

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

**DOCKETED: 4/6/2000**

In the Matter of	)	
	)	
HYDRO RESOURCES, INC.	)	Docket No. 40-8968-ML
P.O. Box 15910	)	
Rio Rancho, New Mexico 87174	)	
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NRC STAFF'S RESPONSE  
TO MOTION TO REOPEN AND SUPPLEMENT THE RECORD

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John T. Hull  
Counsel for NRC Staff

April 4, 2000

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INTRODUCTION

On March 15, 2000, two of the intervenors in this Subpart L proceeding, Eastern Navajo Diné Against Uranium Mining (ENDAUM), and Southwest Research and Information Center (SRIC), jointly filed "Intervenors' Motion to Reopen and Supplement the Record" (Motion to Reopen), pursuant to 10 C.F.R. § 2.734. ENDAUM and SRIC request that the Commission reopen the record and allow into evidence an affidavit of Dr. John Fogarty (attached to their Motion to Reopen as Exhibit 1), which includes further exhibits regarding allowable uranium levels in drinking water.

As shown below, ENDAUM and SRIC have not met the applicable requirements of 10 C.F.R. § 2.734 for three reasons: (1) the Motion to Reopen is untimely, and does not raise a sufficiently important safety issue to overcome its untimeliness; (2) Dr. Fogarty is not a sufficiently qualified expert concerning the health consequences of uranium levels in drinking water; and (3) even if the Presiding Officer in this proceeding had been presented with Dr. Fogarty's affidavit (or the affidavit of another expert) and the supporting exhibits,

this evidence would not have changed the Presiding Officer's initial groundwater decision. Accordingly, the Motion to Reopen should be denied.

### BACKGROUND

The NRC Staff issued a materials license to Hydro Resources, Inc. (HRI) on January 5, 1998, authorizing HRI to conduct *in situ* leach (ISL) uranium mining on designated sites in New Mexico. One of the license conditions requires HRI, prior to conducting any ISL mining, to measure more than 30 water quality parameters (one of which is uranium) in each of the well field areas to be mined, in order to establish baseline levels. *See* HRI License Condition (LC) 10.21. For each measured parameter, the primary restoration goal, following the completion of ISL mining in the well field area, is to return the parameter to its baseline level. *See* LC 10.21A.

The license also establishes secondary groundwater restoration goals for each parameter; most of these water quality levels are pegged at the concentration limits specified in the United States Environmental Protection Agency (EPA) primary and secondary drinking water regulations.<sup>1</sup> *See* LC 10.21A. For some parameters, including uranium, the EPA has not established a concentration limit, as noted in NUREG-1508, the February 1997 Final Environmental Impact Statement (FEIS) published in connection with the issuance of HRI's license. *See, e.g.*, FEIS, at 3-36, Table 3.19 col. 5. Thus, in the absence of an EPA uranium limit, the Staff established a secondary groundwater restoration goal for uranium

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<sup>1</sup> *See* 40 C.F.R. Parts 141, and 143, respectively.

of 0.44 milligrams per liter (mg/L). *See* LC 10.21A.<sup>2</sup> This goal is derived from NRC standards set forth in 10 C.F.R. Part 20, appendix B, as detailed in ¶ 6 of the affidavit of Christopher McKenney attached as Staff Exhibit 1.

Restoration of groundwater quality following ISL mining activities is discussed at FEIS pages 4-26 to 4-40. After ISL mining activities in an aquifer cease, natural geochemical processes tend to remove uranium from the groundwater as it flows away from the well field area. *See* FEIS, at 4-39. However, since there are many site-specific variables that may affect these natural processes, HRI agreed to perform groundwater restoration demonstrations at each of its project sites within 18 months of the date ISL mining commences at a site.<sup>3</sup> Should such demonstrations not be completely successful for all measured parameters, the Staff stated in the FEIS as follows:

If a groundwater parameter could not be restored to its secondary goal, HRI would have to make a demonstration to NRC that leaving the parameter at the higher concentration would not be a threat to public health and safety and that, on a parameter by parameter basis, water use would not be significantly degraded.

FEIS, at 4-27.

On January 15, 1998, ENDAUM and SRIC filed “ENDAUM’s and SRIC’s Motion

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<sup>2</sup> It should be noted that this amount of uranium is well below the State of New Mexico’s uranium drinking water standard of 5.0 mg/L. *See* FEIS Table 4.7, at 4-30.

<sup>3</sup> *See* FEIS, at 4-39, *citing* HRI’s August 15, 1996 “Response to Request for Further Clarification and Additional Information of Responses; Safety Analysis Review and Environmental Review for the Hydro Resources, Inc., Uranium Solution Mining License Application, Crownpoint, New Mexico.” The details of what the groundwater restoration demonstrations will include are set forth in the FEIS, at page 4-39.

for Stay, Request for Prior Hearing, and Request for Temporary Stay” (Stay Motion), in which they questioned the adequacy of the 0.44 mg/L secondary groundwater restoration goal stated in HRI’s license. *See* Dr. Richard Abitz’s January 9, 1998 affidavit (attached to the Stay Motion as Exhibit 4), at ¶¶ 37-40. After the requested stay was imposed and later lifted, the hearing process continued, and at HRI’s request, the Presiding Officer bifurcated the proceeding. *See* Order dated September 22, 1998 (unpublished) (establishing Phase I in which issues relevant to HRI’s Church Rock Section 8 site would be adjudicated first).

The Commission upheld the September 22 bifurcation order, endorsing the initial focus on Section 8 issues. *See* CLI-98-22, 48 NRC 215, 218 (1998). *See also* CLI-99-1, 49 NRC 1, 3-4 (1999) (endorsing process whereby the Presiding Officer would issue a series of decisions on Phase 1 issues).

During the course of the Phase I proceeding before the Presiding Officer, the groundwater issue was addressed by the parties in great detail. For example, in partial response to questions propounded by the Presiding Officer in his order dated April 21, 1999 (unpublished),<sup>4</sup> the Staff submitted an affidavit of William Ford dated May 11, 1999 (Ford Affidavit), providing analysis of groundwater contamination issues, including those

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<sup>4</sup> Therein, in relevant part, the Presiding Officer requested discussion on the laboratory work reported in FEIS Tables 4.8 and 4.9, and inquired about environmental costs which could reasonably be expected to result from foreseeable difficulties in restoring groundwater quality at Section 8. *See* April 21 Order, slip op. at 1-2, ¶ 1.

involving uranium. Later, in his August 1999 final decision concluding Phase I of this proceeding, the Presiding Officer addressed the technical issues raised by ENDAUM and SRIC regarding the Staff's secondary groundwater restoration goal for uranium. *See* LBP-99-30, 50 NRC 77, 100-01 (1999), *citing* (in part) Ford Affidavit, at 7-8.<sup>5</sup> The Presiding Officer also cited FEIS Table 3.19, at 3-36, showing that at the Church Rock site, the average pre-mining level of uranium in the groundwater is already at a level of 1.8 mg/L. *See* LBP-99-30, *supra*, 50 NRC at 100. Thus, once HRI establishes the well field average for uranium at its Section 8 site, pursuant to LC 10.21, this average may be well above the 0.44 mg/L secondary goal for uranium applicable generally at all of HRI's sites.<sup>6</sup>

Moreover, as a legal matter, the Presiding Officer ruled that ENDAUM's and SRIC's challenge to the Staff's 0.44 mg/L secondary groundwater restoration goal for uranium was an impermissible attack on an NRC regulation. *See* LBP-99-30, *supra*, 50 NRC at 115.

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<sup>5</sup> Regarding potential uranium contamination of groundwater caused by ISL mining, Mr. Ford had explained there that redox-sensitive parameters such as uranium typically do not migrate very far from ISL well fields, even while at elevated levels after groundwater restoration activities. *See* Ford Affidavit, at 6-7, *citing* FEIS, at 4-39.

<sup>6</sup> The requirements for establishing well field averages for uranium and the other measured parameters are detailed in LC 10.21A-B. These averages will constitute the primary groundwater restoration goal for each parameter. *See* FEIS Table 4.6, at 4-28. The FEIS noted the possibility that at HRI's Church Rock site, given the existing 1.8 mg/L average for uranium in the groundwater there, "some well fields may have average uranium baseline values and, therefore, primary groundwater restoration goals that exceed 0.44 mg/L." FEIS, at 4-48.

DISCUSSION

A. Standard for Reopening a Closed Subpart L Record

The Staff agrees with the Intervenors that the requirements applicable to reopening a closed record in a materials licensing proceeding are those set forth in 10 C.F.R. § 2.734.<sup>7</sup>

In relevant part, the rule states as follows:

(a) A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied:

(1) The motion must be timely, except that an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented.

(2) The motion must address a significant safety or environmental issue.

(3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

(b) The motion must be accompanied by one or more affidavits which set forth the factual and/or technical bases for the movant's claim that the criteria of paragraph (a) of this section have been satisfied. Affidavits must be given by competent individuals with knowledge of the facts alleged, or by experts in the disciplines appropriate to the issues raised. Evidence contained in affidavits must meet the admissibility standards set forth in 10 C.F.R. § 2.743(c).<sup>8</sup>

10 C.F.R. § 2.734(a)-(b) (footnote added).

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<sup>7</sup> See Motion to Reopen, at 5, citing *Radiology Ultrasound Nuclear Consultants, P.A.* (Strontium-90 Applicator), LBP 88-3, 27 NRC 220, 222-23 (1988).

<sup>8</sup> Pursuant to 10 C.F.R. § 2.743(c), the Staff objects to Exhibits G, H, and I attached to Dr. Fogarty's affidavit. Each of these exhibits are draft documents, and should thus not be viewed as being sufficiently reliable under the 10 C.F.R. § 2.743(c) standard, since they are subject to change and do not represent final requirements or guidelines.

The Commission issued this rule in May 1986, and it codified existing NRC case law which had developed over the years regarding motions to reopen.<sup>9</sup> Such case law remains in effect whether or not specifically adopted in 10 C.F.R. § 2.734, and provides useful guidance in applying the rule's provisions. See Statement of Considerations (SOC) published with the rule, 51 Fed. Reg. 19535 (May 30, 1986), at 19537 col. 1.

The timeliness requirement stated in 10 C.F.R. § 2.734(a)(1) involves in part the question of whether the issues sought to be presented could have been raised earlier in the proceeding. See SOC, 51 Fed. Reg. at 19536 col. 1, citing *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Generating Station), ALAB-138, 6 AEC 520, 523 (1973).<sup>10</sup> The critical question is not when the information at issue comes to the movant's attention, but "whether the information could have been submitted earlier."<sup>11</sup>

Additionally, 10 C.F.R. § 2.734(a)(1) contains a narrow exception to the need for timeliness, which applies only if the matter sought to be presented raises "an exceptionally

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<sup>9</sup> See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), CLI-86-18, 24 NRC 501, 506 n.2 (1986).

<sup>10</sup> In establishing the timeliness provision of the rule, the Commission saw no reason to impose an arbitrary cutoff point, and thus chose not to further define what is meant by "timely." See SOC, 51 Fed. Reg. at 19536 col. 1.

<sup>11</sup> *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No.1), ALAB-815, 22 NRC 198, 202 (1985) (footnote and citations omitted).

grave issue.”<sup>12</sup> In establishing this provision, the Commission anticipated that motions to reopen based on this narrow exception would “be granted rarely and only in truly extraordinary circumstances.” SOC, 51 Fed. Reg. at 19536 col. 2. The Commission further stated that even if such an issue is presented, the other requirements of 10 C.F.R. § 2.734 must still be met to warrant reopening a closed record. *Id.* The exception to the timeliness requirement has been stated as follows:

In the case of a motion which is untimely without good cause, the movant has an even greater burden; he must demonstrate not merely that the issue is significant but, as well, that the matter is of such gravity that the public interest demands its further exploration.

*Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No.2), ALAB-486, 8 NRC 9, 21 (1978) (citations omitted).

Pursuant to 10 C.F.R. § 2.734(a)(2), a timely motion to reopen must establish the presence of a “significant safety or environmental issue.” Evidence of such an issue must relate directly to the local residents affected by the challenged action.<sup>13</sup>

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<sup>12</sup> The SOC, 51 Fed. Reg. at 19536 col. 1, states that this standard is based on *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358, 365 n. 10 (1973) (if the issue raised presents “a sufficiently grave threat to public safety,” the evidentiary record may be reopened, even if the issue was not timely presented).

<sup>13</sup> See *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No.1), CLI-85-8, 21 NRC 1111, 1113-14 (1985) (denying motion to reopen based on information in death certificates, and the results of a door-to-door survey, which failed to cast reasonable doubt on the validity of prior radiological studies of the local population).

The third requirement of 10 C.F.R. § 2.734(a) is that a movant must show that “a materially different result” would have been likely “had the newly proffered evidence been considered initially.” 10 C.F.R. § 2.734(a)(3). The movant must show that had the new information been considered, a different result would have been likely. *See* SOC, 51 Fed. Reg. at 19537 col. 1.

The Commission, in applying the provisions of 10 C.F.R. § 2.734(a)(1-3), has stated that new expressions of concern opposing a license must ordinarily be based on new information to adequately support a motion to reopen. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-10, 32 NRC 218, 222 (1990). “To permit otherwise would open a door to abuse and prolong further our already overlong proceedings.” *Id.* (footnote omitted). *See also Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-3, 28 NRC 1, 3-4 (1988) (motions to reopen not intended to enable parties “to pass off old, unsuccessful contentions as new and relitigate them in hopes of a better result the next time around.”) Similarly, while an analysis of a technical issue may be new, it will not sufficiently support reopening the record if the documents it is based on could have been relied upon earlier. *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903, 994-95 (1981).

Further, 10 C.F.R. § 2.734(b) requires that motions to reopen must be accompanied by one or more supporting affidavits. In particular, on matters of technical opinion, such affidavits must be given by “experts in the disciplines appropriate to the issues raised.” This

requirement will be discussed further in addressing Dr. Fogarty's affidavit in Section B.2, *infra*.

B. Motion to Reopen Fails to Meet Applicable 10 C.F.R. § 2.734 Requirements

ENDAUM and SRIC fail to meet their burden of showing that reopening the *HRI* record is warranted. As discussed below, their Motion to Reopen is deficient for three reasons: (1) the motion is untimely, and does not raise "an exceptionally grave" safety issue; (2) Dr. Fogarty is not a sufficiently qualified expert concerning the health consequences of uranium levels in drinking water; and (3) even if the Presiding Officer had been presented with Dr. Fogarty's affidavit (or the affidavit of a more qualified expert) and the supporting exhibits, this evidence would not have changed his ruling in LBP-99-30, *supra*, 50 NRC at 115, that ENDAUM's and SRIC's challenge to the Staff's 0.44 mg/L restoration goal for uranium was an impermissible attack on an NRC regulation. Accordingly, the Motion to Reopen should be denied.

1. Untimely Motion Does Not Raise an Exceptionally Grave Issue

ENDAUM and SRIC concede that their Motion to Reopen is not timely. *See* Motion to Reopen, at 7. They proceed to argue, however, that the issue they have raised is an exceptionally grave one. As shown below, these arguments do not justify reopening the record.

On the issue of timeliness, ENDAUM and SRIC are correct -- but for the wrong reason -- that their Motion to Reopen is untimely. Resolving the question of timeliness here depends not on when the Presiding Officer issued his final Phase I decision, or when

Dr. Fogarty moved to Crownpoint,<sup>14</sup> but on the fact that the documentary materials on which Dr. Fogarty relies were published and available during the 1995-98 time period, well before the evidentiary record closed. Not only were these materials a matter of public record, but they concern an issue -- whether the HRI license's 0.44 ml/g secondary groundwater restoration goal for uranium is adequate -- which ENDAUM and SRIC had specifically raised in connection with the 1998 Stay Motion.<sup>15</sup> By the time ENDAUM and SRIC filed their written presentation on groundwater issues in January 1999 (which included another affidavit of Dr. Abitz),<sup>16</sup> all of the articles referenced by Dr. Fogarty had been published. ENDAUM and SRIC offer no reason why they, in connection with Dr. Abitz's presentation, or one of their other groundwater experts, could not have presented these articles to the Presiding Officer in 1999, before the record closed.<sup>17</sup>

The untimely Motion to Reopen is equally deficient in failing to show the presence

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<sup>14</sup> See Motion to Reopen, at 7 and n.6.

<sup>15</sup> See Stay Motion, dated January 15, 1998, at 6, citing ¶¶ 27-40 of Dr. Richard Abitz's January 9, 1998 affidavit, attached to the Stay Motion as Exhibit 4. Therein, at ¶¶ 37-40, Dr. Abitz questioned the adequacy of the 0.44 mg/L secondary groundwater restoration goal stated in HRI's license.

<sup>16</sup> ENDAUM and SRIC reference this January 1999 affidavit of Dr. Abitz, but do not explain why Dr. Abitz -- either then or sometime later -- could not have introduced the 1995-98 material attached to Dr. Fogarty's affidavit. See Motion to Reopen, at 14 n.11.

<sup>17</sup> ENDAUM's and SRIC's reliance on *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973), is misplaced. See Motion to Reopen, at 8. In that case, a motion to reopen was filed before the licensing board had issued its initial decision, and several of the documents at issue had come into existence only after the hearing record was closed. See *Vermont Yankee*, 6 AEC at 364-65.

of an exceptionally grave safety issue. *See* 10 C.F.R. § 2.734(a)(1). ENDAUM and SRIC make no showing that any persons using well water in the vicinity of Section 8 would be exposed to unhealthy levels of uranium as the result of ISL mining at Section 8. In the “Affidavit of Dr. John D. Fogarty in Support of ENDAUM/SRIC Motion to Reopen and to Supplement the Record,” dated March 1, 2000 (Fogarty Affidavit), Dr. Fogarty generally refers to patients of his who reside in the Church Rock area (*see* Fogarty Affidavit, at ¶ 8); he questions the integrity of water supplies in the Church Rock area (*id.*, at ¶ 9); and he vaguely refers to water wells “in the Church Rock area.” *Id.*, at ¶ 11. But the only well data Dr. Fogarty references is from the town of Crownpoint. *Id.*, at ¶ 13 and n.4.

Crownpoint issues are outside the scope of Phase I of this proceeding.<sup>18</sup> ENDAUM and SRIC note the Presiding Officer’s ruling that the subject of drinking water standards at Crownpoint is not part of Phase I,<sup>19</sup> but fail to explain why Dr. Fogarty should, nonetheless, be allowed to use Crownpoint well data in support of their efforts to reopen the Phase I record.

Moreover, as explained in ¶¶ 2, 4, 5, 8, and 9 of Mr. McKenney’s affidavit attached as Staff Exhibit 1, the safety of using the 0.44 mg/L level as the secondary groundwater restoration goal for uranium was fully evaluated during the Staff’s preparation of the FEIS.

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<sup>18</sup> *See* Presiding Officer’s Order dated September 22, 1998 (unpublished) (issues relevant to HRI’s Church Rock Section 8 site to be adjudicated first), *affd.*, CLI-98-22, 48 NRC 215, 218 (1998) (endorsing initial focus on Section 8 issues).

<sup>19</sup> *See* Motion to Reopen, at 14 n.11, *citing* LBP-99-30, *supra*, 50 NRC at 101.

No showing is made which casts any doubt on the validity of the Staff's analysis in the FEIS. Furthermore, the analysis in the Ford Affidavit, regarding the chemical inability of mobilized uranium to move far from the ISL well fields, is not addressed by ENDAUM and SRIC in their Motion to Reopen.

Accordingly, ENDAUM and SRIC have failed to meet the requirements of 10 C.F.R. § 2.734(a)(1). Their Motion to Reopen should, for this reason, be denied.

2. Dr. Fogarty Lacks Sufficient Expert Qualifications

ENDAUM and SRIC fail to adequately establish that Dr. Fogarty has the credentials necessary to support their motion, as required by 10 C.F.R. § 2.734(b). *See* Motion to Reopen, at 15-17.

The requirements of 10 C.F.R. § 2.734(b) state, in relevant part, that in order to meet the requirements of 10 C.F.R. § 2.734(a), the movant must provide one or more affidavits "by experts in the disciplines appropriate to the issues raised." 10 C.F.R. § 2.734(b). Clearly, this regulation contemplates that the expert must have specific training in the subject area relevant to a motion to reopen, not merely an advanced degree in any field. Dr. Fogarty's Affidavit, at ¶ 4, and his resume (attached thereto as Exhibit A), reflect that he is a medical doctor, board-certified in the specialty of family practice. No information is provided showing that he has received any formal training, or has any special expertise, relating to the

health consequences of uranium in drinking water -- the technical subject raised in questioning the 0.44 mg/L secondary groundwater restoration goal for uranium contained in HRI's license.

Moreover, in reviewing the Fogarty Affidavit, it does not appear that Dr. Fogarty was given adequate information on which to base a fully informed opinion on the technical adequacy of the 0.44 mg/L secondary groundwater restoration goal for HRI's Section 8 site. Dr. Fogarty makes no reference to License Condition 10.21, or any other portions of HRI's license. His concluding statement that HRI should be required to "return the uranium concentration in the restored water back to baseline levels at the conclusion of mining operations" (Fogarty Affidavit, at ¶ 24), shows no awareness of the fact that this is already the primary restoration goal stated in LC 10.21.<sup>20</sup> Furthermore, no indication is given that Dr. Fogarty reviewed (1) the Ford Affidavit; (2) the FEIS sections cited by Mr. Ford therein; or (3) LBP-99-30, *supra*, 50 NRC at 100-01, which relies on these Staff analyses in addressing the technical aspects of the 0.44 mg/L issue.

Accordingly, ENDAUM and SRIC have failed to meet the requirements of 10 C.F.R. § 2.734(b), in that their Motion to Reopen is not adequately supported by the Fogarty Affidavit. Their Motion to Reopen should, for this reason, be denied.

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<sup>20</sup> This statement also evidences Dr. Fogarty's lack of awareness of the fact that baseline levels of uranium are already elevated in the Section 8 well field areas to be mined, due to the presence of uranium there in the host rock.

3. Newly Proffered Evidence Would Not Have Changed the Initial Decision

Pursuant to 10 C.F.R. § 2.734(a)(3), ENDAUM's and SRIC's Motion to Reopen must also "demonstrate that a materially different result" would have been likely had Dr. Fogarty's evidence been considered initially by the Presiding Officer. As shown below, even had Dr. Fogarty's evidence been considered, this would not have changed the Presiding Officer's ruling that the Intervenors were improperly attacking an NRC regulation in challenging the 0.44 mg/L restoration goal for uranium. *See* LBP-99-30, *supra*, 50 NRC at 115.

Parties in Subpart L adjudicatory proceedings are not authorized to challenge NRC regulations without first obtaining a waiver or exception from the Commission. *See* 10 C.F.R. § 2.1239. As established in ¶ 6 of Mr. McKenney's affidavit attached as Staff Exhibit 1, the challenged secondary groundwater restoration goal for uranium of 0.44 mg/L is derived from -- and based directly on -- limits stated in table 2 of appendix B to 10 C.F.R. Part 20.<sup>21</sup> *See also* 10 C.F.R. § 20.1302(b)(2)(i) (method of showing compliance with annual public dose limits is by demonstrating that annual average concentrations of radioactive material released in liquid effluents "do not exceed the values specified in table 2 of appendix B to part 20"). The sole basis on which the Commission could issue the applicable waiver would be on a showing that:

special circumstances exist so that application of the [challenged] regulation

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<sup>21</sup> ENDAUM and SRIC appear to concede this point, but state that the challenged 0.44 mg/L figure is not a "groundwater restoration standard." Motion to Reopen, at 14-15 n.12. On the other hand, Dr. Fogarty often uses this term in referring to the challenged 0.44 mg/L figure. *See, e.g.*, Fogarty Affidavit, at ¶¶ 8, 11, 12, and 24.

to the subject matter of the proceeding would not serve the purposes for which the regulation was adopted.

10 C.F.R. § 2.1239(b). This requirement is carried over from the rule which has long been applicable in formal proceedings conducted under Subpart G of 10 C.F.R. Part 2. *See* 10 C.F.R. § 2.758(b). *See also Seabrook, supra*, CLI-90-10, 32 NRC at 223 (rulemaking is proper forum in which to challenge Commission regulations, rather than in a licensing hearing).

Neither in their groundwater presentations filed with the Presiding Officer, nor in their Motion to Reopen, have ENDAUM and SRIC made the showing required by 10 C.F.R. § 2.1239(b). Even if Dr. Fogarty's material had been presented to the Presiding Officer, that would not have changed the fact that the 0.44 mg/L uranium level contained in HRI's license is derived directly from NRC regulations in 10 C.F.R. Part 20. Absent a 10 C.F.R. § 2.1239(b) waiver issued by the Commission, the Presiding Officer would have had no choice but to make the legal ruling which he did, *i.e.*, that challenging the 0.44 mg/L restoration goal for uranium constituted an impermissible attack on an NRC regulation. *See* LBP-99-30, *supra*, 50 NRC at 115.

Accordingly, ENDAUM and SRIC have failed to meet the requirements of 10 C.F.R. § 2.734(a)(3). Their Motion to Reopen should, for this reason, be denied.

CONCLUSION

As discussed above, ENDAUM and SRIC have not met the applicable requirements of 10 C.F.R. § 2.734 for three reasons: (1) the Motion to Reopen is untimely, and does not raise an exceptionally grave safety issue; (2) Dr. Fogarty is not a sufficiently qualified expert concerning the health consequences of uranium levels in drinking water; and (3) even if the Presiding Officer had been presented with Dr. Fogarty's affidavit (or the affidavit of a more qualified expert) and the supporting exhibits, this evidence would not have changed his ruling that ENDAUM's and SRIC's challenge to the Staff's 0.44 mg/L restoration goal for uranium was an impermissible attack on an NRC regulation. For all of these reasons, the Motion to Reopen should be denied.

Respectfully submitted,

John T. Hull */RA/*  
Counsel for NRC Staff

Dated at Rockville, Maryland  
this 4<sup>th</sup> day of April 2000

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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In the Matter of )  
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HYDRO RESOURCES, INC. ) Docket No. 40-8968-ML  
P.O. Box 15910 )  
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AFFIDAVIT OF CHRISTEPHER A. MCKENNEY

I, Christopher A. McKenney, being duly sworn, declare as follows:

1. I am competent to make this affidavit, and the factual statements herein are true and correct to the best of my knowledge, information, and belief. The opinions expressed herein are based on my best professional judgment. I have previously given testimony in this proceeding by affidavit, and my qualifications remain the same as stated in my earlier affidavits.

2. This declaration will serve to present my understanding of the health, safety and environmental effects of using 0.44 milligrams per liter (mg/L) as the secondary groundwater restoration goal for uranium, applicable at Section 8 of the *in situ* leach (ISL) mining project of Hydro Resources, Inc. (HRI). This 0.44 mg/L figure is part of HRI License Condition (LC) 10.21. Selection of this figure for use in HRI's license was based on the evaluations discussed at pages 4-27, 4-45 to 4-48, and 4-87, of the February 1997 Final Environmental Impact Statement (FEIS) the NRC Staff prepared in connection with the issuance of HRI's license. I participated in the preparation of the FEIS. *See* FEIS, at 8-1.

3. I will also evaluate some of the comments and conclusions reached by Dr. John D. Fogarty in his affidavit dated March 1, 2000 (Fogarty Affidavit), attached to the March 15 motion to reopen filed by intervenors in this proceeding.

4. As part of its environmental evaluation of HRI's license application, the Staff established both primary goals and secondary goals for restoration of the groundwater in the ISL well fields. *See* FEIS, at 4-27. For each well field, the primary goal for restoration is returning the groundwater to its pre-mining average concentration, for any given parameter. *See id.* *See also* LC 10.21. As secondary goals, the Staff primarily used the U.S. Environmental Protection Agency (EPA) regulations which were in effect. *See* FEIS, at 4-27. The EPA's drinking water regulations do not (and did not at the time HRI's license application was being reviewed) have a codified concentration limit for uranium, but the EPA's National Pollutant Discharge Elimination System sets a 2 mg/L level for release of uranium into surface waters. The State of New Mexico water quality standard for uranium is 5 mg/L. *See* FEIS Table 4.7, at 4-30.

5. The Staff evaluated the appropriateness of using either the 2 mg/L or 5 mg/L uranium standards as the secondary restoration goal for the ISL well fields. Based on

conservative assumptions regarding possible use of certain drinking water sources, both of these standards were rejected because their use could possibly result in individual doses above the annual public dose radiological limit of 100 millirem established by 10 C.F.R. § 20.1301(a)(1). *See* FEIS, at 4-87. Accordingly, the Staff evaluated the lower 0.44 mg/L figure for use as the secondary groundwater restoration goal for uranium, which is derived from table 2 of appendix B of 10 C.F.R. Part 20. I note here that at HRI's Section 8 site, the secondary groundwater restoration goal for uranium of 0.44 mg/L is unlikely to come into play, since current estimations put the mean uranium baseline level there at 1.8 mg/L. *See* FEIS, at 4-48.

6. The effluent concentration limits in table 2 of Appendix B to 10 C.F.R. Part 20 are the average annual concentrations that would result in an individual receiving a yearly dose of approximately 50 millirem (0.5 mSv), and are based on a conservative exposure scenario, in which an individual is assumed to drink two liters of contaminated drinking water per day for one year. Using these assumptions, the effluent concentration limit for natural uranium is  $3 \times 10^{-7}$  micro Curies per milliliter<sup>1</sup> (or 300 pico curies per liter). Uranium is usually reported for laboratory measurements in terms of mass, rather than activity. Footnote 3 of appendix B to 10 C.F.R. Part 20 (at page 378 of the 1999 edition of

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<sup>1</sup> Appendix B to 10 C.F.R. Part 20 uses the computer "E" notation. In this notation, a value of 3E-7 represents a value of  $3 \times 10^{-7}$ . Concentrations in Appendix B are written in terms of activity per volume, rather than mass per volume.

10 C.F.R. Parts 1-50) states that the specific activity of uranium (*i.e.*, how much activity is contained in a mass of uranium) is  $6.77 \times 10^{-7}$  curies per gram of uranium (or  $6.77 \times 10^2$  pico curies per milligram). The Staff converted the Appendix B value for uranium to that used in HRI's license by dividing by the specific activity, thereby deriving the secondary groundwater restoration goal for uranium of 0.44 mg/L contained in LC 10.21 of HRI's license.

7. Accordingly, if following restoration of an ISL well field at Section 8, at which the secondary groundwater restoration goal for uranium of 0.44 mg/L had been achieved, a hypothetical resident were to sink a water well into the former ISL well field, and tap the uranium-bearing ore zones of the Wastewater Canyon aquifer, and drink therefrom two liters of water per day for one year, that resident would only receive approximately one-half of the allowable annual public dose radiological limit of 100 millirem (*i.e.*, 50 millirem).

8. Uranium's chemical toxicity was not taken into account when establishing the Appendix B concentration values. For soluble forms of uranium, chemical toxicity may be the limiting factor for *inhalation* pathways, as opposed to groundwater pathways. *See* 10 C.F.R. Part 20, Appendix B, note 3. To verify that chemical toxicity was not a limiting factor for ingestion of uranium by members of the public, I reviewed the information

provided in the EPA's Integrated Risk Information System (IRIS). The IRIS database states as follows regarding the EPA's chronic oral exposure figure (RfD), which is used in part to establish allowable uranium concentrations:

[The RfD] is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

The 10 C.F.R. Part 20 Appendix B value for uranium is within the uncertainty associated with the RfD.

9. I therefore concluded that a secondary groundwater restoration goal for uranium of 0.44 mg/L would result in minimal impacts to any future population, and was an acceptable limit to use in HRI's license until the EPA codified its drinking water standard for uranium.

10. In ¶ 15 of Dr. Fogarty's Affidavit, he interpreted certain statements I made in my February 1998 affidavit to mean that I considered "renal failure" as the only deleterious effect to protect against with respect to uranium levels in groundwater. It was not my intent to imply therein that "renal failure" was the only effect of concern in selecting the 0.44 mg/L limit for uranium. I acknowledge that use of this term was a poor choice of words on my part. The 0.44 mg/L level minimizes (for those effects that do not have a threshold) or avoids avoids all nephrotoxic effects, not just renal failure. I thus agree with

Dr. Fogarty's conclusion in his ¶ 15 that the NRC should be choosing uranium levels that are known, or at least predicted, not to cause adverse effects.

11. In Mao, *et al.*'s 1995 study (attached to Dr. Fogarty's Affidavit as Exhibit B), the assessment calculated individual exposure by assuming that the concentration of uranium in drinking water and the quantity of water consumed had been constant over the entire time the individual had lived at the current residence. Such a crude exposure metric is a fairly common weakness in epidemiological studies involving lifetime exposures. Mao, *et al.*, was concerned about the inability of the study to establish an actual cause and effect finding. See Exhibit B, at 139 (stating that it is "impossible to determine whether the suspected exposure did, in fact, precede the effect.") Mao, *et al.*, was also concerned about the small sample size of the study (*i.e.*, 100 individuals). Moreover, his final conclusion states in part:

This study provides evidence for the relationship between uranium present in drinking water among humans and microalbuminuria, although the degree of albuminuria does not appear to be clinically significant. A similar study with more precise exposure data and greater sample size to increase statistical power, would be a logical extension to that presented.

Exhibit B, at 139.

12. Considering all of the above, I thus do not believe that the 1995 study, had I been aware of it at the time, would have caused me to change any of the conclusions reached in the 1997 FEIS. I also do not believe that this 1995 study, or any of the other material attached to the Fogarty Affidavit, raises any matters of grave concern regarding the proposed ISL mining at HRI's Church Rock Section 8 site. As noted above, given the already high

Christopher A. McKenney  
April 4, 2000

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baseline levels of uranium there, the primary groundwater restoration goal for uranium would be met there long before the secondary goal of 0.44 mg/L. Moreover, the high baseline level of uranium at Section 8 makes it very unlikely, in my opinion, that anyone in the foreseeable future would choose to dig a water well there even if no ISL mining occurs there.

13. The statements expressed above are true and correct to the best of my knowledge, information and belief.

\_\_\_\_\_  
Christopher A. McKenney /*RA*/

Sworn and subscribed to before me  
this 4th day of April, 2000

\_\_\_\_\_  
Notary Public

My commission expires:\_\_\_\_\_

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

CERTIFICATE OF SERVICE

I hereby certify that an electronic copy of "NRC STAFF'S RESPONSE TO MOTION TO REOPEN AND SUPPLEMENT THE RECORD" (which includes Staff Exhibit 1), prepared for the above-captioned proceeding, has this 4<sup>th</sup> day of April 2000 been transmitted to the Office of the Secretary (SECY) for entry into the NRC's ADAMS system, and for subsequent distribution by SECY to the internal recipients listed below. I also certify that signed paper copies of "NRC STAFF'S RESPONSE TO MOTION TO REOPEN AND SUPPLEMENT THE RECORD" have been served on the external recipients listed below (marked by single asterisks) by U.S. Mail, first class, this 4<sup>th</sup> day of April 2000. Those external recipients marked by single asterisks and a plus sign (+) were also served by electronic mail, this 4<sup>th</sup> day of April 2000:

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