ But, at most, this testimony would show that if uranium is present, it might be easier to detect than the selected excursion indicators—not that it would be detected earlier than the indicators Strata plans to monitor.

In addition, we do not find that the Board improperly shifted the burden of proof. The Board discussed the parties' prefiled and hearing testimony with respect to this issue, and it appropriately considered the various parties' positions—it simply found the Staff's and Strata's positions more persuasive.²²⁴ Joint Intervenors have not provided any basis for us to review the Board's factual findings with respect to the excursion indicators.

²²⁰ *Id.* at 150.

²²¹ *Id.*

²²² Petition at 7, 24.

²²³ LBP-15-3, 81 NRC at 149 n.76 (quoting Ex. JTI001-R, Abitz Direct Testimony, at 43).

²²⁴ *See id.* at 148-50.

d. *Evidence of Excursions at Other Sites*

Finally, Joint Intervenors argue that the Board “discounted” evidence of excursions at other *in situ* uranium recovery sites because of the aquifer exemption.²²⁵ They argue that regardless of the exemption, the aquifer is still part of the “affected environment, impacts to which must be disclosed and considered in the FSEIS.”²²⁶

We do not find that the Board disregarded the evidence. The Board’s conclusion relied on the licensee’s ability to detect and recover excursions (in addition to the fact that the aquifer is exempted from human consumption) to conclude that the potential environmental impacts from operations is small.²²⁷ In addition, the FSEIS discusses the possibility of excursions and describes recovery measures that are imposed by License Condition 11.5.²²⁸ Joint Intervenors have not shown either that the Board erred in its findings of fact or that the FSEIS failed to consider all potential environmental impacts from the proposed facility.

²²⁵ Petition at 24-25 (citing LBP-15-3, 81 NRC at 150-52).

²²⁶ *Id.* at 25.

²²⁷ LBP-15-3, 81 NRC at 151.

²²⁸ See Ex. SEI009A, FSEIS, § 4.5.1.2, at 4-41 to 4-43.

III. CONCLUSION

For the foregoing reasons, we *deny* the petition for review.

IT IS SO ORDERED.

For the Commission

NRC SEAL

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 29th day of June, 2016

Commissioner Baran, Concurring in Part and Dissenting in Part

I concur in part with and dissent in part from the Commission's decision.

I join the majority in the decision except for the subsection that denies review of the Joint Intervenors' claim that the Board erred in resolving Contention 2 by allowing its Initial Decision to supplement the Final Supplemental Environmental Impact Statement (FSEIS) after issuance of the license. I respectfully dissent from this portion of the decision. I would grant review of this claim and order the Staff to cure the deficiency in its environmental analysis.

With respect to Contention 2, Joint Intervenors contend that the Staff's issuance of the license prior to the hearing and Board decision violates NEPA.¹ They argue that if the hearing record and Board decision are necessary to complete or correct the environmental record, then the license must be vacated and remanded to the Staff so that it may consider the complete NEPA analysis prior to deciding whether to issue the license.² In response to the Joint Intervenors' claims regarding the need to suspend the license, the Board found that there was not yet a final agency action because the "agency's NEPA record of decision remains open, and is subject to adjudicatory supplementation relative to matters associated with any pending admitted NEPA contention, at least until the hearing record is closed and the final agency adjudicatory decision is issued."³ To support their claim on appeal, Joint Intervenors point to the Board's agreement with their concern that Staff's environmental analysis was flawed in some respects.⁴ Joint Intervenors argue that the Board simply "declar[ed] these violations cured" by

¹ *Natural Resources Defense Council's & Powder River Basin Resource Council's Petition for Review of Atomic Safety and Licensing Board's January 23, 2015 Initial Decision Denying Environmental Contentions 1 Through 3, and Interlocutory Decisions Denying Environmental Contentions 4/5A and 6/7* (Feb. 17, 2015), at 14-16 (Petition).

² *Id.* at 14-15.

³ LBP-15-3, 81 NRC 65, 122 n.49 (2015).

⁴ Petition at 14 (citing LBP-15-3, 81 NRC at 122, 124-26).

its decision, “violat[ing] the fundamental NEPA precepts that data may not be utilized simply to ‘justify[] decisions already made.’”⁵ I believe that the Joint Intervenors raise a substantial question for our review.

The Staff’s practice in materials cases is to issue a license before the completion of contested hearings on environmental matters. Section 2.1202(a) provides:

During the pendency of any hearing under this subpart, consistent with the NRC staff’s findings in its review of the application or matter which is the subject of the hearing and as authorized by law, the NRC Staff is expected to promptly issue its approval or denial of the application....⁶

It appears that the Staff reads this regulatory provision to require it to issue a license when it completes its safety review and issues the Final Environmental Impact Statement. However, in the adjudicatory context, the Commission has held that its decisions and Licensing Board decisions can supplement⁷ the NEPA analysis to correct deficiencies in such an analysis.⁸ Allowing adjudicatory decisions to supplement the NEPA analysis means that, where there are contested environmental matters, the NEPA process is not complete until any admitted environmental contentions are resolved. Thus, the Staff’s current practice, in some instances, conflicts with a core requirement of NEPA—that the decisionmaker consider all environmental impacts of an action *before* making a decision.⁹

⁵ *Id.* at 15 (emphasis omitted) (quoting 40 C.F.R. § 1502.2(g)).

⁶ 10 C.F.R. § 2.1202(a).

⁷ Here, I am using the term “supplement” as it is used in the Commission case law, not as it is used in 10 C.F.R. § 51.92.

⁸ See, e.g., *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-15-6, 81 NRC 340, 387-88 (2015).

⁹ Petition at 15 (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)).

In my view, this conflict requires the Commission to clarify its supplementation doctrine to account for situations like this one. Several options are available to avoid this conflict. For example, the Staff could wait until the end of the hearing process on contested environmental contentions prior to issuing a license. In this circumstance, a Board or Commission decision could revise the NEPA analysis prior to the issuance of the license, which would ensure that the decisionmaker considers the complete NEPA analysis prior to the completion of the federal action. Alternatively, if the Staff issues a license upon completion of its environmental review but before the completion of any hearing challenging that review, then a subsequent Board or Commission decision finding a flaw in the NEPA analysis or process may require the suspension or vacatur of the license pending Staff action to cure the NEPA deficiency. In these circumstances, the adjudicatory decision or proceedings cannot supplement the NEPA environmental document or Record of Decision after the fact because the licensing action has already been taken in reliance on the NEPA analysis.

Here, the license has already been issued and the Board found aspects of the FSEIS to be deficient. The Board evaluated the Staff's environmental analysis and determined that, only with the additional information considered at the hearing, were the environmental impacts of the proposed licensing action appropriately identified.¹⁰ Because the Board found a deficiency in the NEPA analysis, the agency did not have an adequate environmental analysis at the time it decided whether to issue the license. Thus, the Staff's decision to issue the license was not informed by an adequate NEPA analysis.

¹⁰ See LBP-15-3, 81 NRC at 133.

In federal court, a violation of NEPA, by itself, is not always sufficient to justify suspending or revoking the license.¹¹ However, the Commission has a responsibility to ensure that the Staff complies with NEPA. The agency should not undermine NEPA's core requirement of fully informed decisionmaking by failing to grapple with the problem of pairing a regulation that allows a materials license to be issued prior to adjudicatory hearings with an adjudicatory doctrine that permits the NEPA environmental review to be supplemented by adjudications completed after issuance of the license. We should not endorse a practice that would likely result in future after-the-fact supplementation of the NEPA analysis. Therefore, I would order the Staff to revise the Record of Decision in this case to include all relevant information, including the change to the license condition made by the Board and the additional information the Board found necessary to supplement the FSEIS in response to Contention 2, so that the Director of the Office of Nuclear Materials Safety and Safeguards could make a fully informed decision on whether to reaffirm, modify, condition, or revoke the license. If the Staff did not revise the Record of Decision and make a decision on whether to reaffirm, modify, condition, or revoke the license within 30 days, then I would order the Staff to suspend the license until such steps are taken.

¹¹ See *Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139, 157-58 (2010) (injunction not automatic or default remedy to cure NEPA violation); *Nw. Coal. for Alts. to Pesticides v. Lyng*, 844 F.2d 588, 595 (9th Cir. 1988); *Cty. of Del Norte v. United States*, 732 F.2d 1462, 1467 (9th Cir. 1984); *Cent. Delta Water Agency v. U.S. Fish & Wildlife Serv.*, 653 F. Supp. 2d 1066, 1086-87 (E.D. Cal. 2009); *Muhly v. Espy*, 877 F. Supp. 294, 300 (W.D. Va. 1995).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
Strata Energy, Inc.) Docket No. 40-9091-MLA
(Ross In Situ Recovery Uranium Project))
)
(Materials License Application))
)

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **COMMISSION MEMORANDUM AND ORDER (CLI-16-13)** have been served upon the following persons by Electronic Information Exchange and via electronic mail.

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[Original signed by Herald M. Speiser _____]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 29th day of June, 2016