UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

NO. 07-9505

EASTERN NAVAJO DINE' AGAINST URANIUM MINING, et al.
Petitioners,

v.

U.S. NUCLEAR REGULATORY COMMISSION and
the UNITED STATES OF AMERICA,
Respondents.

Petition for Review of A Final Order of the U.S. Nuclear Regulatory Commission

UNCITED PRELIMINARY RESPONSE BRIEF FOR THE FEDERAL RESPONDENTS

Deferred Appendix Appeal, Oral Argument Requested

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STATEMENT OF RELATED CASES

This case has not been before *this* Court before. However, Petitioners filed four petitions for review of intermediate decisions by the Nuclear Regulatory Commission's Presiding Officer in the underlying proceeding in the District of Columbia Circuit. All four cases were styled:

> *Eastern Navajo Dine' Against Uranium Mining and Southwest Research and Information Center v. NRC,*
>
> No. 99-1190 (D.C. Cir.) (Challenging LBP-99-01, filed May 25, 1999);
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> No. 99-1194 (D.C. Cir.) (Challenging LBP-99-09, filed May 27, 1999);
>
> No. 99-1195 (D.C. Cir.) (Challenging LBP-99-10, filed May 27, 1999); and
>
> No. 99-1196 (D.C. Cir.) (Challenging LBP-99-13, filed May 27, 1999).

The District of Columbia Circuit dismissed all four petitions as premature in an unpublished opinion. *See* 1999 Westlaw 825552 (September 27, 1999).

Petitioners list the following cases as Related Cases because they address issues related to Hydro Resources' Project; however, the issues in these cases are not related to the issues in this case. Those cases are:

> *HRI, Inc. v. EPA*, 198 F.3d 1224 (10th Cir. 2000);
>
> *HRI, Inc. v EPA*, Case No. 07-9506 (10th Cir.) (currently pending).

The Federal Respondents are not aware of any other related cases.

GLOSSARY OF TERMS AND ACRONYMS

TEDE	--	Total Effective Dose Equivalent
DEIS	--	Draft Environmental Impact Statement
FEIS	--	Final Environmental Impact Statement
ISL	--	in situ leach
PO	--	Presiding Officer
LC	--	License Condition
NORM	--	Naturally Occurring Radioactive Material
TENORM	--	Technologically Enhanced Naturally Occurring Radioactive Material

JURISDICTION

Federal Respondents agree that Petitioners have properly invoked this Court's jurisdiction under the Hobbs Act, 28 U.S.C. § 2341, *et seq.*

ISSUES PRESENTED

1. Whether in licensing a uranium recovery project, the Nuclear Regulatory Commission ("NRC") acted reasonably under its regulations when it did not include background radiation from previous unlicensed operations in calculating the total effective dose equivalent ("TEDE") to the public from the licensed activity.

2. Whether NRC adequately identified and characterized radiation impacts under the National Environmental Policy Act ("NEPA").

3. Whether NRC reasonably based the initial surety for decommissioning on an initial estimate of the amount of water needed for groundwater restoration, when the surety can be adjusted later following demonstration projects required by the license.

4. Whether NRC reasonably allowed for changes to litigated restoration cost estimates when any such change would require a license amendment and a new opportunity for hearing.

5. Whether NRC adequately described the potential impacts of incomplete groundwater restoration under NEPA.

6. Whether claims by the *amicus* Navajo Nation not raised by Petitioners' opening brief are properly before this Court.

STATEMENT OF THE CASE

A. *Nature of the Case.*

In 1988, Hydro Resources, Inc. ("HRI") applied for a license to conduct *in situ* leach ("ISL") uranium recovery at its Church Rock site in New Mexico. Church Rock was later subdivided into two parcels, Section 8 and Section 17. HRI amended its application over the next four years, adding a proposed site near Crownpoint, New Mexico, and another site ("Unit 1") west of Crownpoint.

NRC published a notice of opportunity for hearing, and several interested individuals and organizations requested one. An NRC Presiding Officer ("PO") was appointed but delayed a decision on the hearing requests until NRC Staff had completed its technical review. In 1998, after completing review of the application, the Staff issued license SUA-1508, under 10 C.F.R. Part 40, authorizing HRI to conduct ISL recovery at all four sites. The PO then found that petitioners Eastern Navajo Diné Against Uranium Mining Southwest Research and Information Center, Grace Sam, and Marilyn Morris (collectively, "Petitioners") had demonstrated standing and identified sufficient areas of concern to be granted a hearing on HRI's license.

Because HRI planned to begin operations only at Church Rock Section 8, the PO bifurcated the proceeding, limiting "Phase I" to Section 8 issues and issues challenging the overall validity of the license. Based on the Phase I proceedings, the PO found no reason to revoke HRI's license either generally or specifically with respect to Section 8. After Phase II proceedings, a different PO found no reason to revoke HRI's license with respect to Section 17, Crownpoint, and Unit 1. The Commission ultimately upheld the findings approving the license, albeit in some cases after remand of certain issues. HRI has not yet started operations at any of the four sites.

This lawsuit challenges NRC decisions approving various aspects of the HRI license. It specifically challenges the measurement of dose to members of the public from radiological emissions at Section 17, litigated in Phase II, and NRC's approval of the groundwater restoration and financial assurance plan for Section 8, litigated in Phase I. The lawsuit also challenges aspects of NRC's compliance with NEPA regarding these two issues. Finally, the lawsuit argues that adoption of the financial assurance plan for the entire license violates Petitioners' hearing rights.

B. *In-Situ Leach Recovery.*

The Final Environmental Impact Statement ("FEIS")[1] for the HRI project contains a description of the ISL uranium recovery process. *See generally* FEIS at 2-2 – 2-12 (Joint App. at xxx -xxx).[2] The licensee injects a leach solution called "lixiviant" (a mixture of groundwater charged with oxygen and bicarbonate) through wells located in the zone containing uranium oxide ore ("ore zone"). The uranium oxide ore, which occurs as coatings on grains of sand within a sandstone rock host, dissolves when it comes into contact with the lixiviant and forms a uranium carbonate compound.

A licensee will operate production wells located inside a pattern of injection wells. Production wells create a reduced pressure in the ore zone by withdrawing slightly more water from the ground than is injected, causing the "pregnant" lixiviant (*i.e.*, the lixiviant that now contains dissolved uranium carbonate compound) to flow to the production wells where it is pumped to the surface. *See, e.g.*, Figure 2.1, FEIS at 2-3 (Joint App. at xxx).

At the surface, the licensee separates the uranium carbonate compound from the pregnant lixiviant. The now-barren lixiviant is re-charged as necessary with

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[1]NUREG-1508, Final Environmental Impact Statement (February 1997).

[2]"Joint App." refers to the Joint Appendix.

oxygen and bicarbonate, and is re-injected into the ore zone to repeat the cycle. The carbonate compound is processed to precipitate the uranium oxide, which is filtered and dried to produce uranium oxide concentrate, or "yellowcake," which is then shipped to other facilities for enrichment for reactor fuel.

The four HRI sites contain what are commonly known as "roll-front" uranium deposits. These fronts develop when uranium bearing groundwater flowing within an aquifer moves from areas with oxidizing chemical conditions to areas with reducing conditions. NUREG/CR-6733[3] at 2-1 (Joint App. at xxx). Dissolved uranium in the groundwater will precipitate out of solution when the groundwater encounters reducing conditions in the aquifer. This chemical reaction causes the uranium, and other "redox sensitive" elements such as selenium and vanadium, to precipitate out of the water onto the surface of sand grains in the aquifer. *Id.* Over long periods of time enough uranium precipitates out to form a "roll-front deposit, which take on a characteristic crescent shape." *See generally* FEIS at 3-12 – 3-13 (Joint App. at xxx-xxx).

Prior to recovery operations, the groundwater quality in the roll-front deposit will generally contain elevated concentrations of uranium and its decay products

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[3]NUREG/CR-6733, "A Baseline Risk-Informed Performance-Based Approach for In Situ Leach Uranium Extraction Licensees" (Center for Nuclear Waste Analyses) (Sept. 2001).

such as radium and radon, along with other parameters.[4] The elevated concentrations generally will not meet drinking water standards. Ford Affidavit (February 20, 1998)[5] at ¶40 (Joint App. at xxx). *See, e.g.*, NUREG/CR-6870[6] at 19-22 (Joint App. at xxx). However, because these parameters are generally confined to the ore zone, groundwater quality outside the roll-front deposit may be of good quality and not contain significant amounts of uranium and radium. Ford Affidavit (May 11, 1999) at ¶24.[7]

The most serious environmental impact associated with ISL recovery is the potential for groundwater contamination – specifically, elevated levels of trace metals in groundwater. NRC requires licensees to take "reasonable" steps to restore the groundwater to a pre-recovery "baseline" standard. NUREG-1569,

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[4]The FEIS uses the term "parameter" to refer to the various elements in the water. Petitioners use "contaminants" and other documents use "constituents." This brief will use "parameters" unless quoting a document or argument.

[5]Exhibit 9 to "NRC Staff Response to Motion for Stay, Request for Prior Hearing, and Request for Temporary Stay" (February 20, 1998).

[6]NUREG/CR-6870, "Consideration of Geochemical Issues in Groundwater Restoration at Uranium In-Situ Leach Mining Facilities" (U.S. Geological Survey) (January 2007).

[7]Exhibit 1 to "NRC Staff Response to Questions Posed in April 21 Order" (May 11, 1999).

NRC Standard Review Plan ("SRP")[8] at 6-9 (Joint App. at xxx). If the licensee cannot restore the water to pre-recovery baseline, its primary goal, it must restore the water to either EPA primary standards ("drinking water") or secondary standards of pre-operation "class use" which includes agricultural or livestock use. *Id.* If the licensee cannot "technically or economically" restore a particular parameter in the water to a secondary standard, the licensee must demonstrate that leaving the parameter at the higher level will not be a threat to public health and safety. *Id.*

The licensee establishes restoration baseline goals by taking groundwater samples after drilling the wellfield but before initiating the ISL process. FEIS at 4-15 (Joint App. at xxx). *See also* SRP at 2-24 (Joint App. at xxx); Ford Affidavit (January 22, 2001)[9] at ¶3 (Joint App. at xxx). The final design of the wellfield is not known until after the wellfield is constructed. SRP at 2-24. Each well provides the licensee with information used in determining the size and shape of the ore field and the relevant aquifer in order to complete the wellfield. *Id. See*

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[8]Standard Review Plan for In Situ Leach Uranium Extraction License Applications (June 2003).

[9]Exhibit 1 to NRC Staff Response to Intervenor's Financial Assurance Brief (filed January 22, 2001). *See also* Ford Affidavit (March 12, 1999), Exhibit 1 to "NRC Staff's Response to Intervenor's Amended Presentation on Groundwater Issues" (filed March 12, 1999), at ¶32 (Joint App. at xxx).

also Ford Affidavit (January 22, 2001), *supra.* In fact, an ISL operator cannot start drilling a wellfield and establishing baseline goals until after NRC issues a license. *See* 10 C.F.R. § 40.32(e). NRC requires licensees to average groundwater readings from across the ore zone to obtain a representative reading to establish a baseline for groundwater restoration. SRP at 5-30 – 5-41 (Joint App. at xxx-xxx). Licensees are required to take separate readings from "monitoring wells" outside the ore zone so that "excursions" of lixiviant outside the ore zone can be detected and controlled. *Id.*

After uranium recovery in a wellfield ends, groundwater restoration activities begin. Thus, restoration activities at an ISL site may be taking place at portions of the wellfield that have been mined while other wellfields are still engaged in mining activities or are being constructed. FEIS at 2-19 (Joint App. at xxx). Groundwater restoration is accomplished by injecting clean water to flush out the lixiviant and restore the groundwater to primary or secondary goals. *Id.* at 2-20 (Joint App. at xxx); NUREG/CR-6870 at 15 (Joint App. at xxx).

The amount of water used in this process is measured in terms of "pore volumes." SRP at 6-2 – 6-3 (Joint App. at xxx– xxx). A "pore volume" represents the water that fills the void space inside a certain volume of rock or sediment – a measure of the volume of water that must be pumped or processed to restore

groundwater quality. FEIS at 4-29 (Joint App. at xxx). The volume is calculated based on the porosity of the aquifer and estimated vertical and lateral extent of the aquifer. This volume of water is then used to calculate the amount of restoration surety. Ford Affidavit (January 22, 2001) at ¶¶ 5-7 (Joint App. at xxx). The cost of restoration is directly related to the amount of water needed to restore groundwater quality. FEIS at 4-29, *supra.*

NRC requires licensees to post a surety to cover estimated decommissioning costs. 10 C.F.R. Part 40, Appendix A, Criterion 9. NRC reviews the surety annually to check for depletion by inflation, increased costs, or changes in recovery operations, such as a change in the estimated amount of water needed to restore the groundwater. *Id.* These costs include flushing the wellfield and removing buildings and contaminated water. This review also ensures that new financial assurance estimates for sites not yet evaluated are maintained as current. Because the licensee will not know the exact size of the wellfield, or the precise baseline goals for water restoration until the wellfield has been drilled and testing completed, the initial surety amount is, by definition, an estimate. Ford Affidavit (January 22, 2001) at ¶17 (Joint App. at xxx).

C. *Statutory and Regulatory Background.*

1. *NRC's Source Material Regulations.*

NRC does not regulate conventional uranium mining. The Atomic Energy Act ("AEA"), 42 U.S.C. § 2011, *et. seq.*, requires an NRC license to transfer or receive in interstate commerce any "source material" (such as uranium ore) only "after removal from its place of deposit in nature." See CLI-06-14, 63 NRC 510, 512-13 (2006) (Joint App. at xxx-xxx), quoting 42 U.S.C. § 2092. NRC has traditionally viewed section 2092 as precluding jurisdiction over conventional uranium mining, which is governed by other regulatory authorities (normally states). *Id.* NRC regulates ISL recovery because it alters the chemical form of the uranium, the first step of processing. *Id.* Part 40 of NRC's regulations governs processing of uranium ore.

An ISL recovery license applicant must demonstrate that its equipment, facilities, and planned procedures will protect the public health and will not endanger life or property in the surrounding community. 10 C.F.R. § 40.32(c) and (d). In addition, applicants must establish a surety arrangement to assure sufficient funds will be available for decommissioning and decontamination of the site. 10 C.F.R. Part 40 Appendix A, Criterion 9. The amount of the surety arrangement must be based upon Commission-approved cost estimates. *Id.*

2. *NRC's Radiation Protection Regulations.*

NRC regulations in 10 C.F.R. Part 20 establish radiation protection standards for activities conducted under NRC licenses. *See* 10 C.F.R. § 20.1001. Section 20.1301 requires that the "TEDE"[10] to individual members of the public "from the licensed operation" – not including "background radiation" – not exceed 0.1 rem (1 mSv) in a year:

> (a) Each licensee shall conduct operations so that --
>
> (1) The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year, exclusive of the dose contributions from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released under Sec. 35.75, from voluntary participation in medical research programs, and from the licensee's disposal of radioactive material into sanitary sewerage in accordance with Sec. 20.2003. . .

10 C.F.R. § 20.1301.

"Background radiation," excluded from TEDE calculation, is defined in Part 20:

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[10]TEDE is defined as the "sum of the deep-dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures)." 10 C.F.R. § 20.1003.

> Background radiation means radiation from cosmic sources; naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material); and global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include radiation from source, byproduct, or special nuclear materials regulated by the Commission.

10 C.F.R. § 20.1003.

3. *NEPA and NRC's NEPA Regulations.*

NEPA, 42 U.S.C. § 4321 *et seq.*, established a process to consider the environmental consequences of proposed major Federal actions. *Vermont Yankee Nuclear Power v. NRDC*, 435 U.S. 519, 558 (1978). That goal is "realized through . . . procedures that require that agencies take a 'hard look' at environmental consequences." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). NEPA imposes procedural, rather than substantive requirements. So long as the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh environmental costs." *Id.*

NRC regulations in 10 C.F.R. Parts 40 and 51 require an application to include an Environmental Report describing the environmental impacts of the

proposed action and alternatives. *See* 10 C.F.R. § 40.31(f); § 51.45(b); § 51.60(a). NRC then determines whether to publish a draft environmental impact statement ("DEIS") and FEIS, or issue an environmental assessment and finding of no significant impact. 10 C.F.R. §§ 51.20, 51.21.

Intervenors in NRC licensing proceedings may seek adjudicatory hearings on environmental issues. In NRC practice, "[t]he adjudicatory record and Board decision (and, of course, any Commission appellate decisions) become, in effect, part of the FEIS." *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 89 (1998).

4. *NRC's Hearing Regulations.*

NRC regulations permit anyone with an "interest" in a licensing proceeding to obtain a hearing. *See* 10 C.F.R. § 2.1205(a) (2003). This proceeding was governed by the informal hearing procedures of the former 10 C.F.R. Part 2, Subpart L.[11] Under those procedures, petitioners were to submit material "areas of concern" and a PO was appointed to rule on the hearing request and to conduct the hearing via written presentations. *See* 10 C.F.R. §§ 2.1205(e)(3); 2.1207 (2003). The PO appointed special assistants with technical expertise pursuant to 10 C.F.R.

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[11]Subpart L was substantially revised in 2004. This proceeding was conducted under the pre-2004 rules.

§ 2.722 (2003). Rulings of the PO were appealable to the 5-member Commission. *See* 10 C.F.R. § 2.1253 (2003).

STATEMENT OF THE FACTS

A. *Radiological Emissions.*

One of the two Church Rock sites, Section 17, contains an abandoned conventional uranium mine intermittently operated by United Nuclear Corporation ("UNC") from the 1950s through 1982. Surface waste and debris from the UNC mine ("surface spoilage") are a source of radon gas emissions. ISL recovery operations can also cause radiological emissions in the form of radon and uranium particulates.

1. *LBP-06-01 – Initial Decision on Radiological Emissions.*

In Phase II of the adjudication, Petitioners challenged the license, alleging, *inter alia*, the radiological emissions from HRI's ISL mining operation at Section 17, combined with radiation from the UNC mine and its surface spoilage, would result in a Section 17 TEDE to the public exceeding 0.1 rem per year, in violation of 10 C.F.R. § 20.1301(a)(1). LBP-06-01, 63 NRC 41, 46 (2006). (Joint App. at xxx).

The PO ruled that undisputed record evidence showed the UNC mine had been sealed and was not a source of radiological emissions. *Id.* at 54-55. (Joint

App. at xxx). Citing 10 C.F.R. § 20.1301(a)(1), the PO then held that radiation from the surface spoilage should not be included in TEDE for two independent reasons: (1) it was already there and hence not from the "licensed operation," and (2) it emanates from source material not regulated by the Commission and is therefore "background radiation," which is excluded from TEDE. Upon excluding pre-existing radiation from the UNC mine and its surface spoilage, the PO found that TEDE for Section 17 is a small fraction of the regulatory limit. *Id.* at 70. (Joint App. at xxx). Therefore, he found that Petitioners' "emissions" challenge did not provide a basis for invalidating HRI's license for Section 17. *Id.* at 79 (Joint App. at xxx).

2. *CLI-06-14 – Commission Decision on Radiological Emissions.*

Petitioners appealed the PO's determination to the full Commission, which granted review. CLI-06-07, 63 NRC 165 (2006). (Joint App. at xxx). Upon review, the Commission agreed with the regulatory interpretation of the PO, affirming both of his reasons for excluding surface spoilage from TEDE. CLI-06-14, 63 NRC 510, 516-20 (2006) (Joint App. at xxx).

First, the Commission agreed that its regulations tie TEDE calculation to radiation from "licensed operation," and "both grammar and logic dictate that the emissions from already existing mining spoil do not constitute emissions from the

licensed operation." *Id.* at 516. (Joint App. at xxx). Because radiation emanating from this surface spoilage would not stem from HRI's newly-licensed ISL recovery operation, the Commission ruled that it should not be counted when calculating TEDE. *Id.*

The Commission also upheld the PO's second rationale – that radiation from the surface spoilage qualifies as "background radiation" under the definition in 10 C.F.R. § 20.1003 because it is a subset of "naturally occurring radioactive material," or NORM, and thus is explicitly excluded from the TEDE calculation by 10 C.F.R. § 20.1301(a)(1). *Id.* at 518. (Joint App. at xxx). The Commission rejected Petitioners' chief argument that the ordinary meaning of "naturally occurring" is "undisturbed in nature." *Id.* The Commission agreed with Petitioners that the phrase "naturally occurring" includes material "undisturbed in nature," but stated that the phrase can also be understood "to include [material] that has been moved, but neither artificially produced nor processed for its radioactive content." *Id.* at 519. (Joint App. at xxx).

B. *NEPA Review of Radiological Emissions.*

1. *LBP-06-19 – Initial Decision on NEPA Issues.*

In Phase II of the proceeding, Petitioners challenged the FEIS, claiming, *inter alia*, that it misrepresents radiation levels at Section 17 first by failing to

adequately take into account the previous uranium mining operations in the Church Rock area and second by characterizing the residual radiation from the previous mining operations as background radiation. *See* LBP-06-19, 64 NRC 53, 68 (2006). (Joint App. at xxx).

The PO found that "the FEIS expressly acknowledges that this region in general, and Church Rock in particular, has a history of conventional underground uranium mining that adversely affected the environment." *Id.* The PO noted that

> [a]lthough the FEIS recognizes that background radiation – including 'remnant radiation stemming from previous mining' operations (FEIS at 4-73) – is excluded from the TEDE calculation, it nevertheless discusses such radiation, estimating that individuals in Church Rock and Crownpoint receive about 225 mrem/year from background radiation.

Id. at 69. (Joint App. at xxx). Accordingly, the PO found that "[c]ontrary to the Intervenors' assertion . . . the NRC Staff did not ignore the existence of discrete sources of higher background radiation in Church Rock." *Id.* at 70. (Joint App. at xxx). In fact, he stated, "[w]hen the FEIS analyzed the cumulative radiological impact at Section 17, it took into account the background radiation – including the radiological remnants from the prior mining operations . . .." *Id.* at 71 (Joint App. at xxx).

The PO also rejected Petitioners' assertion that the FEIS misrepresented the TEDE by characterizing radiation from the surface spoilage on Section 17 as background radiation. *Id.* at 72. (Joint App. at xxx). This argument, he held, was "foreclosed as a matter of law" by the Commission's decision in CLI-06-14 (discussed above), which addressed this same issue. *Id.*

2. *CLI-06-29 – Commission Decision on NEPA Issues.*

Petitioners sought Commission review of the PO's decision. CLI-06-29, 64 NRC 417, 423 (2006). (Joint App. at xxx). The Commission denied review, observing that "[i]ntervenors understandably . . . focus upon the adverse effects of former mining, but they have not explained why [an] additional, and expected to be negligible, radiation impact . . . would have any public health and safety significance." *Id.* (Joint App. at xxx).

C. *Groundwater Restoration and Surety.*

License Condition ("LC") 10.21A requires HRI to restore groundwater to baseline as a primary goal. *See* SUA-1508, LC-10.21A. (Joint App. at xxx). If groundwater quality levels cannot be returned to average pre-lixiviant injection levels, it requires a secondary goal of returning groundwater quality to maximum concentration limits as specified in U.S. Environmental Protection Agency ("EPA") primary and secondary drinking water regulations. *Id.*

HRI originally estimated that it would take 4 pore volumes of water to bring the groundwater in each of the proposed sites to restoration standards. *See, e.g.,* FEIS at 4-40 (Joint App. at xxx). NRC Staff found that insufficient and estimated that it would take 9 pore volumes of water to restore the groundwater at the proposed project sites. *Id.* Accordingly, the FEIS "calculated groundwater impacts [at each of the proposed sites, including all of Church Rock] assuming the use of 9 pore volumes for groundwater restoration." *Id. See also id.* at 4-58 to 4-60, 4-122. (Joint App. at xxx– xxx, xxx).

The Staff based its 9 pore volume initial estimate primarily on the results of a large-scale pilot project – termed the Section 9 Pilot Project – conducted by the Mobil Oil Company in 1979, approximately 1 mile north of the Unit 1 site. *See* FEIS at 4-33 – 4-34, 4-37 – 4-40 (Joint App. at xxx–xxx, xxx–xxx); Ford Affidavit (May 11, 1999) at ¶¶ 16-25 (Joint App. at xxx–xxx). NRC Staff considered the Mobil data to be the most reliable indicator of the number of pore volumes needed to restore groundwater quality at Section 8. *See* Ford Affidavit (January 22, 2001) at ¶¶9-10 (Joint App. at xxx).[12]

[12]HRI submitted the results of some smaller tests, *e.g.*, FEIS at 4-31 (Joint App. at xxx), but NRC Staff relied primarily on the Mobil Section 9 test. Ford Affidavit (January 22, 2001), *supra.*

NRC Staff recognized that a large-scale, site-specific groundwater restoration demonstration would provide added confidence and emphasized that more site-specific information would be necessary to demonstrate that restoration standards could in fact be achieved at the HRI sites on a large, production-scale level. FEIS at 4-62, 4-113. (Joint App. at xxx, xxx). NRC Staff also believed it prudent to obtain this commercial-scale information before HRI proceeded with operations "beyond Church Rock" (which at the time of the Staff's review included both Sections 8 and 17). *See* Hearing Transcript ("TR") (Nov. 8, 2001) at 304, 307 (Joint App. at xxx, xxx).

Accordingly, LC-10.28 requires HRI to conduct a demonstration, "on a large enough scale, acceptable to the NRC," to determine the number of pore volumes required to restore a production-scale well field, which would include a number of production and injection wells. *Id.* (Joint App. at xxx); *see also* FEIS at 4-15 (Joint App. at xxx). LC-10.28 also bars HRI from injecting lixiviant beyond the Section 8 site – *e.g.*, at Section 17, Unit 1, or Crownpoint – unless NRC has approved the results of the Section 8 groundwater demonstration. The PO held that the "Section 8 production well field demonstration [will] give . . . the absolute best information" to make any necessary adjustments to the number of pore volumes required for

groundwater restoration at the other sites. *See* LBP-04-03, 59 NRC at 95. (Joint App. at xxx).

The license also specifies that surety for the restoration of HRI's initial well fields be based on the initial nine pore volume estimate and maintained at this level until the number of pore volumes required to restore the groundwater quality of a production-scale well field has been established by the restoration demonstration required by LC-10.28. *See* LC-9.5. (Joint App. at xxx). LC-9.5 stresses that if "at any time it is found that well field restoration requires greater pore volumes or higher restoration costs, the value of the surety will be adjusted upwards." *Id.*

Moreover, HRI committed to performing additional "concurrent" restoration demonstrations at each site.[13] FEIS at 4-39 (Joint App. at xxx); Transcript ("TR") at 287-305, 311-12, 319-20 (Joint App. at xxx–xxx, xxx–xxx, xxx-xxx). These smaller demonstrations are in addition to the large project required by LC-10.28. TR at 319-21 (Joint App. at xxx-xxx). While smaller than the restoration project required by LC-10.28, these demonstration projects will provide additional information for NRC to consider when reviewing HRI's surety. *Id.*

1. *LBP-99-13 – Initial Decision on Financial Assurance.*

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[13]This commitment is now a requirement under HRI's License because it is included in HRI's Consolidated Operating Plan, pg. 165-67 (Joint App. at xxx-xxx), expressed with a mandatory "will." *See* LC-9.3 (Joint App. at xxx).

In Phase I of the proceeding, Petitioners challenged the initial nine pore volume estimate as a standard for calculating surety requirements. The PO found that Petitioners "have not provided any analysis or expert testimony that casts doubt on the Staff estimate." LBP-99-13, 49 NRC 233, 236 (1999) (Joint App. at xxx). The PO noted that LC 9.5 allows that the "surety amount may be increased if 'at any time' it is determined that well-field restoration requires greater pore volumes or a higher cost." *Id.* at 236-37. (Joint App. at xxx). The PO acknowledged that HRI had failed to submit a decommissioning financial assurance plan, but interpreted the Commission's regulations not to require such a plan until just prior to project commencement. *Id.* at 236. (Joint App. at xxx).

2. *CLI-00-8 – Commission Decision on Financial Assurance.*

On appeal, the Commission affirmed LBP-99-13 with respect to pore volumes, concurring with the PO that Petitioners' expert had provided "unconvincing" testimony. CLI-00-8, 51 NRC 227, 244 (2000). (Joint App. at xxx). The Commission observed that the attempt of Petitioners' expert, Dr. Sheehan, "to establish the insufficiency of nine pore volumes [was] comprised of nothing more than a brief footnote alluding summarily to the fact that two other ISL projects required significantly more pore volumes." *Id.* Further, the Commission found Dr. Sheehan failed to "indicate why the two other ISL projects

were geologically analogous to the Crownpoint Uranium Project, nor [did] he address the pore volumes needed to restore the aquifers at any other ISL projects." *Id.* at 244-45. (Joint App. at xxx–xxx).

The Commission overturned the PO's holding that HRI was not required to submit a financial assurance plan until just prior to commencing operations. *Id.* at 240-41. (Joint App. at xxx–xxx). The Commission ruled that the financial assurance plan and cost estimates must be submitted prior to licensing. *Id.* Rather than revoking HRI's existing license, the Commission added a license condition prohibiting HRI from using its license until its financial assurance plan was approved by the NRC Staff. *Id.* at 241-42. (Joint App. at xxx).

D. *Phase I Groundwater Restoration.*

1. *LBP-99-30 – Initial Decision on Groundwater Restoration and NEPA.*

Petitioners also challenged the sufficiency of HRI's groundwater restoration plan for Section 8, again alleging that nine pore volumes was insufficient to restore the groundwater. *See* LBP-99-30, 50 NRC 77, 99-106 (1999). (Joint App. at xxx–xxx). Petitioners also alleged that the FEIS inadequately described the impacts of the project. *Id.* at 109 (Joint App. at xxx). The PO found that it was likely that nine pore volumes would restore the water quality as required by the license, *id.* at 103-07 (Joint App. at xxx–xxx), and that Petitioners had failed to state separate

NEPA grounds for their arguments, having relied instead on grounds previously addressed. *Id.* at 109 (Joint App. at xxx). Thus, he dismissed their NEPA claims. *Id.*

The PO based his groundwater findings partly on an affidavit of William H. Ford, an NRC geohydrologist, who stated that "it is extremely likely that . . . the groundwater quality will be restored to acceptable levels," and that "most, if not all, of the groundwater parameters will achieve the secondary groundwater restoration goals stated in HRI License Condition 10.21." *Id.* at 103. (Joint App. at xxx).[14] The PO recognized the uncertainty associated with Mr. Ford's "most, if not all" statement, but observed that only 6 of the 26 parameters at the Mobil demonstration failed to meet groundwater restoration goals. Three (calcium, sodium, and molybdenum) are "not considered hazardous to humans." *Id.* The PO found that arsenic, a hazardous parameter not fully restored at the Mobil site, was much more concentrated at the Mobil site than at Section 8, but nevertheless came very close (0.079 mg/L) to the primary standard of 0.05 mg/L. *Id.* at 104. (Joint App. at xxx). For these reasons, the PO found that arsenic restoration would not present a problem at Section 8. *Id.*

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[14]Mr. Ford's experience and credentials are provided in his February, 1998 Affidavit. *See* Joint App. at xxx-xxx, xxx-xxx.

The two remaining parameters are radium and uranium. *Id.* After weighing the evidence presented, the PO found that failure to meet the primary or secondary groundwater standards for these parameters would not endanger public health and safety at Section 8. *Id.* The PO found no evidence of water with elevated uranium levels away from Section 8, despite the fact that initial measurements indicate the site has uranium levels far above drinking water standards. *Id.* He took this as "persuasive evidence that uranium does not travel readily though the aquifer, even over time scales of thousands of years." *Id.* He made a similar finding for radium contamination, noting that "water in the vicinity of a uranium deposit may be well above safe standards for radium in the vicinity of the mining area, as at Church Rock, but the water from the same aquifer will be safe to drink away from the mine area because the toxic elements are diluted and precipitated." *Id.* at 105. (Joint App. at xxx).

2. *Commission Review of LBP-99-30.*

The Commission declined review of the PO's groundwater decision in LBP-99-30, stating that Petitioners had not identified any "clearly erroneous" factual finding or important legal error. CLI-00-12, 52 NRC 1, 3 (2000). (Joint App. at xxx).

In a separate decision, the Commission rejected Petitioners' NEPA claims arising out of LBP-99-30. CLI-01-04, 53 NRC 31, 45 (2001). (Joint App. at xxx). The Commission found that Petitioners' claim that the FEIS underestimates impacts to groundwater, was contradicted by "specific, technical, health and safety issues resolved in HRI's favor by earlier" PO and Commission decisions. *Id.* (Joint App. at xxx).

3. *LBP-04-3 – Initial Ruling on Restoration Action Plan.*

HRI submitted a Restoration Action Plan, including a financial assurance plan with cost estimates, in response to the Commission's holding in CLI-00-8. *See* LBP-04-3, 59 NRC at 87-88 (Joint App. at xxx-xxx). Petitioners challenged several aspects of HRI's Plan, including estimated groundwater restoration costs. *Id.* at 88. (Joint App. at xxx). The PO approved the Plan, after requiring certain corrections; however, the PO refused to consider Petitioners's challenges to the Staff's pore volume estimate "[b]ecause this issue has been affirmed by the Commission." LBP-04-3, 59 NRC at 92-93. (Joint App. at xxx–xxx).

4. *CLI-04-33 – Commission Decision on Restoration Action Plan.*

On appeal, the Commission affirmed the decision. CLI-04-33, 60 NRC 581 (2004) (Joint App. at xxx). The Commission noted that "the reasonableness of the initial 9 pore volume estimate for groundwater restoration at Section 8 [had been] litigated, indeed litigated twice, in separate decisions on groundwater impacts and financial assurance." 60 NRC at 587. (Joint App. at xxx). The Commission explained that "[i]f the demonstration results confirm the [9 pore volume] estimate, no revision to the pore volume estimate will be necessary." On the other hand, "if HRI is unable to successfully complete the restoration demonstration using up to 9 pore volumes, it can't use that same number [as the estimate] for the remaining sites." *Id.* at 593. (Joint App. at xxx). Further, the Commission found that its proceedings, "though complex," had "not deprived the Intervenors of a meaningful opportunity to challenge the financial assurance plan," because they "had a fair opportunity to challenge the 9 pore volume estimate for Section 8." *Id.* at 593. (Joint App. at xxx).

The Commission stated that "[t]he fact that data from the restoration demonstration project will be reviewed for confirmation of the 9 pore volume estimate," did not "obviate the fact that a meaningful hearing has been provided for the adjudication of the 9 pore volume estimate." *Id.* The Commission also noted

that "HRI is required to update and the NRC is to review the surety annually," and that, if these reviews find "that well field restoration requires greater pore-volumes or higher restoration costs, the value of the surety will be adjusted upwards." *Id.* & n 52. (Joint App. at xxx). Finally, the Commission noted that Petitioners will have hearing rights in any amendment to the License Conditions on surety and groundwater restoration resulting from the review of the restoration demonstration project. *Id.* at n 52.

SUMMARY OF ARGUMENT

1. NRC regulations explicitly provide that TEDE for a particular activity covers radiation dose "from the licensed operation" only. 10 C.F.R. § 20.1301(a)(1). Thus, radiation from waste from previous conventional mining at the HRI site is not included in TEDE for the Section 17 project. While this was not the original regulatory approach, it has been true ever since the NRC revised its radiation protection regulations (Part 20) in 1991. Contrary to Petitioners' arguments, statements in the 1991 rulemaking merely clarified that atmospheric fallout from weapons testing would not be included in TEDE, not that "all sources" of radiation under the licensee's control would be included.

Moreover, the requirement that TEDE include only doses from the "licensed operation" does not render unnecessary the specific exclusions in section 20.1301

for medical and sewer radiation. Those exclusions preserve the integrity of specific regulatory programs; they are necessary to clarify that Part 20's general radiation protection program does not apply to those programs.

Furthermore, the Commission reasonably found that existing radiation from the mine waste was "background radiation" under the Commission's regulations and thus expressly excluded from TEDE under Section 20.1301(a)(1). The mine waste material constitutes a subset of "naturally occurring radioactive material." While it is not in its original location, it has not been "artificially produced or processed" for its radioactive material and thus qualifies as background radiation under NRC's regulations. This Court should defer to the Commission's interpretation of its own regulations.

HRI's license does not adversely impact the public health and safety. HRI's licensed activity does not add a significant risk to the public health and safety. Mine waste will continue to be present at the site, regardless of whether HRI conducts operations, and radiation from HRI's activities will add only an insignificant amount to the current level of radiation.

2. NRC's FEIS acknowledged the presence of waste (surface spoil) from previous mining activities and described its extent and potential impact. Petitioners say that the FEIS overlooks the "cumulative impact" of the new

operations combined with the existing mine waste. But the FEIS – and the PO at an NRC hearing – considered that very issue and found the impact minimal. Petitioners give no sound reason for overturning NRC's record-based finding.

3. NRC reasonably established an initial surety for HRI's license based on an estimate that nine pore volumes of water would be adequate for restoration of groundwater within the ore zone after completion of ISL operations. This estimate was based on the best evidence available, the Mobil Section 9 test, in which 9-10 pore volumes of water restored all but 6 parameters to either primary or secondary restoration goals. Moreover, NRC conditioned HRI's license so that HRI must complete a full-scale restoration project in Section 8 before proceeding to Section 17, Crownpoint, or Unit 1. In addition, HRI has committed to concurrent small-scale demonstration projects at each licensed site. If NRC obtains information from either of these demonstrations that indicate additional pore volumes will be needed, NRC will issue new license conditions amending the license. In addition, NRC reviews the surety annually, and if these reviews show a need for additional funds, NRC will again amend the license. These considerations, and additional information in the record, provide ample support for the PO's (and the Commission's) decision to base HRI's initial surety on the nine pore volume estimate.

4. Under the AEA, amending an NRC license triggers a hearing opportunity. Here, any changes in the surety requirement caused by adjustments in NRC's pore volume estimate will require a license amendment. Thus, Petitioners' hearing rights have not been "subverted" by establishing a surety now, based on NRC's best estimate, subject to amendment later. Petitioners are also free to seek an increase in the surety under NRC's citizens' petition procedure, 10 C.F.R. § 2.206.

5. Contrary to Petitioners' claims, NRC's FEIS adequately described the potential impacts of inadequate groundwater restoration. The FEIS discloses the potential significant adverse effects that might result if groundwater quality is not restored and describes mitigative measures planned by HRI. The PO and the Commission correctly rejected Petitioners' NEPA claims in the administrative hearing because those claims, at bottom, rested on no more than Petitioners' already-rejected AEA claims.

6. The Navajo Nation has filed an *amicus* brief claiming that NRC did not "consult" properly with the Navajo Nation during the licensing process. However, that claim was not raised by Petitioners, either in the administrative hearing or in their brief to this Court; thus, that claim is not properly before this Court. In any event, the record shows that NRC consulted extensively with the Nation during the licensing process. The Navajo Nation's other claims are insubstantial.

STANDARD OF REVIEW

Judicial review rests on the administrative record and the agency's reasoning. Review is governed by the "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" standard of the Administrative Procedure Act. *See* 5 U.S.C. §706(2)(A). This standard is "narrow and a court is not to substitute its judgment for that of the agency." *Motor Vehicle Mfs. Ass'n v. State Farm Mut. Auto. Ins.*, 463 U.S. 29, 43 (1983). A reviewing court must consider whether "the [agency's] decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." *Citizens to Preserve Overton Park, Inc. v. Volpe,* 401 U.S. 402, 416, (1971).

Agency decisions are "entitled to a presumption of regularity." *See Overton Park*, 401 U.S. at 415. A reviewing court must generally be at its most deferential where the challenged decision involves technical or scientific matters within the agency's area of special expertise. *Utah Envtl. Cong. v. Bosworth*, 443 F.3d 732, 740 (10th Cir. 2006). In cases where "specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 378 (1989).

To the extent that the case involves a challenge to the NRC's interpretation of its own regulations, a reviewing court's "ultimate criterion is the administrative interpretation, which becomes of controlling weight unless it is plainly erroneous or inconsistent with the regulation." *Bowles v. Seminole Rock & Sand Co.*, 325 U.S. 410, 414 (1945); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 359 (1989); *Bar MK Ranches v. Yuetter,* 994 F.2d 735, 738 (10th Cir. 1993); *Valley Camp of Utah, Inc. v. Babbitt*, 24 F.3d 1263, 1267 (10th Cir. 1994).

NEPA requires an agency to take a "hard look" at the potential impact of its proposed actions. *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983); *Ecology Ctr., Inc. v. U.S. Forest Serv.*, 451 F.3d 1183, 1189 (10th Cir. 2006). This Court "appl[ies] a rule of reason standard (essentially an abuse of discretion standard) in deciding whether claimed deficiencies in a FEIS are merely flyspecks, or are significant enough to defeat the goals of informed decisionmaking and informed public comment." *Utahns v. United States DOT*, 305 F.3d 1152, 1163 (10th Cir. 2002).

ARGUMENT

I. NRC'S INTERPRETATION OF TEDE FOLLOWS THE PLAIN LANGUAGE OF THE AGENCY REGULATION AND IS CONSISTENT WITH PRIOR AGENCY INTERPRETATION.

A. *The TEDE Calculation is Limited to Dose "From the Licensed Operation."*

1. NRC regulations expressly limit TEDE calculation to dose "from the licensed operation." 10 C.F.R. § 20.1301(a)(1). Section 17 contains radioactive surface spoilage that predates, and is therefore not associated with HRI's "licensed operation." Accordingly, both the PO and the Commission held that this material was properly excluded from HRI's TEDE calculation. Petitioners, however, argue that NRC has historically interpreted the AEA in broader fashion and that section 20.1301(a)(1) has traditionally included the dose arising from any radioactive material "under the licensee's control." Petitioners' Brief ("Pet.Br.") 34-38. This argument is unsupported by any authority and is contradicted by the regulation's plain language.

Petitioners correctly point out that the *original* Part 20, promulgated in 1957 by NRC's predecessor, the Atomic Energy Commission, applied to both licensed and unlicensed sources within the possession of the licensee. *See* 22 Fed. Reg. 548, 549 (Jan. 29, 1957). Petitioners also note that NRC amended Part 20 in 1979,

amending the text of its "purpose" section to indicate that Part 20 applies to licensed and unlicensed activities regardless of who possessed the source. *See* 44 Fed. Reg. 32,349-32,351 (June 6, 1979).

But in 1991 the Commission changed Part 20. The new Part 20 not only lowered the dose limit to 0.1 rem, but also *reduced* the scope of the regulation (redesignated as 10 C.F.R. § 20.1301). *See* 56 Fed. Reg. 23,360, 23,398 (May 21, 1991). The regulation no longer applied to dose from "all known sources and operations, licensed and unlicensed," but only to dose "from the licensed operation."[15] *See* 56 Fed. Reg. at 23,398. This change in the governing regulatory language defeats Petitioners' claim that the TEDE calculation requires including all radiation sources on HRI's property.

2. Petitioners point to a statement in the 1991 Final Rule to argue that the scope of dose included in the TEDE calculation includes dose from any material within the licensee's control. Pet.Br. 37-38. In response to a public comment that the dose limit "should not include fallout from nuclear weapons tests . . . or other sources of radiation not under the control of the licensee," the Commission stated

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[15]This was consistent with the purpose of Part 20, which is to protect "against ionizing radiation resulting from activities conducted under licenses issued by the [NRC]." 10 C.F.R. § 20.1001(a).

that the "new lower dose limit . . . applies only to doses from radiation and radioactive materials under the licensee's control." 56 Fed. Reg. at 23,374.

The Commission explained that this response was supported by the replacement of the 1986 proposed rule's exclusion of "natural background exposure" with the 1991 exclusion of "background radiation," a broader concept that included fallout, which is not under the licensee's control.[16] *Id.* at 23,374-75. This, the Commission stated, "clarifie[d] sources of radiation that can be excluded from evaluations of the *dose from licensed activities*." *Id.* (emphasis added). Thus, the "under the licensee's control" statement, in context, merely clarified – in response to a comment – that fallout would not be included in TEDE; it did not indicate that *all* materials under the licensee's control are to be included in TEDE. Instead, as the PO and the Commission ruled, section 20.1301(a)(1) on its face is limited to dose "from the licensed operation." LBP-06-1, 63 NRC at 66. (Joint App. at xxx); CLI-06-14, 63 NRC at 516. (Joint App. at xxx). In short, the Commission found it was *necessary* for the source to be under the licensee's control to be considered part of TEDE; the Commission did not find that it was *sufficient* – as Petitioners would have it.

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[16]In the 1991 amendment, background radiation was not yet specifically excluded from 10 C.F.R. § 20.1301(a)(1), but it was excluded from the scope of Part 20 by sections 20.1001(b) and 20.1002. *See* 56 Fed. Reg. at 23,391.

B. *NRC's Interpretation of Section 20.1301(a)(1)Does Not Render Its Specific Exclusions Unnecessary.*

Petitioners argue that the Commission's decision that the TEDE calculation under section 20.1301(a)(1) includes only dose "from the licensed operation" purportedly renders "unnecessary" the regulation's specific exclusions, in particular the exclusion of doses from medical administrations and doses from disposal in sanitary sewers. Pet.Br. 33-34.[17]

Petitioners' argument fails to consider that, in addition to the general dose limits established by section 20.1301(a)(1), NRC also maintains special regulatory regimes covering disposal of radioactive materials in sanitary sewers and covering medical administration of radiopharmaceuticals. *See* 10 C.F.R. § 20.2003 (sanitary sewers); 10 C.F.R. § 35.1 *et seq.* (medical administrations). Thus, section 2.1301(a)(1)'s "sewers" and "medical" exclusions are not mere surplusage. They recognize independent regulatory regimes for sewers and medical administrations and "clarify" that those special regimes, not Part 20's general dose limits, cover those particular activities. *See, e.g.,* 62 Fed. Reg. 4,120, 4,129 (1997); 60 Fed.

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[17]Petitioners erroneously assert that the Commission implicitly conceded this argument. Pet.Br. 33. But the Commission merely acknowledged a concern the PO raised. 63 NRC at 516 (Joint App. at xxx). The Commission obviously was not convinced by this argument, as it expressly ruled that TEDE calculation was limited to dose "from the licensed operation." *Id.*

Reg. 48623, 48624 (1995). *See also* 10 C.F.R. § 20.1002. The exclusions make plain that such licensees need not consider the excluded sources of radiation as part of their TEDE calculation, because those sources are independently regulated.

C. *Radiation from Surface Mining Spoil is "Background Radiation."*

Even if section 20.1301(a)(1)'s "licensed operation" clause did not defeat Petitioners' TEDE claim, the "background radiation" clause would – as both the PO and the Commission held. Under 10 C.F.R. § 20.1301(a)(1), background radiation is expressly *excluded* from the TEDE calculation. The PO ruled that the surface spoilage on Section 17 meets the regulatory definition of "background radiation" in 10 C.F.R. § 20.1003, because it is "TENORM," a subset of naturally occurring radiation or "NORM," which is background material not regulated by NRC. LBP-06-1, 63 NRC at 65-69 (Joint App. at xxx-xxx).[18]

1. The PO concluded that the surface spoilage is TENORM because it is "material containing radionuclides that are present naturally in rocks . . . and that have become concentrated and/or exposed to the accessible environment as a result of [conventional] mining operations." *Id.* at 67-68 (Joint App. at xxx-xxx). As the Commission stated in upholding this ruling, "over the years, the NRC and other

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[18]The acronyms stand for Naturally Occurring Radioactive Materials and Technologically Enhanced Naturally Occurring Radioactive Materials.

regulatory authorities have repeatedly considered 'TENORM' as equivalent to 'NORM.'" CLI-06-14, 63 NRC at 518 (Joint App. at xxx). This provides a second, independent basis for excluding the radiation emanating from the surface spoilage from TEDE calculation. *Id.* at 520 (Joint App. at xxx).

2. Petitioners challenge the PO and Commission's ruling on background radiation. They contend that "naturally occurring" must be given its ordinary meaning, which they insist means "undisturbed in nature." Pet.Br. 39-40. They argue that the surface spoilage was disturbed when it was moved from below ground to the surface and cannot be considered "naturally occurring." Thus, they maintain, it cannot be considered NORM. *Id.*

As the Commission held, however, while the phrase "naturally occurring" certainly includes material "undisturbed in nature," it can also be understood "to include [NORM] that has been moved, but neither artificially produced nor processed for its radioactive content." CLI-06-14, 63 NRC at 519 (Joint App. at xxx). This is a situation where "a layman's reading of a regulation, uninformed by context," is not decisive. *Id.* (citation omitted). Instead, "technical terms of art should be interpreted by reference to the trade or industry to which they apply." *Id.* at 518-19 and n.46 (citing cases) (Joint App. at xxx-xxx). As the Commission

noted, this is "particularly true where, as here, that is the relevant regulatory agency's . . . understanding as well as that of the regulated industry." *Id.*

3. Petitioners allege that the Commission has changed its interpretation of the definition of "background radiation" since promulgating section 20.1301(a)(1) in 1991. Specifically, Petitioners argue that "at that time, TENORM was *not* commonly understood to be a subset of [NORM]." Pet.Br. 41 (emphasis in original). To support this argument, Petitioners note that the PO stated that it was not until 1998, seven years after the final rule, that the TENORM concept became common usage. *Id.* at 43.

The PO based this statement on an EPA report to Congress on TENORM. *See* LBP-06-01, 63 NRC at 67 (citing EPA 402-R-00-01, "Evaluation of EPA's Guidelines for [TENORM]," at 3, n.1 (June 2000)) (Joint App. at xxx). This EPA report stated:

> Before 1998, the term used for these materials was "Naturally Occurring Radioactive Materials" ('NORM'). Based on more current industry and regulatory practice, the term "TENORM" now is considered more appropriate.

EPA 402-R-00-01 at 3, n.1.

But the EPA report says only that TENORM did not gain independent significance, or come into common usage, until 1998. Before that time it was

known simply as NORM. Instead of undercutting the Commission's interpretation, Petitioners' cited EPA report actually shows that in 1991 the material known as TENORM was subsumed within the NORM. The fact that the material that later became known as TENORM was, in 1991, still considered NORM, indicates that the Commission did not distinguish between NORM and TENORM in 1991. If the Commission had intended to exclude this material from "background radiation," it presumably would have done so explicitly. The NORM's concept later subdivision, and the coining of the term TENORM, do not alter the original broad meaning of "background radiation."

4. Petitioners argue that the Commission's interpretation is contradicted by the language of NRC's 1986 proposed Part 20 changes, which defined "natural background radiation" as "cosmic and terrestrial sources of naturally occurring radioactive material, including technologically enhanced radioactive material, such as plasterboard and fertilizer . . ." Pet.Br. 41 (citing 51 Fed. Reg. at 1,126). Petitioners argue that the Commission's rejection of the phrase "technologically enhanced radioactive material, such as plasterboard or fertilizer," in the 1991 final rule, indicates that TENORM was not commonly understood to be a subset of NORM. Pet.Br. 41. Petitioners claim that a letter from the Chairman of the

Advisory Committee on Reactor Safeguards regarding the proposed rule supports their argument. *Id.* at 41-42.

But this episode actually supports the Commission's interpretation of "background radiation," not Petitioners'. The cited ACRS letter suggested that TENORM *not* be included in NORM. But the Commission considered and rejected that suggestion, adopting the recommendation of the NRC Staff instead. *See* CLI-06-14, 63 NRC at 518 (Joint App. at xxx) (citing SECY 88-315, Encl. 10, at 3-4 (Nov. 4, 1988)).[19] Thus, the Commission implicitly – if not explicitly – included TENORM within NORM in the 1991 final rule.

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The Commission's interpretation of background radiation to include TENORM is consistent with the plain language of the regulation, its regulatory history, and with the Commission's historical interpretation. This Court should give the Commission's interpretation "controlling weight." *Bowles v. Seminole Rock & Sand Co.*, 325 U.S. at 414; *Valley Camp of Utah, Inc. v. Babbitt*, 24 F.3d at 1267.

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[19]In the memo cited in the Commission's decision, NRC Staff argued that TENORM "should remain excluded" from the dose limits. SECY 88-315, Encl. 10, at 4 (Joint App. at xxx)

D. HRI's License Is Not Inimical To Public Health and Safety.

Petitioners assert, correctly, that NRC may not issue a source material license if such a license "would be inimical to the common defense and security or the health and safety of the public." Pet.Br. 31-32 (citing 42 U.S.C. § 2099). But it does not follow, as Petitioners seemingly would have it, that the Commission violated this principle when it licensed ISL operations, in themselves compliant with NRC regulations, in an area with relatively high pre-existing levels of background radiation from natural causes and mine wastes not subject to NRC regulation. On the contrary, it can be sensible policy to conduct new industrial operations where possible in places already somewhat degraded rather than in fresh new areas.

The situation would be different, of course, if licensing new impacts would somehow "tip the balance," for example, changing the surrounding areas from habitable to uninhabitable. But the Commission has authority – and would exercise it – to prevent such an outcome. *See* 10 C.F.R. § 20.1301(f).

Here, there is no evidence whatsoever that the TEDE of 0.1 rem or less allowed by HRI's license could have such an effect or would in any other way be inimical to public health and safety. On the contrary, the record contains an express finding that the HRI license "will make only a minor, insignificant addition

to overall preexisting radiological impacts" and poses "no significant threat to public health and safety." LBP-06-01, 63 NRC at 60 (Joint App. at xxx); *see also* FEIS at 4-24, 4-125 (Joint App. at xxx, xxx).

II. NRC'S FEIS ADEQUATELY IDENTIFIED AND CHARACTERIZED EMISSION IMPACTS FOR SECTION 17 PURSUANT TO NEPA.

A. *NRC Adequately Considered Cumulative Impacts.*

Petitioners (Pet.Br. 55) claim that the Commission violated NEPA by focusing on the incremental impacts of HRI's operations at Section 17, *i.e.*, the impacts from the licensed operation only, and ignoring the "cumulative impacts," *i.e.*, any synergistic, added impacts of ISL recovery given already-existing impacts from previous conventional mining at the same site. *See generally* 40 C.F.R. § 1508.7. Petitioners' challenge lacks substance. The FEIS and NRC's adjudicatory decisions provide a full analysis satisfying NEPA's "hard look" requirement and adequately informing both decisionmakers and the public of the cumulative impacts of past conventional and future ISL uranium mining at Section 17.

While the FEIS describes the background radiation – including the radiation resulting from previous mining operations – as being excluded from the TEDE calculation, NRC nonetheless took account of the combined effect of past and

future operations. *See* FEIS at 4-73 (Joint App. at xxx) ("Radiological effects during project construction would include natural background plus remnant radiation stemming from previous mining and milling activities"); DEIS at 3-19, 4-13[20] (Joint App. at xxx-xxx, xxx).

The PO explicitly considered – and rejected – Petitioners' cumulative impacts argument, explaining that "the FEIS expressly acknowledges that this region in general, and Church Rock in particular, has a history of conventional underground mining that adversely affected the environment." LBP-06-19, 64 NRC at 68 (Joint App. at xxx). Further, the PO also pointed out that the DEIS addressed "discrete sources of higher background radiation in Church Rock." *Id.* at 70. These sources include "elevated background radiation near the old mine road and State Route 566," which the PO found to be consistent with past use of the road, which was probably contaminated when a previous operator (UNC) hauled ore from its Section 17 mine to its mill. *Id.*

The PO concluded that the local background radiation level, including the radiological remnants from the prior mining operations, as described in the FEIS, is close to 225 mrem/year. *Id.* at 69 (citing FEIS at 4-72 (Joint App. at xxx)), 71. This, he noted, falls below the national average dose of background radiation

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[20]NUREG-1508, Draft Environmental Impact Statement (May 1994).

received by an individual, 300 mrem/year. *Id.* at 70 n.13 (citing LBP-06-1, 63 NRC at 60 n.16). The PO also found that HRI's operations would result in a dose to an individual member of the public "only slightly higher (well below a 1 percent increase)" than this background level. *Id.* at 71.

In sum, as the PO noted, "the FEIS analyzed the cumulative radiological impact at Section 17, it took into account the background radiation – including the radiological remnants from the prior mining operations," which the PO noted was within the typical range of background doses and found that "the increase in cumulative impacts resulting from HRI's operations will be *de minimis*." *Id.* at 71. Thus, as the PO made clear, "consistent with 42 U.S.C. § 4332(2)(C), the FEIS provides a 'detailed statement' about the history and impact of past uranium mining." *Id.* at 72.

In denying review of the PO's decision, the Commission stated: "Intervenors understandably . . . focus upon the adverse effects of former mining, but they have not explained why [an] additional, and expected to be negligible, radiation impact . . . would have any public health and safety significance." CLI-06-29, 64 NRC at 423 (citing CLI-01-4, 53 NRC 31, 69 (2001)) (Joint App. at xxx). As demonstrated above, the NRC explained that HRI's proposed operations when added to the impacts of the historic mining would have a *de minimis* impact.

In sum, it decidedly is *not* the case that NRC has licensed the ISL mining operation at Section 17 without adequate consideration of the cumulative impacts of past mining operations at the site. This record-based finding satisfies NEPA's "hard look" requirement. See *Utahns v. United States DOT*, 305 F.3d at 1163.

B. *The Commission Properly Characterized Radiation from Previous Mining Activity as Background.*

As discussed above, *see* page 38, *supra*, the radiological emissions emanating from the surface spoilage from previous mining activity on Section 17 are properly considered "background radiation" pursuant to the regulatory definition in 10 C.F.R. § 20.1003. Petitioners argue that by characterizing this radiation as background, NRC, contrary to NEPA, "confus[ed] the human-caused environmental impacts . . . with natural conditions that must be accepted as a part of the environment." Pet.Br. 58. This is incorrect.

As we have already shown, NRC's definition of "background radiation" is a technical one. It includes not just naturally-occurring radiation, but also various radiation sources attributable to human activity, such as "global fallout . . . from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl."[21] 10 C.F.R. § 20.1003. Characterizing radiation as background in no

[21]The term "natural background," which appeared in the 1986 proposed amendment to Part 20, was replaced by "background radiation" in the 1991 final

way labels it natural, nor is it an attempt to hide the human contribution to this source of radiation. The FEIS fully complied with NEPA by acknowledging and accounting for the impact of conventional mining at Section 17. NEPA requires no more.

III. NRC ESTABLISHED A REASONABLE INITIAL SURETY FOR GROUNDWATER RESTORATION.

A. NRC Reasonably Established A Surety Based On An Estimate of Nine Pore Volumes of Water For Groundwater Restoration.

As we noted above, NRC Staff estimated that nine pore volumes of water would be adequate for groundwater restoration at Section 8 and based HRI's initial surety requirement on that number.[22] Petitioners challenge the nine pore volume finding, but the initial estimate is just that: an initial estimate based on the best information available at the time.

Under its license, HRI must conduct a "large scale groundwater restoration demonstration" at Section 8 and cannot proceed with ISL operations beyond

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rule. *See* 56 Fed. Reg. at 23,374-75. This change was made because the new definition of "background radiation" included non-natural sources of radiation, such as fallout from weapons testing and past nuclear accidents. *Id.*

[22]The surety encompasses other criteria, but groundwater restoration is the only issue raised in this case.

Section 8 until that demonstration is completed and approved by NRC Staff. *See, e.g.*, CLI-04-33, 60 NRC at 585-86 (Joint App. at xxx.) *See* LC-10.28 (Joint App. at xxx.) If information gleaned from that demonstration shows that additional pore volumes will be needed, NRC will change LC-9.5, which specifies the required number of pore volumes, to reflect the new amount. Ford Affidavit (January 22, 2001) at ¶4 (Joint App. at xxx); CLI-04-33, 60 NRC at 586 (Joint App. at xxx). In addition to the large-scale demonstration, HRI will also conduct smaller "concurrent" demonstrations. *See* page 21, *supra.* These demonstrations will provide additional information for consideration when conducting the annual surety reviews and for determining groundwater restoration goals.

Moreover, because surety is always an estimate, NRC reviews HRI's surety annually. *See* 10 C.F.R. Part 40, Appendix A, Criterion 9. These reviews consider the rate of inflation, initial restoration efforts, and any changes in the operation not already factored into the surety account. If this review indicates additional funds are needed, the NRC will issue a new license condition requiring HRI to deposit additional funds. *See* LC-9.5 (Joint App. at xxx). As the Commission pointed out in CLI-04-03, any change to a License Condition will involve an opportunity for a hearing. *See* page 28, *supra.*

The Staff estimate of nine pore volumes primarily rested on the Mobil Section 9 Pilot Test, which was conducted near Section 8 and in the same aquifer as the Section 8 site. FEIS at 4-37 (Joint App. at xxx). Petitioners challenge to this estimate relied on data from groundwater restoration projects far afield from the HRI site, *i.e.*, an ISL project in Wyoming and a non-ISL project in Ohio. *See* Ford Affidavit (January 22, 2001) at ¶11 (Joint App. at xxx). Given the technical support (the Mobil test) for NRC Staff's current nine pore volume estimate, the planned demonstration projects at the HRI site, and the requirement for an annual review of HRI's surety, the PO and the Commission reasonably upheld NRC Staff's resolution of the surety issue.[23]

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[23]Petitioners litigated the pore volume issue twice; both when litigating the surety, LBP-99-13, 49 NRC 233 (1999) (Joint App. at xxx), aff'd CLI-00-08, 51 NRC 227 (2000) (Joint App. at xxx), and when litigating groundwater issues. LBP-99-30, 50 NRC 77 (1999) (Joint App. at xxx), review denied, CLI-00-12, 52 NRC 1 (2000) (Joint App. at xxx). *See* pp. xx-xx, *supra*.

Petitioners attempted to litigate the issue a third time in Phase II, but the PO ruled that they were bound by the results of Phase I. LBP-05-17, 62 NRC 77, 102-04 (2005) (Joint App. at xxx–xxx). Additionally, the PO held that NRC's estimate was supported by the record evidence. 62 NRC at 104-05 (Joint App. at xxx–xxx). Petitioners do not challenge that decision here.

B. Petitioners' Claims Lack Merit.

Petitioners raise several challenges to HRI's surety, implicitly challenging the nine pore volume estimate. Pet.Br. 45-52. None has merit.

1. Petitioners claim that NRC Staff conceded the "ineffectiveness" of the nine pore volumes, Pet.Br. 45, and chose this estimate simply because "additional pore volumes achieve only marginal improvements." Pet.Br. 46. That's not right. NRC chose 9 pore volumes as a reasonable estimate based on a review of the Mobil test data. *See* Ford Affidavit of (May 11, 1999) at ¶¶5-9 (Joint App. at xxx). NRC Staff explained why particular parameters that were not restored to primary or secondary standards at the Mobil project were unlikely to prove a concern at the Section 8 site. The PO found the Staff's explanation persuasive. LBP-99-30, 50 NRC at 102-06 (Joint App. at xxx–xxx).

Petitioners argue that the AEA will be violated if groundwater is not restored to "pre-mining baseline or drinking water standards." Pet.Br. 46. But Petitioners cite no evidence that a restoration failure, even if it occurred, would be a "threat to public health and safety" as opposed to an undesirable but non-safety-related environmental impact. In any event, NRC established an initial estimate designed to restore groundwater to either baseline or secondary standards. That was the whole point of the litigation before the PO. *See* page 23-25, *supra*.

Water within a wellfield will almost always not be of "drinking water quality" because of the presence of elevated levels of uranium and radium.[24] Thus, restoration to "baseline" does not necessarily mean restoration to "drinking water quality." A licensee cannot reasonably be required to restore the water to better quality than it was initially. And while restoration to pre-mining baseline is the primary goal, a permissible secondary goal is to restore the water compliance with EPA secondary and primary drinking water regulations. Restoration to these standards does not violate the AEA.

Contrary to Petitioners' claim, NRC did not impermissibly base the nine pore volume estimate on HRI's "financial well-being." Pet.Br. 46, n.32. The PO explicitly found that Staff based the estimate on "technically based analytic factors – *not* cost factors." LBP-05-17, 62 NRC at 106, n.19 (Joint App. at xxx) (Emphasis in original). Petitioners cite statements in both an affidavit and testimony by Mr. Ford for their contention, but Mr. Ford's affidavit simply notes that the amount of water designated as necessary for restoration has an impact on

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[24]Preliminary tests indicate the water inside the Section 8 wellfield is not drinking water quality. *See* Ford Affidavit (May 11, 1999) at ¶22 (Joint App. at xxx). Furthermore, in order to conduct ISL operations, an operator must obtain an EPA aquifer exemption stating that the aquifer, or portion thereof, where operations will occur "cannot now, and will not in the future serve as a source of drinking water." *See* 40 CFR § 146.4. HRI's license requires it to obtain such an exemption before commencing operations. *See* LC-9.14 (Joint App. at xxx).

the amount of surety needed. Ford Affidavit (February 20, 1998) at ¶ 42 (Joint App. at xxx); *see, e.g.*, Ford Affidavit (January 22, 2001) at ¶10 (Joint App. at xxx). And Mr. Ford's testimony (TR 305) merely explains why NRC initially had not required HRI to cease all operations while restoring the first wellfield. He explained that, due to the "phased" nature of the process, a licensee normally funds part of its restoration operations at one wellfield from its proceeds from the ongoing operations (conserving its surety deposit). This observation of normal industry practice has no connection with NRC Staff's nine pore volume estimate.

2. There is no basis for Petitioners' claim that NRC violated its "health and safety regulations" by establishing the initial surety at nine pore volumes. Pet.Br. 47-48. As noted above, NRC had ample technical reason to base the initial surety on the nine pore volumes estimate, and compensates for any uncertainty by requiring HRI to update its initial surety annually. Ford Affidavit (January 22, 2001) at ¶3 (Joint App. at xxx).

More fundamentally, restoration will be accomplished on a "phased" basis, as HRI completes operations at each wellfield. HRI cannot wait until the end of the entire project to start restoration on the first part of the project. Indeed, that is an advantage of the ISL process. HRI will have proceeds from subsequent operations to conduct restoration activities on the initial wellfields and will also

have developed a better understanding of the characteristics of this particular wellfield and the amount of water needed for restoration.

Petitioners ignore NRC's required demonstration projects in Section 8, which may trigger refinements and adjustments as restoration proceeds. Petitioners also ignore the annual surety review, which will assess whether HRI has deposited adequate funds to decommission the ISL recovery operations then in progress. If the funds have fallen below the level necessary for full recovery, or circumstances have changed, NRC will issue a new license condition requiring HRI to deposit additional funds immediately, *see* Part 40, Appendix A, Criterion 9, not just at license termination as Petitioners imply. *See* Pet.Br. at 48. That is in keeping with the "phased" nature of the ISL process.

3. Petitioners allege that the PO and the Commission relied on "arbitrary and capricious" rationales in approving HRI's initial surety on flushing the aquifer with nine pore volumes of water. Pet.Br. 49-52. That argument lacks merit.

Petitioners allege that "the [PO] decided that restoration of only six contaminants (twenty-six percent) to 'secondary groundwater goals' in the Mobil Section 9 test was acceptable. 50 NRC at 103 and 106." Pet.Br. 49. This is an evident misunderstanding of the PO's decision. Actually, the PO found that only six of the parameters did *not* meet secondary goals in the Mobil test. *See* 50 NRC

at 103-104 (Joint App. at xxx). The PO then determined that these six parameters would not, in fact, impact the drinking water in the aquifer. *Id.* Contrary to Petitioners' claims, the PO reasonably found that "it is very likely that . . . water quality will be restored to acceptable levels." LBP-99-30, 50 NRC at 106 (Joint App. at xxx).

Petitioners claim that the PO improperly based his decision on the "professional judgment" of NRC's Staff, alleging that the Staff did not use its judgment, but instead simply concluded that no further benefits would be derived from flushing with additional water. Pet.Br. 50. But as we have shown above, the Staff did not base its nine pore volume estimate on diminishing returns, although diminishing returns were noted. Instead the Staff demonstrated that nine pore volumes was a reasonable initial estimate of the amount of water that was likely to restore the groundwater at the Section 8 site to either baseline conditions or secondary standards. LBP-99-30, 50 NRC at 102-06 (Joint App. at xxx-xxx).

Petitioners also allege that the PO "ignored" substantial evidence that there was groundwater within the proposed mine areas that meets drinking water standards. Pet.Br. 50-51. Quite to the contrary, the PO relied on Petitioners' claims of water purity to demonstrate the nature of the redox reaction occurring in the mine field. For example, the PO contrasted on one hand the elevated levels of

uranium (well above EPA drinking water standards) and radium-226 (double EPA drinking water standards) in water samples at the Section 8 site, with petitioners' claims for the purity of the water outside the mining zone on the other hand. LBP-99-30, 50 NRC at 104-05 (Joint App. at xxx-xxx). The PO concluded that if the water inside the mining field was so contaminated, but the water outside the mining field was uncontaminated (as conceded by Petitioners), it was clear that the elements were being precipitated by the redox reaction. *Id.* In other words, the redox reaction is likely to remove uranium and similar minerals from the water if restored water escapes from the wellfield area. *See generally* FEIS at 4-39 (Joint App. at xxx). It is not unusual for the water in the actual mining area to be undrinkable, but be drinkable only a short distance away. Ford Affidavit (May 11, 1999) at ¶24 (Joint App. at xxx).

Finally, Petitioners complain that the Commission improperly allowed HRI to establish a baseline water quality based only on water measurements within the mining zone, instead of averaging in water measurements from outside the mining zone but inside the property line. Pet.Br. 51-52. Petitioners claim that the Commission's discussion of the water quality within Section 8 in CLI-00-12, 52 NRC at 6 (2000) (Joint App. at xxx) "contradicts" the PO's decision in LBP-05-17, 62 NRC at 97 (Joint App. at xxx). *See* Pet.Br. 52.

But there is no contradiction. The normal practice of determining the baseline conditions is to average a number of samples from wells within the ore zone. *See* page 8, *supra*. The Phase 2 PO's ruling in LBP-05-17 says exactly that. CLI-00-12 denied a motion to reopen Phase I, addressing a challenge to the secondary restoration goal. There is no connection between the two decisions.

* * * * *

In essence, Petitioners disagree with NRC's expert factual assessment that nine pore volumes, and its associated surety, is the best available current estimate for groundwater restoration at the HRI site. The PO and the Commission cited ample record evidence for their findings. "[A]n agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." *Marsh*, 490 U.S. at 378. *Accord*: *Citizens for Alternatives to Radioactive Dumping v. DOE*, 485 F.3d 1091, 1099 (10th Cir. 2007). It is not this Court's function to second-guess agency resolution of a fact question, particularly where (as here) "resolution of that question depends on engineering and scientific considerations" and there is "substantial basis" for the agency finding. *FPC v. Florida Power & Light Co.*, 404 U.S. 453, 463 (1972). *See also Utah Envtl. Congress v. Bosworth*, 443 F.3d at 740.

IV. NRC PRESERVED PETITIONERS' HEARING RIGHTS.

Petitioners claim that NRC improperly "deferred" the final decision on whether nine pore volumes is adequate for groundwater restoration surety to a post-hearing resolution, which has "subverted" the AEA's hearing requirement. Pet.Br. 53-55. Essentially, Petitioners allege that if the "demonstration" required by HRI's license condition indicates that additional water will be needed, it will have been deprived of its hearing rights. But Petitioners litigated the issue of groundwater restoration *twice*. In LBP-99-13, the PO found the evidence supported the Staff's finding that an initial surety based on nine pore volumes was reasonable. In LBP-99-30, the PO again found the evidence supported the Staff's initial estimate that nine pore volumes was adequate to restore groundwater to either primary or secondary levels. In short, Petitioners have already had their hearing.

Petitioners ignore an explicit Commission decision in this proceeding that any change in the license conditions after review of the demonstration project will result in an amendment to the HRI license. *See* CLI-04-33, 60 NRC at 593-94, n.52 (Joint App. at xxx-xxx). By law, NRC license amendments trigger interested persons' right to seek an agency hearing. *See id.*; 42 U.S.C. §2239(a). Thus, if NRC later determines that more (or fewer) pore volumes of water are required,

NRC will amend the license by issuing a new license condition. Thus hearing rights will attach to proposed changes in the pore volume requirement. If, based on the demonstration results or other factors, NRC determines that no change is needed, Petitioners may file a petition under 10 C.F.R. § 2.206 seeking to amend the license and increase the surety.

V. NRC'S FEIS ADEQUATELY ADDRESSED POSSIBLE INCOMPLETE GROUNDWATER RESTORATION.

Petitioners argue that NRC violated NEPA because the FEIS failed to address the environmental impacts of incomplete groundwater restoration. Pet.Br. 62-63. Petitioners also allege that the PO improperly dismissed their NEPA claims solely because its AEA arguments were "invalid." Pet.Br. 63. Both claims lack merit.

First, Petitioners never raised the "incomplete groundwater restoration" claim on appeal to the Commission – which means they cannot raise it in this Court. *See Silverton Snowmobile Club v. U.S. Forrest Service*, 433 F.3d 772, 783 (10th Cir. 2006.) Second, contrary to Petitioners' claims, the FEIS explicitly addresses the potential impacts of inadequate groundwater restoration. *See* FEIS at

4-113 (Joint App. at xxx). As the Commission pointed out when reviewing LBP-99-30,

> the FEIS fully discloses . . . that "[s]ignificant adverse effects to groundwater quality would result if an excursion (either horizontal or vertical) occurs or if, after routine mining, water quality is not restored." FEIS at 4-113.

CLI-01-04, 53 NRC at 65 (Joint App. at xxx). The FEIS notes that "degradation of water quality in the ore-bearing aquifer" is "[p]erhaps the most significant potential groundwater impact" from ISL mining. FEIS at 4-15 (Joint App. at xxx). Groundwater impacts from ISL activities are "related to the identification, control, and clean-up of excursions," which are "unanticipated releases of mining solutions that move beyond the 'well field area.'" *Id.* The FEIS contains a detailed discussion of the potential for excursions at both Section 8 and Section 17. FEIS at 4-54 to 4-58 (Joint App. at xxx-xxx).

And as the Commission further noted, the FEIS acknowledged that (1) "[s]uccessful restoration of a production-scale ISL well-field has not previously occurred,"[25] and (2) "site specific tests conducted by HRI have not demonstrated that the proposed restoration standards can be achieved at a production rate."

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[25]Subsequent to preparation of the FEIS, groundwater restoration at the Bison Basin Mine in Wyoming has been approved by NRC and the State. *See* Ford Affidavit (March 12, 1999) at ¶16 (Joint App. at xxx).

CLI-01-04, 53 NRC at 65 (Joint App. at xxx). The Commission pointed to mitigative measures discussed in the FEIS and concluded that they reduced the likelihood and severity of any adverse impacts. *Id.* *See also* FEIS at 4-60 – 4-63 (Joint App. at xxx-xxx); 4-121 – 4-122 (Joint App. at xxx-xxx); 4-127 (Joint App. at xxx). This review is forthright, complete, and fully satisfies NEPA's "hard look" requirement.

Second, Petitioners mischaracterize the PO decision they challenge. In their presentation on groundwater issues under the AEA, Petitioners claimed that the FEIS did not adequately address the impacts on groundwater. *See* Amended Groundwater Brief (January 18, 1999) at 65-68 (Joint App. at xxx–xxx). They then raised similar issues in their presentation on NEPA issues. *See* Brief on NEPA Issues (February 19, 1999) at 46-50 (Joint App. at xxx–xxx). The PO held that Petitioners' NEPA arguments in their groundwater brief were simply a "recapitulation of themes" and "do not state separate grounds for this argument." *See* LBP-99-30, 50 NRC at 109 (Joint App. at xxx). Essentially, the PO held that Petitioners based their NEPA claims on already-rejected AEA claims, not on separate, NEPA-only claims. Having resolved those issues once, he reasonably rejected them the second time later in the same opinion. LBP-99-30, 50 NRC at 113 (Joint App. at xxx).

The Commission took review of the NEPA issues in LBP-99-30, *see* CLI-01-04, 53 NRC 31, 44 (2001) (Joint App. at xxx), and affirmed the PO. After noting Petitioners' claim that the FEIS underestimated the particular impacts of the project, the Commission found that in actuality these "NEPA claims . . . consist essentially of fact-specific, technical arguments, already rejected by the Presiding Officer and, in many cases, also by the Commission." 53 NRC at 45 (Joint App. at xxx). "A specific example is [Petitioners'] claim that the FEIS underestimates . . . the impacts to groundwater. These claims are rooted directly in specific, technical, health, and safety issues resolved . . . by earlier [PO] decisions." *Id.*

Simply put, when the PO – and the Commission – rejected Petitioners' technical, AEA-based arguments on groundwater impacts, there were no independent NEPA arguments left to address. It is true, as Petitioners argue (Pet.Br. 65) that NEPA and the AEA are "independent statutes," but that hardly means that NRC was required to repeat, under the rubric of NEPA, the very same analyses that it had done already under the AEA.

VI. THE NAVAJO NATION'S CLAIMS ARE EITHER UNSUPPORTED OR ARE NOT PROPERLY BEFORE THIS COURT.

The Navajo Nation's ("the Nation") *amicus* brief attempts to raise one issue – NRC consultation with the Nation – not raised in Petitioners' opening brief. But this Court limits *amici* to issues raised by the parties. *Wyoming Farm Bureau Federation v. Babbitt* 199 F.3d 1224, 1230, n.2 (10th Cir. 2000).[26] We can find no record that this issue was raised by any party to the NRC hearing or by any party to this lawsuit.

The Navajo Nation's other claims are not well-founded. First, the *amicus* brief claims that the Navajo Nation continues to suffer from previous mining activities. *See* Nation Brief ("NB") at 5-9. But NRC did not license those previous mining activities and the Nation's brief makes no claim that any proposed action reviewed here contributed to that alleged injury. Second, the Nation states that in its

> considered opinion, . . . but for the determination of the NRC that the non-naturally-occurring radioactive

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[26]Petitioners filed a "Statement," dated July 26, 2007, claiming to "adopt" the Nation's arguments. But no authority allows a party to "adopt" arguments filed by an *amicus* after both parties have filed their briefs. The prohibition on an *amicus* making new arguments would be worthless if a party could simply file a post hoc "we adopt everything the *amicus* says" statement after briefing is over. And such an approach would evade FRAP 32's word-count limit.

> materials . . . from previous mining operations can be considered "background emissions [sic]," . . . United Nuclear Corporation and HRI would have been compelled to take, at their cost, corrective measures.

NB at 9-10. But the Nation cites no authority for that statement. The Nation overlooks NRC's lack of jurisdiction over conventional mining activities and the resulting mine debris. The Nation seemingly urges NRC to act outside its own statutory jurisdiction to force HRI to remove mining waste that it did not create.

The Nation also alleges that excluding existing radiation from mine waste from TEDE allows NRC to issue a license without taking into account the effect the project will have on the public. NB at 11. But the impacts from those mine wastes will be present *regardless* of whether NRC issues the license. Denial of the license will not reduce the impacts to the public; instead, denial of the license will only eliminate the impacts to the public from the licensed activity. But, as the PO conclusively demonstrated, the licensed activity will have little, if any, impact on the public. *See generally*, LBP-06-01, 63 NRC at 69-71 (Joint App. at xxx-xxx).

The Nation also claims that the decision on surety "amounts to an experiment on Navajo people" and that NRC "allowed HRI to base its surety requirement on groundwater restoration models that failed." NB at 12. But NRC based its decision on the Mobil test, run in the same aquifer and in a nearby

location. As we noted above, the PO found that it provided a technical basis for the initial estimate for the first wellfield in Section 8. And as we also have noted several times, HRI must provide a large-scale demonstration project with the first wellfield in Section 8 and a smaller demonstration project in each Section. There is no "experiment" with the Navajo people or the Navajo Nation.

Finally, the Nation argues that NRC failed to consult appropriately with the Nation in issuing HRI's license. NB at 13-16. As we noted above, Petitioners did not raise this argument and we have no record that it was raised below. The Nation was free to participate in the NRC proceedings either as a full party, as did Petitioners, or as a governmental entity under 10 C.F.R. § 2.315(c), which gives governmental entities significant participation rights, including the right to present evidence and appeal decisions to the Commission. The Nation did neither.

In any event, contrary to the Nation's claim that "[t]here has been no consultation at all[,]" NB at 16, the record makes plain that NRC consulted with the Nation, as discussed in detail in LBP-05-26, 62 NRC 442, 451-54, 463-70 (2005) (Joint App. at xxx– xxx, xxx– xxx), and FEIS, Appendix C (Joint App. at xxx). While the primary topic of consultation was compliance with the National Historic Preservation Act, 16 U.S.C. § 470, *et seq.*, nothing prevented the Nation from raising other issues related to the HRI license.

CONCLUSION

For the foregoing reasons, the petition for review should be denied.

Respectfully submitted,

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September 20, 2007

STATEMENT REGARDING ORAL ARGUMENT

The Federal Respondents believe that the issues in this case are sufficiently complex that oral argument would be beneficial to the Court in its consideration of these issues. Therefore, the Federal Respondents respectfully request that this Court schedule oral argument in this case.

CERTIFICATE OF COMPLIANCE

Counsel for Respondent hereby certifies that the foregoing Brief for the Federal Respondents satisfies the requirements of Rule 32(a)(7) of the federal Rules of Appellate Procedure. The Brief was prepared in proportional Times New Roman font of 14 characters per inch, and, excluding the parts of the brief exempted by Rule 32(a)(7)(iii) of the Federal Rules of Appellate Procedure, contains 13,987 words, according to Corel Wordperfect X3.

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CERTIFICATE OF SERVICE

I declare under penalty of perjury that I filed the "Uncited Preliminary Brief for the Federal Respondents" in Case No. 07-95056 by causing one (1) copy to be sent to this Court by overnight delivery service, and one (1) copy of the brief on the following counsel by overnight delivery service:

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