UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
HYDRO RESOURCES, INC.	)	Docket No. 40-8968-ML
P.O. Box 15910	)	Re: Leach Mining and Milling License
Rio Rancho, New Mexico 87174	)	
	)	

NRC STAFF'S RESPONSE BRIEF ON FINANCIAL SURETY ISSUES

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I. INTRODUCTION

In this Subpart L proceeding, intervenors Eastern Navajo Diné Against Uranium Mining (ENDAUM) and Southwest Research and Information Center (SRIC) (collectively, Intervenors) have raised, *inter alia,* various financial concerns to support their position that the 10 C.F.R. Part 40 license authorizing Hydro Resources, Inc. (HRI) to conduct *in situ* leach (ISL) uranium mining (based on satisfying certain license conditions) should be revoked.[1] In LBP-99-13, 49 NRC 233, 237 (1999), the Presiding Officer denied Intervenors' request that the HRI license be revoked for failure to satisfy applicable requirements regarding financial assurance for decommissioning concerns.

On March 30, 1999, ENDAUM and SRIC jointly filed "Intervenors' Petition for Review of Presiding Officer's Partial Initial Decision on LBP-99-13, Financial Assurance for Decommissioning" (Review Petition). After reviewing the positions of the parties, the

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[1] *See* Eastern Navajo Diné Against Uranium Mining's and Southwest Research and Information Center's Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Financial Assurance for Decommissioning, dated January 11, 1999, at 1-2.

Commission concluded that [f]urther proceedings are necessary to clarify whether and when HRI submitted a [financial assurance] plan in this case and the extent to which Intervenors may contest that plan" and directed the parties to file briefs (of 30 pages or less)

> addressing the arguments raised in Intervenor's petition for review of LBP-99-13. In doing so, the parties should also address the following questions:
>
> (1) Was financial assurance information submitted by HRI adequate to meet the requirements for licensing? [and]
>
> (2) If HRI is correct in its assertion that an approved financial assurance plan is not a prerequisite to the issuance of a license, what is the meaning of the staff's assertion in its ["R]esponse To Petition for Review of LBP 99-13," at 4-5] that "the issue is thus not yet ripe for . . . [the Presiding Officer's] . . . review?"

CLI-99-22, 51 NRC ___, slip op. at 22-24 (July 23, 1999). Intervenors timely filed their brief on August 13, 1999, and corrected that filing on August 23, 1999.[2] For the reasons discussed below, the Staff submits that issuance of the HRI license, as conditioned, was consistent with the applicable requirements of Criterion 9 of 10 C.F.R. Part 40, Appendix A, and the regulatory flexibility envisioned by the performance based licensing (PBL) approach endorsed by the Commission in CLI-99-22, slip op. at 19-20.

II. BACKGROUND

In CLI-99-22, the Commission considered Intervenors' position that the surety requirements in 10 C.F.R. Part 40, Appendix A, must be met before the NRC issues a license. CLI-99-22, slip op. at 22-25. The Commission, noting that (1) HRI is required by

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[2] Brief of Intervenors Eastern Navajo Dine Against Uranium Mining and Southwest Research and Information Center on Review of Partial Initial Decision LBP-99-13, Financial Assurance for Decommissioning, dated August 13, 1999 (August 13 Brief); Notice of Errata in Intervenors' Brief on Review of Partial Initial Decision LBP-99-13, dated August 23, 1999.

License Condition 9.5 to submit an NRC-approved surety arrangement before it can operate under its license, (2) that HRI will not likely begin operations in the near future, and (3) that HRI had not submitted final surety arrangements, questioned whether a surety arrangement (which is to be based on a financial assurance plan's cost estimates) "is due before licensing or only before operation."[3] The Commission further stated:

> Similarly, Criterion 9 also requires that the amount of funds to be ensured be "based on Commission-approved cost estimates in a Commission-approved plan." Pursuant to Criterion 9, this plan must be submitted by the applicant along with its environmental report, prior to licensing. Criterion 9 does not specify what constitutes "a plan" at early stages of licensing or <u>when</u> the licensee must receive NRC approval for its plan.

Slip op. at 22 (footnote omitted) (emphasis in original). Finding that Criterion 9 does not require the creation of a surety arrangement until operations begin, but that the NRC's rules on financial assurance plans are unclear and the positions of the parties confusing, the Commission concluded that "[f]urther proceedings are necessary to clarify whether and when HRI submitted a [financial assurance] plan in this case and the extent to which Intervenors may contest that plan." *Id.* at 22-23. The Commission directed the parties to submit brief's addressing the arguments raised in the Petition for Review and two questions posed by the Commission. CLI-99-22, slip op. at 24.

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[3] Criterion 9 is one of two provisions in 10 C.F.R. Part 40, Appendix A, "Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content" (Appendix A) that set forth financial criteria. Criterion 10, the other provision, applies only to costs associated with the long-term storage of tailings, a subject not relevant to this licensing proceeding. *See* "NRC Staff's Response to Intervenor Presentations on Liquid Waste Disposal Issues," dated December 16, 1998, at pages 6-20. *See also* LBP-99-13, 49 NRC 233, 236 (1999) (Criterion 10 not applicable to HRI).

In section A, *infra*, the Staff discusses the provisions contained in Criterion 9 and HRI License Condition 9.5 regarding financial assurance plans, the applicable statutory and regulatory requirements on which these provisions are based, and the relevant rulings made by the Commission in CLI-99-22. In Section B, *infra*, the Staff responds to the Commission's questions set forth above. In Section C, *infra*, the Staff addresses arguments made by ENDAUM and SRIC in the August 13 Brief.

III. DISCUSSION

As shown below, neither the language used in Criterion 9 nor the history of the criterion support a finding that Staff approval of HRI's financial assurance plan was required prior to issuance of HRI's license. In addition, the two-step financial assurance process (which is not yet complete) established by HRI License Condition 9.5 does not specify when a financial assurance plan must be submitted. HRI License Condition 9.5, however, adequately protects public health and safety by prohibiting HRI from performing any ISL mining in the absence of a NRC-approved surety arrangement. This prohibition ensures that environmental impacts that may be produced by the injection of lixiviant will not occur without sufficient funds being available to cover later cleanup costs.

As discussed more fully in Section A.3, *infra*, the Staff had substantial discretion in deciding how to implement the applicable provisions of Criterion 9 when formulating HRI License Condition 9.5, pursuant to 10 C.F.R. § 40.32 consistent with the PBL approach to licensing undertaken with respect to HRI and the relatively low hazards association with decommissioning of an ISL mining project. Accordingly, the Commission should affirm LBP-99-13, 49 NRC 233 (1999). As discussed more fully in Section B.3, *infra*, ENDAUM

and SRIC may challenge the adequacy of financial assurance provisions in the license as the matter has been found germane to this proceeding, *see* LBP-98-9, 47 NRC 261 (1998), but any challenge to the adequacy of cost estimates for an approved surety arrangement should await the existence of an NRC-approved surety plan.

A. Applicable Financial Surety Requirements

1. Criterion 9 of Appendix A

Criterion 9 contains financial provisions intended to ensure that adequate funds will be available for decommissioning purposes even if the NRC licensee becomes insolvent, and authorizes use of surety mechanisms such as surety bonds, certificates of deposits, and irrevocable letters or lines of credit.[4] While Criterion 9 states that the amount of surety "must be based on Commission-approved cost estimates in a Commission-approved plan" for decommissioning and reclamation of tailings and/or wastes that is to be submitted by a "licensee . . . in conjunction with an environmental report that addresses the expected environmental impacts of its milling operation," the provision does not specify when the plan must be submitted, but only when an approved plan must be in place. *See* Criterion 9. Criterion 9 appears to be better suited to a mill seeking to modify or renew its operations rather than a ISL mining license applicant. In short, Criterion 9 should not be read to require the submission and approval of a financial assurance plan *before* an ISL license is issued.

With respect to the need for a financial assurance plan, Criterion 9 states, in pertinent part, as follows:

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[4] Criterion 9 was published in final form in October 1980, as part of the original Appendix A to 10 C.F.R. Part 40. *See* 45 Fed. Reg. 65521, at 65535 (October 3, 1980).

> Financial surety arrangements [*e.g.*, surety bonds] must be established by each mill operator prior to the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the mill and site and for the reclamation of any tailings or waste disposal areas. The amount of funds to be ensured by such surety arrangements must be based on Commission-approved cost estimates in a Commission-approved plan for (1) decontamination and decommissioning of mill buildings and the milling site to levels which allow unrestricted use of these areas upon decommissioning, and (2) the reclamation of tailings and/or waste areas in accordance with technical criteria delineated in Section I of this Appendix. *The licensee shall submit this plan in conjunction with an environmental report that addresses the expected environmental impacts of the milling operation, decommissioning and tailings reclamation, and evaluates alternatives for mitigating these impacts. . . .* In establishing specific surety arrangements, the licensee's cost estimates must take into account total costs that would be incurred if an independent contractor were hired to perform the decommissioning and reclamation work.

Appendix A, Criterion 9 (emphasis added).

The italicized wording above is reasonably applicable only to those uranium mill operators who (1) hold NRC licenses, and (2) had tailings piles previously created by their uranium milling operations or whose continued operations are expected to create additional waste and/or tailings.[5] The use of the words "[t]he licensee" in Criterion 9 clearly excludes license applicants from its scope, as Appendix A otherwise uses the phrase "Licensees or applicants" when referring to both groups. *See, e.g.*, Appendix A's Introduction. Similarly, the financial surety requirements found in 10 C.F.R. § 40.36 (which the Commission found inapplicable to HRI)[6] clearly specify the provisions which apply to license applicants. *See*

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[5] Under 10 C.F.R. § 51.60, an environmental reports is to be submitted by "[e]ach applicant for a license or other form of permission, or an amendment or renewal of a license or other form of permission issued pursuant to," *inter alia,* 10 C.F.R. Part 40.

[6] *See* CLI-99-22, slip op. at 22.

10 C.F.R. § 40.36 (a)-(b). If the Commission had intended to require all license applicants subject to Criterion 9's provisions to obtain approval of their financial assurance plans as a prerequisite for obtaining a license, the Commission would not have used the term "The licensee."[7]

Further, uranium mill tailings are the only waste products specified in the italicized portion of the Criterion 9 excerpt as needing to be addressed in a environmental report. As discussed below, and as previously emphasized by the Staff in this proceeding, ISL mining does not produce any mill tailings.[8]

Accordingly, the wording of Criterion 9 does not support a finding that an approved financial assurance plan was a prerequisite to the issuance of HRI's 10 C.F.R. Part 40 license. *See* CLI-99-22, slip op. at 22.

This conclusion is further supported by a review of related regulatory actions taken contemporaneously with Criterion 9's promulgation. In the 19 years since Criterion 9 was promulgated, with the exception of minor editorial changes (in several places the word

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[7] Intervenors' conclusion on this point that it "is clear that the requirement applies to applicants as well as licensees" is unfounded. Intervenors fail to address the wording of the Appendix A Introduction, and the wording of 10 C.F.R. § 40.36 (a)-(b) referenced above. Intervenors state only that the use of the term "licensee" in this context "is not significant as existing licensees at the time Appendix A was promulgated were also required to comply [with] its requirements." August 13 Brief, at n.4, *citing* 45 Fed. Reg. 65521, 65530 (October 3, 1980).

[8] *See, e.g.*, NRC Staff's Response To Intervenor Presentations On Liquid Waste Disposal Issues, dated December 16, 1998, at 4. Intervenors selection of a quotation from the 1980 Statement of Considerations published when Appendix A was promulgated only emphasizes the fact that the focus of Criterion 9 is on the environmental dangers posed by mill tailings. *See* August 13 Brief, at 14.

"shall" in the original Criterion 9 was replaced by the word "must"), the language of Criterion 9 has not changed. In addition, the historical context in which Criterion 9 was promulgated, as discussed below, is important in determining its proper meaning, and demonstrates that the Criterion 9 requirement for a "Commission-approved plan" to be submitted "in conjunction with an environmental report," was directed toward licensees which had tailings piles previously created by their uranium milling operations.

Potential harm arising from unregulated uranium mill tailing piles at active and inactive uranium mills led to passage of the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C. §§ 7901 *et seq.* (UMTRCA).[9] The enactment of UMTRCA added sections 83, 84, 161x, and 275 to the Atomic Energy Act (AEA), 42 U.S.C. §§ 2113, 2114, 2201(x),[10] and 2022. The UMTRCA authorized the United States Environmental Protection Agency (EPA) to establish standards of general application covering radiological hazards from uranium mill tailings, and gave the NRC the responsibility for implementing and enforcing these standards on a site-specific basis under its existing licensing authority. *See* 42 U.S.C. §§ 2022(b) and (d).[11]

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[9] *See* UMTRCA Section 2.(a), 42 U.S.C. § 7901(a) ("The Congress finds that uranium mill tailings located at active and inactive mill operations may pose a potential and significant health hazard to the public. . . ."); *Dunn v. U.S.*, 842 F.2d 1420, 1424-25 (3rd Cir. 1988).

[10] AEA section 161x, 42 U.S.C. § 2201(x), is the statutory authority for Criterion 9. *See Quivira Mining. Co. v. NRC*, 866 F.2d 1246, 1262 (10th Cir. 1989).

[11] In 1983, following EPA delays in establishing standards of general application, Congress amended AEA section 84, 42 U.S.C. § 2114 (by Act of Jan. 4, 1983, Pub.L. No. 97-415, 96 Stat. 2067), giving the NRC authority to approve licensee-proposed site-

(continued...)

In conjunction with the Staff's promulgation of Appendix A pursuant to the UMTRCA, the Staff, in September 1980, issued NUREG-0706, its "Final Generic Environmental Impact Statement on Uranium Milling" (GEIS),[12] which includes a detailed analysis of financial surety issues. In section 14 of the GEIS, "Financial Aspects of Uranium Mill Decommissioning And Tailings Management," the Staff concluded that pursuant to the UMTRCA, a surety regulation should require that the surety amount "be equal to the cost estimates in the approved plan for site decommissioning and tailings disposal." GEIS, § 14.2.4, item 2. However, as discussed in Section A.2, *infra*, there would be no reason to require HRI to submit a financial plan containing cost estimates for tailings disposal.

The close connection between the September 1980 GEIS financial surety analysis, and what became Criterion 9 in October 1980, is further indicated in Section 12 of the GEIS, "Proposed Regulatory Actions." With respect to surety arrangements, GEIS § 12.2.2, item 5, states that such arrangements must be established in accordance with "the approved plan discussed in Section 12.2.2, item 1." The referenced item states as follows:

> A plan for decommissioning of the mill buildings and site, and for disposing of the tailings, in accordance with requirements delineated above, must be proposed by applicants, and approved by appropriate agencies, before issuance or renewal of licenses. *At active mills, such plans must be submitted within about nine months. This plan must be submitted in conjunction with an environmental report, and must address the expected impacts of milling decommissioning and tailings disposal; alternatives for mitigating these*

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[11](...continued)
specific alternatives to EPA's general standards. *See Environmental Defense Fund v. NRC*, 866 F.2d 1263, 1266-69 (10th Cir. 1989).

[12] The Intervenors acknowledge the close connection between Criterion 9 of Appendix A, and the GEIS. *See* August 13 Brief, at 9 and n.5.

> *impacts shall be evaluated.* Aspects of the decommissioning plan relating to structures and site cleanup must provide sufficient detail to make reasonable cost estimates and to assure that mill design and operations are planned in a manner that facilitates decommissioning efforts.

GEIS, § 12.2.2, item 1, at 12-5 (emphasis added). The similarity of the italicized words above to the wording emphasized in the Criterion 9 excerpt, *supra*, and the close proximity in time between the issuance of the GEIS and Criterion 9, indicates that item 1 of GEIS § 12.2.2 is the likely source of the Criterion 9 provision regarding the need for a financial assurance plan. Note, however, that the GEIS reference above to license "applicants" was replaced by the term "The licensee" when Criterion 9 was subsequently issued. Additionally, the need to gain plan approval "before issuance or renewal of licenses" as stated in GEIS, § 12.2.2, item 1, is changed in Criterion 9 to require plan approval only "prior to the commencement of operations."

Moreover, the Staff has previously emphasized in this proceeding that not all of the Criterion 9 provisions apply to ISL uranium mining operations in that Criterion 9 was developed as part of the regulatory effort to remedy problems stemming from uranium mill tailings piles, as discussed above. *See also* NRC Staff's Response to Intervenors' Presentations on Technical Qualification, Financial, and Decommissioning Issues, dated February 18, 1999 (Staff's Financial Presentation), at 5-8 (discussing the relationship between Criterion 9 and HRI License Condition 9.5).[13] Since ISL operations do not produce

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[13] The Staff is of the view that the Commission should have stated in CLI-99-22, *supra,* that "The Staff has acknowledged that [some of] the financial assurance requirements in Criterion 9 of Appendix A to Part 40 do in fact apply to HRI." CLI-99-22, at 22.

the tailings which Appendix A was designed to address,[14] there would be no reasonable basis to impose on HRI all of Criterion 9's requirements. Consequently, it would not be reasonable to require HRI to submit a financial assurance plan regarding the costs of tailings reclamation.

Accordingly, as discussed above, neither the language of Criterion 9 nor its history support the conclusion that the Staff was required to approve HRI's financial assurance plan prior to issuing HRI its license.

2. HRI License Condition 9.5

As indicated in Section A.1, *supra*, HRI License Condition 9.5 only incorporates those Criterion 9 provisions which the Staff deemed applicable to HRI, and its terms thus do not simply repeat those contained in Criterion 9. With respect to the need for a financial assurance plan, HRI License Condition 9.5 states, in pertinent part,[15] as follows:

> As a prerequisite to operating under this license, the licensee shall submit an NRC-approved surety arrangement to cover the estimated costs of decommissioning, reclamation, and groundwater restoration. Generally,

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[14] *See* NRC Staff's Response To Intervenor Presentations On Liquid Waste Disposal Issues, dated December 16, 1998, at pages 9-10, and nn. 11-12 (referencing the GEIS). As stated there, the GEIS contrasted the large impacts of conventional uranium mining, which produces an average of 1800 tons of tailings per day, with the lesser impacts of ISL uranium mining. *See* GEIS, § 5.2, at 5-1 to 5-5; and GEIS Appendix B, Section 1.3. The volume of ISL mining waste is much smaller than that produced by conventional uranium mining, and contains much less radium than is found in mill tailings. *Id.*, § 3.3.1, at 3-8 to 3-9.

[15] HRI License at 2-3. License Condition 9.5 included in the Addendum to the August 13 Brief at pages 49-50.

> these surety amounts shall be determined by the NRC based on cost estimates for a third party completing the work in case the licensee defaults.[16]

These license provisions set forth a two-step financial assurance process which requires HRI to (1) estimate what it would cost a third party to decommission the site, restore the groundwater, and perform land reclamation efforts;[17] and (2) obtain NRC approval of a surety arrangement based on these cost estimates. HRI License Condition 9.5 does not specify a due date as to when cost-estimate information must be provided,[18] but this condition prohibits HRI from performing any ISL mining until an NRC-approved surety arrangement is in place. In addition, consistent with the PBL licensing approach used *in situ* leach mining, the condition did not contain a surety amount, but set forth the general standards that would have to be met prior to mining operations (*i.e.*, a surety sufficient to cover the estimated cost of decommissioning, reclamation, and groundwater restoration of the initial well field based on nine pore volumes until a production-scale, well field pore volume restoration value is established as described in License Condition 10.28). *See* License Conditions 9.5 and 10.28 (August 13 Brief, Addendum at 49-50, 52). The less prescriptive, PBL licensing approach also led the Staff to include in the condition the

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[16] The excerpt from HRI License Condition 9.5 in Intervenors' brief omits the second sentence of the condition. *See* August 13 Brief, at 6-7.

[17] This license requirement is based on the Criterion 9 provision that in establishing specific surety arrangements, "the licensee's cost estimates must take into account total costs that would be incurred if an independent contractor were hired to perform the decommissioning and reclamation work." Appendix A, Criterion 9.

[18] Similarly, as the Commission notes, Criterion 9 does not specify when a licensee must gain NRC's approval of its cost estimates. *See* CLI-99-22, slip op. at 22.

provision for adjusting the surety upwards "if at any time it is found that well field restoration requires greater pore-volumes or higher restoration costs. License Condition 9.5.[19] Thus, the issuance of the HRI license before the submission of acceptably detailed surety information was consistent with the regulatory flexibility inherent in the PBL approach that the Commission generally endorsed for the licensing of ISL mining projects. *See* CLI-99-22, slip op. at 19-20.

To date, HRI has not provided the Staff with sufficiently-detailed cost-estimate information, and the Staff is thus not yet in a position to approve a surety arrangement and litigation of the issue would be premature.[20] As noted by the Intervenors (*see* August 13 Brief, at 5-6), in 1997, HRI submitted a financial assurance plan for its Church Rock Section 8 site. The plan contains monthly cost figures for planned groundwater restoration

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[19] Given that HRI was licensed using the risk informed, PBL approach, Intervenors' reliance on examples of surety costs being included in other ISL licenses is misplaced. *See* August 13 Brief, at 12-13. In any case, the NRC-approved plan was not required to be in place until after issuance of the license. *See* CLI-99-22, slip op. at 22.

[20] HRI has submitted information on numerous occasions as the mining project evolved from mining at Church Rock only, in 1988, to include mining at the Unit 1 and Crownpoint sites. *See* FEIS at xix. In addition to the financial assurance information submitted by letter dated April 4, 1996 (August 13 Brief, Addendum at 53), HRI provided information to the NRC by letters dated June 25, 1997 (Exhibit 1 to Staff Financial Presentation), December 11, 1998 (Exhibit 2 to Staff Financial Presentation), February 4, 1999, and March 19, 1999 (Letter from J. Hull to P. Bloch, dated April 8, 1999). HRI's revisions, in part, responded to comments by the NRC and the New Mexico Environmental Department and tailored the cost estimates to address mining at Church Section 8 as a result of HRI's decision to begin mining first at that site. *See, e.g.*, Exhibit 1 to Staff Financial Brief.

and surface reclamation activities.[21] However, the plan lacks details with respect to how these cost figures were derived and the Staff, thus, been unable to adequately determine for itself what it would cost an independent third party to properly restore HRI's Section 8 property if, after starting to recover uranium, HRI became insolvent.

3. Commission Holdings in CLI-99-22

As discussed below, the Commission holdings in CLI-99-22: (1) validated the Staff's above-stated position that not all of the Criterion 9 provisions are applicable to HRI; and (2) agreed with the argument that the Staff, pursuant to 10 C.F.R § 40.32, had a large amount of discretion in issuing HRI its license. Regarding the first point, the Commission agreed with the Presiding Officer's conclusion that 10 C.F.R § 40.31(h) and Appendix A "were designed to address the problems related to mill tailings and not problems related to injection mining," noting that by the UMTRCA's enactment, "Congress sought to address the potential harm arising from unregulated uranium tailings piles left at milling sites." CLI-99-22, slip op. at 7 (footnotes omitted). Similarly, based in part on the GEIS, the Commission held that the NRC's primary focus in establishing its regulations implementing the UMTRCA was to ensure "the control of tailings at sites involving conventional

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[21] In its June 2, 1997, letter to the State of New Mexico forwarding HRI's Section 8 financial assurance plan (copies of this letter and plan are in Exhibit 1 to the Staff's Financial Presentation), HRI stated that the plan's cost data would be subject to change until the time that mining begins. *See* June 2 letter, at 2. Notwithstanding this cost uncertainty, the Staff needs more specific financial information regarding how HRI's cost figures were derived before the Staff can complete its review. To this end, the Staff has requested additional information from HRI. Letter from John Surmeir, NRC, to Richard Clement, Jr., HRI, dated August 31, 1999. Copies of that letter were sent to the parties and to the Office of the Secretary. The Staff will include the document in an update to the hearing file at a later date.

[uranium] mining and milling." CLI-99-22, slip op. at 7 (footnote omitted). Accordingly, the Commission further ruled that since many of the Appendix A requirements address hazards posed only by conventional uranium milling operations, these requirements "do not carry over to ISL mining." CLI-99-22, slip op. at 7.

Based on these holdings, the Commission stated that in issuing HRI its license, the Staff appropriately did not require HRI to meet those Appendix A provisions "that, by their own terms, apply only to conventional uranium milling activities," since such provisions "cannot sensibly govern ISL mining." CLI-99-22, slip op. at 7. For the few Appendix A provisions that are relevant to ISL mining, such as those contained in Criteria 2, 5A, and 9, the Commission found that these provisions are appropriately reflected in HRI's license. *See* CLI-99-22, slip op. at 7-8, and n.17 (referencing HRI License Condition 9.5).

In addressing the larger issue of how best to regulate ISL mining, the Commission stated as follows:

> Until the Commission develops regulatory requirements specifically dedicated to the particular issues raised by ISL mining, we will have no choice but to follow the case-by-case approach taken by our Staff in issuing HRI's license. As the Presiding Officer concluded, the "principal regulatory standards governing this application for a license are 10 C.F.R. § 40.32(c) and (d), which mandate protection of the public health and safety."

CLI-99-22, slip op. at 8-9 (footnote omitted). The Commission's ruling endorses the Staff's position that its review of the HRI license application, and issuance of that license, was

governed by the general standards of 10 C.F.R § 40.32,[22] under which the Staff has broad discretion, as discussed below.

The licensing provisions of 10 C.F.R. § 40.32(c) require the Staff to determine whether an applicant's proposed plans "are adequate to protect health and minimize danger to life or property." The licensing provisions of 10 C.F.R. § 40.32(d) require the Staff to determine whether issuance of the requested license will be "inimical to the common defense and security or to the health and safety of the public." These standards use the language of, and were adopted pursuant to, AEA section 161b, 42 U.S.C. § 2201(b), wherein Congress authorized the Commission to establish regulations governing the possession and use of source and byproduct material as necessary "to promote the common defense and security or to protect health or to minimize danger to life or property."

The broad delegation of authority conferred on the NRC by this AEA language in cases involving the licensing of nuclear power plants has long been noted by the courts. *See Westinghouse Elec. Corp. v. NRC*, 598 F.2d 759, 771 (3rd Cir. 1979), and cases cited therein. It stands to reason that this broad authority encompasses application of 10 C.F.R. Part 40 using a performance-based or phased licensing approach that is particularly suited to ISL mining to be conducted at multiple sites. Such mining is less hazardous than conventional mining and wholly dependent upon the site-specific characteristics of individual well fields which are not known until the licensee is ready to commence mining

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[22] *See, e.g.*, the Staff's December 1997 safety evaluation report, at 34, *citing* 10 C.F.R. § 40.32 as the authority for issuing the HRI license.

operations.[23] Thus, it is reasonable to require detailed financial assurance information to be provided prior to mining operations -- a time when up to date cost information would be available -- but not necessarily prior to licensing.

Accordingly, considering (1) the general nature of the 10 C.F.R. § 40.32(c)-(d) safety standards applied by the Staff in issuing a license to HRI; (2) the broad AEA authority inherent in those standards; and (3) the PBL approach endorsed by the Commission for a well field dependent, mining activity that has decommissioning hazards that are lower than those associated with the decommissioning of conventional uranium mills and power reactor facilities, the Staff's exercise of discretion in incorporating the applicable requirements of Criterion 9 into the HRI license conditions was appropriate.

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[23] Intervenors citation of the GEIS discussion regarding the tons of tailings generated by conventional mills and reactor cases disfavoring post-hearing resolution of issues misses the point. *See* August 13 Brief at 14, 20, 27-29. It is not reasonable to equate the hazards of reactor operation, conventional uranium milling operations and *in situ* leach mining. Indeed, a comparison of the decommissioning costs for a conventional uranium mining site containing mill tailings, to the decommissioning costs for a commercial nuclear power reactor in the GEIS shows that the reactor costs were an order of magnitude greater than mill costs. *See* GEIS section 14.2 (estimating the costs of reclaiming a mill tailings site as $5 million, while the decommissioning of a nuclear power reactor would cost between $50 and $60 million in 1980). Moreover, a more recent government study comparing non-conventional uranium production facilities (*i.e.*, ISL mining operations) with conventional uranium production facilities found that ISL mining decommissioning costs average about half the amount it costs to decommission a conventional uranium mining site (in 1994 dollars). *See* Staff Exhibit 1 (attached) containing Tables 3 and 6, from "Decommissioning of U.S. Uranium Production Facilities," DOE-EIA-0592, published in February, 1995, by the Energy Information Administration, at pages 17 and 38, respectively. The Commission has also relied on the lower risks of licensed activities other than power reactor operation to find financial arrangements sufficient. *E.g., Louisiana Energy Services* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, at 306 and n.18 (1997) (license applicant was financially qualified based in part on fact that health and safety risks associated with uranium enrichment are less than those associated with operation of nuclear reactors).

B. Staff's Responses to Commission Questions

1. Was financial assurance information submitted by HRI adequate to meet the requirements for licensing?

The financial assurance plan submitted by HRI in 1997 (*see* Section A.2 and n.21, *supra*), although lacking in detail, was adequate for purposes of issuing HRI's license. As discussed in Section A.1, *supra*, Criterion 9 cannot reasonably be read as establishing a pre-licensing requirement that the Staff approve HRI's estimates of what it would cost a third party to decommission its ISL site, restore the groundwater, and perform land reclamation efforts. Requiring such approval prior to ISL licensing would improperly graft provisions designed for active mills using traditional uranium mining techniques--mills which had already been operating for many years prior to 1980 and thus had large tailings piles impacting the environment and requiring proper disposal--onto undisturbed ISL sites having no mill tailings, and which, prior to lixiviant injection, generate no mining wastes impacting the environment. *See* Section A.1., *supra*, discussing GEIS § 12.2.2, item 1, and Criterion 9.

As stated in Section A.2, *supra*, HRI has still not provided the Staff with sufficiently-detailed cost-estimate information on which a financial surety arrangement could be approved. However, this present lack of financial assurance information does not constitute a violation of the Criterion 9 requirement that a financial surety arrangement must be established "prior to the commencement of operations," since HRI has not yet begun the ISL mining process of injecting lixiviant at any of its proposed well fields. Moreover, the present lack of an approved surety arrangement does not jeopardize the 10 C.F.R. §§ 40.32(c)-(d) health and safety findings the Staff made in issuing HRI its license, since no lixiviant

injection can occur until an approved surety arrangement is in place pursuant to HRI License Condition 9.5. This license provision ensures that any environmental impacts produced by HRI, in conducting its ISL uranium mining operations (*i.e.*, by injecting lixiviant), will not be allowed to occur in the absence of adequate assurance that sufficient funds will be available to cover later cleanup costs.

> 2. If HRI is correct in its assertion that an approved financial assurance plan is not a prerequisite to the issuance of a license, what is the meaning of the staff's assertion in its [response to the Review Petition, at 4-5] that "the issue is thus not yet ripe for . . . [the Presiding Officer's] . . . review?"

As reflected by the Staff's above response to the first question, HRI correctly asserted that an approved financial assurance plan is not a prerequisite to the issuance of an ISL mining license. The Staff's April 14, 1999 statement that "the issue is thus not yet ripe for . . . [the Presiding Officer's] . . . review," was made in rebutting the Review Petition's argument that the Presiding Officer, in LBP-99-13, had improperly failed to scrutinize HRI's financial assurance plan. *See* Review Petition, at 3-4. The point the Staff intended to make was that in the absence of a Staff-approved HRI financial assurance plan, a determination made by the Presiding Officer regarding the adequacy of the surety amount in HRI's financial assurance plan would necessarily be premature and a waste of agency resources since License Condition 9.5 prohibits any mining until that time and the Staff would not be able to provide a position in the proceeding until it completes its review. Although Intervenors could contest whether License Condition 9.5 contained the requisite specificity to delineate an acceptable surety, litigation of a plan which has not received Staff approval

would not be productive given that the review process is ongoing and any "approved plan" could substantially differ from information previously submitted by HRI.

3. May ENDAUM and SRIC contest HRI's financial assurance plan?

The Commission raised a third question concerning "whether and when HRI submitted a [financial assurance] plan in this case and the extent to which Intervenors may contest that plan." CLI-99-22, slip op. at 23. As discussed in Section A.2, *supra*, the fact that HRI submitted a financial assurance plan in 1997 is not disputed. For the reasons discussed below, if the 1997 plan, as later supplemented or revised, leads the Staff to approve a financial surety arrangement, ENDAUM and SRIC may contest that approval in an adjudicatory proceeding. Thus, the Intervenors would get an additional chance to air their financial assurance concerns and the matter would not be relegated to a post-hearing determination as Intervenors contend.[24]

Since HRI's 1997 financial plan does not form an adequate basis on which to estimate what it would cost a third party to decommission HRI's Section 8 site, restore the groundwater there, and perform land reclamation efforts, step one of the financial approval process has not been completed, and HRI's financial assurance plan has not been approved

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[24] *See* August 13 Brief, at 20, *citing Wisconsin Electric Power Company* (Point Beach Nuclear Power Plant, Unit 2), CLI-73-4, 6 AEC 6 (1973); *see also* August 13 Brief, at 27-29, *citing Consolidated Edison Company of New York, Inc.* (Indian Point Station, Unit No. 2), CLI-74-23, 7 AEC 947, 952 (1974); *Long Island Lighting Company* (Shoreham Nuclear Power Station, Unit 1), LBP-83-57, 18 NRC 445, 543-544 (1983); *Public Service Company of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-461, 7 NRC 313 (1978); *Union of Concerned Scientists v. NRC,* 735 F.2d 1437 (D.C. Cir. 1984), *cert. den.*, 469 U.S. 1132 (1985); and *Bellotti v. NRC,* 725 F.2d 1380 (D.C. Cir. 1983).

by the Staff. If adequate cost-estimate information is received from HRI, the Staff would then be able to determine the initial amount of surety which HRI will be required to provide.

If HRI is able to provide adequate cost estimates, and is able to provide an acceptable surety arrangement based on an initial surety amount as determined by the Staff, the "NRC-approved surety arrangement" specified in HRI License Condition 9.5 would be in place, and step two of the financial approval process would be complete. ENDAUM and SRIC would then be able to contest the Staff-approved plan, since some of their financial surety concerns were found by the Presiding Officer to be germane to this proceeding. *See* LBP-98-9, 47 NRC 261, 282 and n.55 (1998). The Presiding Officer referenced ENDAUM and SRIC's August 1997 amended hearing request, at pages 96-101, as the basis of their financial surety concerns.[25] Much of the financial surety argument (*e.g.*, that 10 C.F.R. § 40.36 applies) has been rendered moot by the ruling in CLI-99-22, slip op. at 22. With respect to Criterion 9, however, ENDAUM and SRIC challenged the adequacy of HRI's decommissioning cost estimate and surety arrangement, and stated their intent to litigate these issues. *See* Second Amended Request at 101.

Accordingly, ENDAUM and SRIC may contest HRI's cost estimates and surety arrangement in this proceeding at such time as they are approved by the Staff pursuant to HRI License Condition 9.5.

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[25] LBP-98-9, 47 NRC at 266, *citing,* Petitioners ENDAUM and SRIC's Amended Request for Hearing, Petition to Intervene, and Statement of Concerns, dated August 19, 1997 (Second Amended Request).

C. Staff's Response To The August 13, 1999 Brief

On August 13, 1999, ENDAUM and SRIC filed "Brief of Intervenors Eastern Navajo Dine Against Uranium Mining and Southwest Research and Information Center on Review of Partial Initial Decision LBP-99-13, Financial Assurance for Decommissioning" (August 13 Brief). As discussed below, the arguments in the August 13 Brief do not support Intervenors' claim that the HRI license should be revoked.

1. Requirements in 10 C.F.R. § 40.36 do not apply to HRI

As noted in Section A.1, *supra*, the Commission affirmed the ruling in LBP-99-13 regarding 10 C.F.R. § 40.36, stating that "the Presiding Officer reasonably concluded that the surety requirement in 10 C.F.R. § 40.36 does not apply" to HRI's license. CLI-99-22, slip op. at 22. The Presiding Officer based his ruling on the meaning of the terms "byproduct material," "source material," and "uranium milling," as defined in 10 C.F.R. § 40.4. *See* LBP-99-13, 49 NRC at 234-35. As explained there, the uranium brought to the surface by ISL mining is "source material," since it is uranium "in any physical or chemical form." ISL mining produces "byproduct material,"[26] and such mining is thus "uranium milling," since it is an "activity that results in the production of byproduct material as defined in this part." 10 C.F.R. § 40.4. In using these terms, the "except for" clause in 10 C.F.R. § 40.36

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[26] The 10 C.F.R. § 40.4 definition of "Byproduct Material," states in relevant part:

> Byproduct Material means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "byproduct material" within this definition.

explicitly takes licensed "uranium milling" activities outside the scope of its provisions, stating that for such activities the "financial assurance requirements" are found in Appendix A.

Intervenors seek reconsideration of the Commission holding affirming this ruling. *See* August 13 Brief, at 8 n.2, and 15-17. This request is untimely, and is otherwise without merit.

Procedurally, petitions for reconsideration must be filed within ten days of a final decision. *See* 10 C.F.R. § 2.1259(b), incorporating the requirements of 10 C.F.R. § 2.771(a). *See also* 10 C.F.R. § 2.786(e) (petition for reconsideration of a Commission decision made pursuant to a review petition (as here) to be filed within ten days of the Commission decision).[27] The applicability of 10 C.F.R. § 40.36 to HRI was first decided by the Presiding Officer, and his ruling was reviewed and affirmed by the Commission in CLI-99-22. Accordingly, as of July 23, 1999 (the date CLI-99-22 was issued), agency action became final with respect to this issue,[28] and Intervenors' August 13, 1999 reconsideration request is untimely.

Should the Commission choose to entertain the reconsideration request as a matter of discretion, the August 13 Brief contains no valid reasons to subject HRI to any 10 C.F.R. § 40.36 requirements. Intervenors' new argument in this regard is a variation of their earlier

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[27] Petitions for reconsideration of Commission decisions granting or denying review in whole or in part will not be entertained. 10 C.F.R. § 2.786(e).

[28] *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-782, 20 NRC 838, 841 (1984), and cases cited therein.

argument that an ISL mine is a "subsurface source materials facility" subject to the requirements of 10 C.F.R. § 40.36 (*see* Review Petition, at 6), while the Criterion 9 requirements "only apply to surface wastes." *See* August 13 Brief, at 15. The concept of a "subsurface source materials facility" is nowhere to be found in 10 C.F.R. Part 40, and the dual regulatory approach advocated by Intervenors is not consistent with the regulatory scheme now in place. Intervenors continue to ignore the existing 10 C.F.R. § 40.4 definitions of "uranium milling" and "byproduct material," and make no showing that the Presiding Officer's 10 C.F.R. § 40.36 analysis (summarized above) is faulty with respect to the use of these terms.

Accordingly, the Intervenors have established no basis to reverse LBP-99-13's holding in this regard.

2. ISL Licenses Issued on a Case-By-Case Basis

Intervenors argue that the Staff violated its established practice in issuing an ISL license to HRI without specifying a surety amount, citing surety amounts required in three other ISL licenses issued between 1987 and 1990, and relying on NUREG-1569, the "Draft Standard Review Plan for In Situ Leach Uranium Extraction License Applications," published by the Division of Waste Management, Office of Nuclear Material Safety and Safeguards, in October 1997 (DSRP). *See* August 13 Brief, at 10-13, 18-19, and 24-26. Intervenors offer no basis why the DSRP, a draft document, should be controlling in this proceeding.[29] Significantly, Intervenors fail to identify any regulation, statute, or other

[29] The Intervenors also fail to note that the DSRP states that surety amounts for well fields are usually established as the well fields go into production. *See* DSRP, Section 6.5.3 (continued...)

binding authority which would require the Staff to always specify a surety amount when issuing an ISL license. As the Commission recognized in CLI-99-22, until regulatory requirements specifically dedicated to ISL mining are developed, the issuance of ISL licenses will occur on a case-by-case basis. *See* CLI-99-22, slip op. at 8-9.

On this issue, the Intervenors in their August 13 Brief also fail to address the fact that during the time between 1990 and the 1998 issuance of HRI's license, the concept of PBL was developed and applied in issuing the HRI license. Consistent with the PBL philosophy, the license included a minimal number of prescriptive requirements while still protecting public health and safety.[30] Accordingly, HRI's license thus did not need to include a specific date by which a surety arrangement would be established, or a specific surety amount, since including such details at the time of initial licensing is not required by the terms of Criterion 9 in Appendix A. Moreover, when the HRI license was issued, the Staff knew that HRI could not immediately begin ISL mining operations, due, in part, to several license conditions which HRI would first have to satisfy at a later date. *See e.g.,* HRI License Conditions 10.27 to 10-31 (August 13 Brief, Addendum at 52).

Thus, any change in Staff practice between 1990 and 1998 regarding procedures for establishing surety arrangements in ISL mining licenses did not violate regulatory

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[29](...continued)
(1), at page 6-18, referencing Criterion 9 of Appendix A. Thus, the DSRP endorses a phased approach to establishing surety amounts during ISL mining operations. HRI License Condition 9.5, requiring annual surety updates, is consistent with this phased approach.

[30] The Commission specifically endorsed the PBL approach to ISL licensing matters. *See* CLI-99-22, slip op. at 17-21.

requirements and, is in concert with the PBL process as it evolved during that time. Accordingly, past Staff licensing practices form no basis to invalidate HRI's license as requested by ENDAUM and SRIC.

3. The Presiding Officer Properly Considered All Testimony

The Intervenors charge that the Presiding Officer, in deciding LBP-99-13, "overlooked" a footnote in the expert testimony of Dr. Michael Sheehan,[31] and thus wrongly rejected their argument that basing the initial surety amount on nine pore volumes of groundwater restoration effort does not sufficiently protect the environment. *See* August 13 Brief, at 22-23. The Intervenors also argue that the Staff's nine-pore-volume assumption was established "without a reasonable basis." *Id.*, at 23.

The nature of these arguments is best appreciated by looking at the full text of the challenged portion of LBP-99-13, which states as follows:

> Intervenors have argued that it is improper to base surety for groundwater restoration on a Staff determination that it will take nine pore volumes for proper restoration of groundwater. [Intervenors January 1999 Brief] at 16. However, the requirement that restoration be estimated as being accomplished through flushing with nine pore volumes, was reached through the professional judgment of the NRC and is contained in SUA-1508 [HRI License Condition] 9.5. The number of pore volumes was estimated by the Staff to be greater than the 4 pore volumes proposed by HRI. Staff's conclusion, is that:

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[31] The footnote at page 15 of Dr. Sheehan's proffered testimony states as follows:

> Even 9 pore volumes seriously underestimates the number of pore volumes required for restoration. The Mobile pilot project on section 9 in Church Rock required 16.7 pore volumes and still did not reach complete restoration. FEIS 4-37. At PRI's operations in Wyoming, well field A has taken 21 pore volumes and restoration is not complete. Exhibit E.

> On the basis of the data submitted by HRI, the staff conclude that practical production-scale groundwater restoration activities would be at most [sic] require a 9 pore volume restoration effort.
>
> FEIS, NUREG-1508 at 4-40 (1997). Intervenors attempt to impugn the motives of the Staff but have not provided any analysis or expert testimony that casts doubt on the Staff estimate. Intervenors [January 1999]Brief at 15-18. The Staff estimate, contained in [HRI License Condition] 9.5, establishes the amount of surety required before beginning the Churchrock Section 8 project. However, 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. SUA-1508 [HRI License Condition] 9.5. Hence, the surety may be adjusted *during* the Churchrock Section 8 ISL operations, [32] and the surety for the other portions of the project may be affected by the experience in Section 8. There is no merit to Intervenors' argument that the Staff improperly utilizes nine pore volumes as a standard for calculating the amount of surety that is required before commencing operations.

LBP-99-13, 49 NRC at 236-37 (emphasis in original) (footnote added).

Thus, the Presiding Officer properly recognized that the initial surety amount to be required, pursuant to HRI's license, will be subject to change, depending on (among other factors) the results of HRI's initial well field restoration efforts. Dr. Sheehan's testimony, on the other hand, narrowly focused on criticizing HRI's estimate of four pore volumes to restore groundwater. *See* Intervenors' January Financial Brief, Exhibit 1, at 14-16. As reflected in the LBP-99-13 excerpt set forth above, the Presiding Officer noted that the Staff did not adopt HRI's four-volume estimate, making Dr. Sheehan's testimony largely irrelevant.

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[32] HRI License Condition 9.5 thus belies Dr. Sheehan's charge that the nine-pore-volume-based surety amount would be improperly locked in "for an indefinite period." *See* Intervenors' January Financial Brief, Exhibit 1(Sheehan Testimony), at 13. *See also* Staff's Financial Presentation, at 5-6, further rebutting Dr. Sheehan's testimony.

Accordingly, Intervenors' arguments regarding Dr. Sheehan's testimony do not support action being taken against HRI's license.

IV. SUMMARY AND CONCLUSION

The Staff's review of ISL mining license applications is governed by the safety standards stated in 10 C.F.R. § 40.32. Since these standards are general ones, and, due to the lack of regulatory requirements specifically applicable to ISL mining and the site-specific nature of the activity, Staff reviews of ISL mining license applications have necessarily been conducted on a case-by-case basis. The provisions of 10 C.F.R. § 40.31(h) are not applicable to such reviews. While some of the specific provisions within the Appendix A criteria apply to ISL applicants and licensees, these criteria in general are not applicable to ISL mining operations. *See* CLI-99-22, slip op. at 6-9, *affirming* LBP-99-1, 49 NRC 29, 32-33 (1999).

With respect to financial surety requirements, the provisions of 10 C.F.R. § 40.36 are not applicable to ISL applicants and licensees. *See* CLI-99-22, slip op. at 22, *affirming in part,* LBP-99-13, 49 NRC 233, 235 (1999). As the Staff has shown in sections A-B, *supra*, HRI License Condition 9.5 reflects the proper exercise of the Staff's discretion in incorporating the applicable financial surety requirements in Criterion 9 of Appendix A that were necessary for issuance of the HRI license using the PBL approach.

Accordingly, for all of the reasons discussed above, the Commission should reject Intervenors' arguments and affirm LBP-99-13 in its entirety.

Respectfully submitted,

for John T. Hull
Counsel for NRC Staff

Dated at Rockville, Maryland
this 3rd day of September 1999

Table 3. Estimated Decommissioning Costs for Conventional Uranium Production Facilities[a] as of January 1, 1994
(Thousand Dollars)

Name	Mill Dismantling Costs	Tailings Reclamation Costs	Groundwater Restoration Costs	Indirect Costs	Total Decommissioning Costs
Ambrosia Lake	1,432	12,485	1,183	4,293	19,393
Bear Creek	628	6,635	2,559	2,974	12,796
Canon City	944	8,123	3,238	530	12,835
Church Rock	709	3,574	2,180	2,134	8,597
Ford	1,000	5,500	5,750	2,500	14,750
Gas Hills (ANC)[b]	400	4,800	200	2,000	7,400
Gas Hills (UMETCO)	996	8,500	3,735	3,826	17,057
Grants	1,654	6,593	9,972	5,073	23,292
Highland	2,500	5,600	600	900	9,600
L-Bar	709	10,456	729	3,492	15,386
Lisbon	600	5,400	1,600	1,500	9,100
Lucky Mc	565	3,983	2,390	2,253	9,191
Panna Maria	609	5,221	1,700	2,401	9,931
Ray Point	500	1,800	500	1,300	4,100
Shirley Basin	1,094	3,017	603	1,697	6,411
Split Rock	800	10,000	3,614	11,500	25,914
Sweetwater	581	2,776	275	1,426	5,058
Uravan	944	26,751	3,142	7,442	38,279
White Mesa	654	14,656	[c]0	4,345	19,655
Total	**17,319**	**145,870**	**43,970**	**61,586**	**268,745**
Average	**912**	**7,677**	**2,314**	**3,241**	**14,144**

[a]The following sites did not have complete data and are excluded from this table: Bluewater, Edgemont, Falls City, Moab, Petrotomics, Sherwood, and Shootering.
[b]American Nuclear Corporation.
[c]White Mesa reported "0" for groundwater restoration costs. These costs may have been included under another category. All facilities have at least some groundwater restoration costs.
Source: Cost estimates are based on data from the U.S. Nuclear Regulatory Commission, State agencies, or licensees.

Table 6. Estimated Decommissioning Costs for U.S. Nonconventional Uranium Production Facilities as of January 1, 1994
(Thousand Dollars)

Name[a]	Plant Dismantling Costs	Wellfield Restoration Costs	Groundwater Restoration Costs	Ponds and Other Costs	Indirect Costs	Total Decommissioning Costs
Benavides	222	343	1,986	351	726	3,628
Bruni	1,153	1,246	3,311	1,176	1,722	8,608
Burns Ranch/Clay West	3,164	3,808	15,994	5,044	7,003	35,013
Chris. Ranch/Irigaray	314	1,130	2,868	2,374	1,672	8,358
Crow Butte	311	742	1,766	513	833	4,165
Highland	815	727	2,243	709	1,124	5,618
Holiday/El Mesquite	1,017	3,002	5,754	1,308	2,770	13,851
Kingsville Dome	208	270	540	179	299	1,496
Las Palmas	203	173	353	40	192	961
Mt. Lucas	475	633	908	5,106	1,781	8,903
North Butte/Ruth	231	445	1,668	591	734	3,669
Rosita	101	74	353	74	151	753
Tex-1	84	201	176	0	115	576
West Cole	89	233	1,540	417	570	2,849
Total	**8,387**	**13,027**	**39,460**	**17,882**	**19,692**	**98,448**
Average	**599**	**931**	**2,819**	**1,227**	**1,407**	**7,032**

[a]Excludes the incomplete data for the Hobson and Lamprecht/Zamzow sites and data for Smith Ranch, a site that has not begun commercial production.
Note: Totals may not equal sum of components because of independent rounding.
Source: Table 5.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
HYDRO RESOURCES, INC.	)	Docket No. 40-8968-ML
P.O. Box 15910	)	
Rio Rancho, New Mexico 87174	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE BRIEF ON FINANCIAL SURETY ISSUES" in the above-captioned proceeding have been served on the following by U.S. Mail, first class, or as indicated by a single asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, or as indicated by double asterisks via e-mail and U.S. Mail, first class, this 3rd day of September, 1999:

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