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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, NM 87174	)	ASLBP No. 95-706-01-ML
	)	

INTERVENORS' MOTION TO REOPEN AND SUPPLEMENT THE RECORD

Pursuant to 10 C.F.R. §§ 2.734 and the Commission's general authority to ensure the establishment of a meaningful record in this proceeding, Intervenors Eastern Navajo Diné Against Uranium Mining ("ENDAUM") and Southwest Research and Information Center ("SRIC") hereby request the Commission to reopen and supplement the record of this proceeding to consider new evidence that raises an exceptionally grave safety issue with respect to the licensing of the Crownpoint Uranium Project ("CUP"), an *in situ* uranium leach mine in Crownpoint and Church Rock, New Mexico. This evidence is presented in the attached Affidavit of Dr. John D. Fogarty in Support of Motion to Reopen and Supplement the Record, March 1, 2000 ("Fogarty Affidavit," attached as Exhibit 1).

As demonstrated by Dr. Fogarty's affidavit, relatively recent studies regarding the toxicity of uranium show that kidney damage occurs in humans and animals at much lower doses than assumed by the Nuclear Regulatory Commission ("NRC") Staff when it established a secondary groundwater restoration standard of 0.44 milligrams per liter ("mg/l") for the CUP. The studies cited by Dr. Fogarty provide significant and probative evidence that the 0.44 mg/l

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secondary groundwater restoration standard, which is contained in the CUP license, assumed in the Final Environmental Impact Statement ("FEIS") for the CUP, and approved by the Presiding Officer, poses a serious public health hazard. As demonstrated below, this motion meets the NRC's standard for reopening a closed record.

This Motion is appropriately before the Commission because the hearing record is now closed in the proceeding before the Presiding Officer. The Presiding Officer no longer has jurisdiction to consider a motion to reopen the record in a proceeding where he has issued his final decision and a petition for Commission review of the decision has been filed. Philadelphia Electric Co., (Limerick Generating Station, Units 1 and 2) ALAB-823, 22 NRC 773, 775 (1985). This Motion is appropriately before the Commission.

Factual and Procedural Background

Crownpoint Project

HRI applied for and received a materials license to conduct in situ leach mining on Sections 8 and 17 in Church Rock, New Mexico, and on two sites in Crownpoint, New Mexico, "Unit 1" and "Crownpoint." HRI proposes to process the uranium extracted from each site at its Crownpoint processing facility. HRI plans to construct well fields at each mine site and inject a mining solution composed of bicarbonate ion complexing agents and dissolved oxygen through wells into an ore zone. See FEIS §§ 2.1.1 - 2.1.1.2 at 2-3 and 2-5. Uranium compounds, present in the aquifer in insoluble form, would then become oxidized and react with the lixiviant to form either a soluble uranyl tricarbonate complex or a bicarbonate complex. FEIS § 2.1.1.2 at 2-5. HRI proposes that the uranium enriched pregnant solution would be pumped from production wells to the satellite processing plants for uranium extraction by ion exchange. FEIS § 2.1.1.2 at

2-6.

The "mine zone aquifer" in which mining will take place at all four sites is the Westwater Canyon Member aquifer, an "important regional aquifer." See Intervenors Written Presentation in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to: Groundwater Protection, Vol. 1 at 7-8 (January 11, 1999) (hereinafter "Intervenors' Groundwater Presentation"), quoting FEIS § 3.2.1 at 3-7. The Westwater Canyon Aquifer supplies drinking water to over 10,000 residents from a number of wells, including municipal wells at the Crownpoint mining site and a domestic well within 1.5 miles of the Church Rock mining site. Intervenors' Groundwater Presentation at 8-9.

Licensing Proceeding

Intervenors have raised a number of concerns about the lack of adequate groundwater protection afforded by the license, including the license's establishment of a secondary groundwater restoration standard for uranium of 0.44 mg/L. They have also challenged the appropriateness of assuming a secondary restoration standard of 0.44 mg/l in the FEIS for the Crownpoint Project. FEIS § 4.3.1 at 4-27. Intervenors presented legal arguments and factual evidence demonstrating that the 0.44 mg/l standard is not protective of public health and is inconsistent with other agencies' standards and guidelines for the protection of groundwater. See Intervenors' Groundwater Presentation at 49-51; Written Testimony of Dr. Richard J. Abitz at 45 (January 8, 1999).[1]

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[1] For instance, the U.S. Environmental Protection Agency ("EPA") has established a health-based groundwater restoration standard of 30 pCi/l (equivalent to 0.044 mg/l) for inactive uranium processing sites, and the National Research Council's Safe Drinking Water Committee recommends a Suggested No-Adverse Response Level of 0.035 mg/l for uranium in drinking

In his Partial Initial Decision on groundwater protection issues, the Presiding Officer rejected the Intervenors' challenge to the use of a 0.44 mg/l secondary groundwater restoration standard. In ruling on the adequacy of the FEIS to satisfy the National Environmental Policy Act ("NEPA"), the Presiding Officer ruled that to the extent the Intervenors challenge the 0.44 mg/l restoration standard, "they are impermissibly challenging the validity of an NRC regulation," and that in addition EPA would have to be satisfied with the effect of the project on drinking water quality, thus providing an important additional safeguard. 50 NRC at 115. In reaching this decision, the Presiding Officer failed to address the Intervenors' arguments regarding the adequacy of the 0.44 mg/l standard to protect public health.

Intervenors appealed this aspect of LBP-99-30 in their Petition for Review of Partial Initial Decisions LBP-99-18, LBP-99-19, LBP-99-30 (September 3, 1999) ("Petition for Review").[2] Their petition for review is pending.

On February 9, 2000, the Secretary of the Commission served on the parties to this proceeding a copy of a January 28, 2000, letter to the NRC Commissioners and the Presiding Officer from Dr. John Fogarty, a physician in Crownpoint (Letter from John D. Fogarty, M.D. to the NRC Commissioners and the Hon. Peter B. Bloch, Administrative Judge, hereinafter "Fogarty Letter").

Dr. Fogarty's letter was of great concern to the Intervenors, because it provided significant new evidence that the uranium levels found acceptable by the NRC Staff and the

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water. These proposed and recommended standards are ten times stricter than the standard in HRI's license. See Intervenors' Groundwater Presentation at 49 and fn. 16.

[2] See Petition for Review at 28-31.

Presiding Officer for restoration of groundwater quality are, in fact, quite toxic to human health. Thes studies provide well-documented evidence that chronic amounts of uranium ingestion cause toxic effects on kidney function at levels considerably below 0.44 mg/l. Therefore, Intervenors contacted Dr. Fogarty and requested that he submit the conclusions of his letter in affidavit form to the Intervenors, along with the supporting documentation, so that Intervenors might properly submit a motion to re-open and supplement the record of this hearing for consideration of his information.

On February 15, 2000, HRI filed HRI's Objection to Attempt to Supplement the Record, which argued that Dr. Fogarty's letter constituted an impermissible attempt to supplement the record of this proceeding. The Intervenors have not opposed HRI's Motion, because it is clear that the letter is not sponsored by any admitted party to the proceeding and does not address the standard for reopening a closed record. This pleading re-submits the information presented by Dr. Fogarty in his affidavit, and addresses the Commission's standard for reopening the record.[3]

ARGUMENT

A. Standard for Reopening the Record.

Intervenors submit that it is appropriate to use the standards set forth in 10 C.F.R. § 2.734 to determine whether to reopen a closed record in a materials licensing proceeding. See Radiology Ultrasound Nuclear Consultants, P.A. (Strontium-90 Applicator), LBP 88-3, 27 NRC 220, 222-23 (1988). In relevant part, that regulation provides as follows:

(a) A motion to reopen a closed record to consider additional evidence will not be granted

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[3] Intervenors note that Dr. Fogarty's Affidavit amplifies and augments some of the information and views presented in his letter.

unless:

(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 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.

10 C.F.R. § 2.734(a)-(b).[4] Directly applicable to the present situation, when a motion to reopen raises issues of great safety significance or gravity, the motion may be granted if the moving papers are "strong enough, in light of any opposing filings, to avoid summary disposition." Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB- 138, 6 AEC 520, 523 (1973). A motion to reopen an administrative record may rest on evidence that came into existence after the hearing closed. Pacific Gas and Electric Co., (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-898, 11 NRC 876, 879 n.6 (1980). Conversely, "a matter may be of such gravity that the motion to reopen should be granted notwithstanding that it might have been presented earlier." Vermont Yankee, supra, 6 AEC at 523.[5] Intervenors submit that this motion and the supporting Fogarty Affidavit satisfy this standard.

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[4] Subsection (d), which establishes additional standards for motions that are related to issues that have not previously been litigated, is not applicable here.

[5] Differing analyses by experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted. Houston Lighting and Power Co. (South Texas Project, Units 1 and 2), 22 NRC 795, 799 (1985) (citation omitted). Intervenors submit that none of the information cited by Dr. Fogarty is in this proceeding's record.

B. The Motion Raises an Exceptionally Grave Safety Issue

Intervenors concede that this motion is not "timely" under 10 C.F.R. § 2.734, because it is being submitted after the issuance of the Presiding Officer's Final Partial Initial Decision for this phase of the proceeding.[6] Wisconsin Electric Power Co. (Point Beach Nuclear Plant, Unit 2), 5 AEC 376 (1972). However, an untimely motion to reopen the record may be granted, if the movant meets the increased burden of demonstrating that the motion raises an "exceptionally grave" issue rather than just a significant issue. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-886, 27 NRC 74, 76, 78 (1988), citing 10 C.F.R. § 2.734(a)(1). Intervenors respectfully submit that this motion raises just such a grave issue.

Moreover, the fact that the studies cited by Dr. Fogarty were published before the close of the evidentiary record in this case should not be held to bar this motion to reopen. The Intervenors could not have presented these studies in the hearing without the sponsorship of Dr. Fogarty, who did not move to Crownpoint or take up his investigation of these studies until after August of 1999, when the record had already closed. In any event, as the Appeal Board recognized in Vermont Yankee, ALAB-138, evidence that "might have been presented earlier" can be relied to reopen a closed record if it is of "such gravity" that reopening is warranted. 6

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[6] While not "timely" under the rules, this motion is being filed as quickly as possible under the circumstances. Intervenors have attempted to bring to the NRC's attention important, overlooked information as soon as possible after it was brought to their attention. Dr. Fogarty has also performed his own investigation with reasonable speed. As he notes in his testimony, Dr. Fogarty moved to Crownpoint to practice medicine in August, 1999, when found out about the project because of significant local interest. In the five months which followed, he conducted a literature research on uranium's chemical toxicity, learned the bases of the NRC's groundwater restoration standard for the HRI project, and submitted his conclusions to the NRC. Both Dr. Fogarty's effort and this Motion by the Intervenors were accomplished in a bare six months.

AEC at 523. See also Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358, 365 note 10 (1973) ("if the problem raised presents a sufficiently grave threat to public safety, a board should reopen the record to consider it even if it is not newly discovered and could have been raised in timely fashion").

Both the FEIS and the HRI license rely on the 0.44 mg/l groundwater restoration standard as being appropriate and protective of human health. The FEIS stated in relevant part that "[t]his concentration was obtained from 10 CFR part 20; it is suitable for unrestricted release of natural uranium to water and is below the State of New Mexico primary drinking water standard for uranium." FEIS § 4.3.1 at 4-27. License Condition 10.27, in which the NRC requires HRI to relocate the Crownpoint municipal supply wells to a location where the groundwater does not exceed 0.44 mg/l uranium as a result of in-situ leach mining at Crownpoint and Unit 1, clearly shows that the NRC staff uses the 0.44 mg/l figure as a safeguard for public health.

Dr. Fogarty's testimony and supporting documentation shows not only that the 0.44 mg/l restoration standard for uranium for the HRI project is inadequate to protect human health, but that chronic exposure to these uranium levels in drinking water would be highly toxic to human health. Moreover, Dr. Fogarty's research reveals that the groundwater restoration standard for uranium for the HRI project of 0.44 mg/l is based on health studies that are profoundly outdated and flawed. As a result, the NRC has adopted a groundwater restoration standard for the CUP that is worse than inadequate, and indeed quite dangerous.

As Dr. Fogarty concludes, the NRC Staff's use of "renal failure" as a criterion for setting a uranium standard is "appalling and medically unacceptable," in view of the "enormous spectrum of disease that occurs before renal failure." Fogarty Affidavit at 9. Moreover, the

studies the NRC relied upon for the 0.44 mg/l standard are "methodologically flawed, poorly generalizable to human populations exposed to chronic ingestion of uranium, and outdated in light of more modern studies."[7] Fogarty Affidavit at 9-10. The studies range in age from fifty (50) years old to the most recent, a study performed twenty seven (27) years ago. Fogarty Affidavit at 9-11. As Dr. Fogarty points out, these studies looked primarily at animal populations and very small studies of humans. Id. at 11. Moreover, the studies evaluated exposure to acute doses, not to chronic doses as would be more appropriate for setting a standard in drinking water. Id. All of the studies contain "at least two implicit assumptions that should be questioned in light of newer findings, namely that (1) there is no difference between acute and chronic exposure to uranium, and (2) valid and sensitive biomarkers for disease were used." Id.

These newer findings appear in 1995 and 1998 reports of studies conducted in the early-to-mid-1990's by Mao, Zamora, and Gilman, researchers associated with the Laboratory Centre for Disease Control of Health Canada and Ottawa and the Ottawa Department of Health.[8] The studies were reported in 1995 and 1998. These several studies examined human populations exposed to chronic, small doses of uranium. See Fogarty Affidavit, Exhibits B-F. The Mao and

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[7] Dr. Fogarty evaluates each individual study at pages 9-11 of his Affidavit.

[8] Fogarty Affidavit at 11-16, citing Mao Y, et al., (1995), Inorganic Components of Drinking Water and Microalbuminuria, *Environ. Res.* 71:135-140; Zamora ML, et al., (1998), Chronic Ingestion of Uranium in Drinking Water: a Study of Kidney Bioeffects in Humans. *Toxicological Sciences*, 43:68-77; Gilman AP, et al., (1998a.), Uranyl nitrate: 28-day and 91-day Toxicity Studies in the Sprague-Dawley Rat, *Toxicological Sciences*, 41:117-128; Gilman AP, et al., (1998b.), Uranyl Nitrate: 91-day Toxicity Studies in the New Zealand White Rabbit. *Toxicological Sciences*, 41:129-137; Gilman AP, et al., (1998c.), Uranyl Nitrate: 91-day Exposure and Recovery Studies in the New Zealand White Rabbit, *Toxicological Sciences*, 41:138-151.

Zamora studies (Exhibits B and C to Dr. Fogarty's Affidavit, respectively) were performed on healthy human populations that were exposed, over long periods of time, to low levels of uranium in water (and, to a lesser extent, in food). The Mao study found potentially serious indications of renal problems in the exposed population at water with levels of uranium as low as 0.014mg/L, thirty one (31) times lower than the NRC groundwater restoration standard for uranium in this proceeding. Fogarty Affidavit at 12.

Zamora also assessed bioindicators of kidney function in 50 human subjects who were exposed to varying concentrations of uranium in their drinking water from periods range between 1 and 59 years. Fogarty Affidavit at 13. Researchers selected 30 subjects from a Nova Scotia community who drank well water containing uranium concentrations ranging from 0.002 mg/L to 0.780 mg/L and 20 subjects from Ottawa whose drinking water, which was obtained from a municipal distribution system, had a uranium concentration of 0.00002 mg/L, or 0.02 μg/L. The Nova Scotia subjects were categorized as the "high-exposure group" while the Ottawa subjects were categorized as the "low-exposure group." About half of the subjects in the high exposure group drank water exceeding the Canadian health guideline of 100 μg/l (i.e., 0.1 mg/l).

Zamora and colleagues analyzed urine samples collected from the study subjects for four biomarkers of kidney function and four biomarkers of cellular toxicity. They found an association between increasing uranium ingestion and the presence of elevated levels of urinary glucose, alkaline phosphatase ("ALP," an enzyme localized in the brush-border membranes of the proximal tubules) and β_2-microglobulin (a low-molecular weight protein that is reabsorbed and digested in the lining of the proximal tubules). These biomarkers are indicators of injury to the kidney's proximal tubules, which process, collect and transmit wastes from the blood. This

association was observed only in the *high-exposure group* in which the subjects had total daily uranium consumption from both food and water ranging from 3 to 570 μg, with the percentage of uranium intake through water varying from 31% to 98%. Abnormally high urinary glucose was observed in subjects having a total daily uranium consumption as low as 21 μg, and abnormal levels of the enzyme ALP were observed in subjects having a total daily uranium consumption of 220 μg.

As Dr. Fogarty testifies, the Mao and Zamora studies are important, because (a) they show the effects of chronic ingestion of low levels of uranium in drinking water, (b) they showed signs of renal injury at concentrations of uranium far below 0.44 mg/l, and (c) they employed more sensitive markers of injury than those studies cited by and relied upon by the NRC.

Three other studies by A.C. Gilman et al. (Exhibits D-F to Dr. Fogarty's Affidavit) were performed on rats and rabbits using sensitive indicators of biological damage. Five groups of 30 animals were exposed for 28 to 91 days to drinking water containing uranium concentrations ranging from 0.96 mg/l to 600 mg/l. Lesions developed in the kidneys and livers of the experimental rats in all exposure groups; lesions were even observed in the renal tubules and glomeruli (sub-organs of the kidney) in the lowest exposed rat group. Fogarty Affidavit at 15-16. Dr. Fogarty notes that Gilman and colleagues concluded, "the ability of uranium to produce specific tubular injury followed by basement membrane injury at relatively low doses in even a small proportion of exposed animals suggests that human exposure to soluble uranium over prolonged periods needs to be monitored." Fogarty Affidavit at 16. See also Exhibit F, Gilman et al., 1998c, at 151.

Moreover, Dr. Fogarty presents evidence that several national and state health and

environmental agencies have reviewed the current and historical literature on the chemical toxicity of uranium and are in the process of revising downward their existing standards or guidelines on allowable levels of uranium in drinking water to levels that are orders of magnitude below 0.44 mg/l.[9] Fogarty Affidavit at 16.

For example, as Dr. Fogarty discusses at pages 18 and 19 of his affidavit, in 1993, the World Health Organization ("WHO") adopted a uranium guideline for drinking water of 140 μg/l, based on the radiological characteristics of uranium. In 1995, the organization's coordinating committee for updating the 1993 and 1996 drinking water guidelines recommended revising the 1993 uranium level in light of "new data on the chemical toxicity of uranium." Citing the 1995 study by Mao, et al., and prepublication versions of Gilman's papers, WHO in 1998 published a provisional uranium guideline of 2 μg/l (or 0.002 mg/l), "based on associations for subclinical renal effects reported in preliminary epidemiological studies." (*Id.* at 91.).[10]

Dr. Fogarty also provided a table for the NRC's consideration (Fogarty Affidavit at 20, reproduced herein) that shows the NRC's proposed uranium restoration standard of 0.44 mg/l for the Crownpoint Uranium Project exceeds existing limits and guidelines for uranium in drinking water, and will exceed by an even larger margin new and revised regulations and guidelines that are likely to be adopted in the coming year or two.

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[9] Fogarty Affidavit at 16-19. These organizations include the U.S. Environmental Protection Agency, California EPA's Office of Environmental Health Hazard Assessment , the Canadian national health agency, Health Canada, and the World Health Organization.

[10] Dr. Fogarty attached to his affidavit as "Exhibit I" a copy of the relevant addendum to the WHO drinking water guidelines that includes a discussion of the organization's bases for the revised uranium level.

Comparison of NRC's Uranium Restoration Standard With Other Agencies' Uranium-In-Drinking Water Guidelines and Regulations

Agency/Institution	Existing Limits and Guidelines for Uranium in Drinking Water	Proposed or Revised Limits and Guidelines for Uranium in Drinking Water
USNRC (for CUP)	0.44 mg/l	0.44 mg/l
USEPA	none	0.02 mg/l, or 30 pCi/l
California DHS; Cal EPA	20 pCi/l	0.2 pCi/l
Health Canada	0.1 mg/l, or 100 μg/l	0.01-0.02 mg/l, or 10-20 μg/l
World Health Organization	0.14 mg/l, or 140 μg/l	0.002 mg/l, or 2 μg/l

It is indisputable that the trend in standards setting for uranium in drinking water among regulatory agencies is a steady lowering of allowable levels in recognition of new evidence of increasing risk of human health impairment. The NRC has chosen to ignore these developments with regard to the CUP license, which would allow HRI to mine uranium in a rare, precious groundwater source in the arid West. Dr. Fogarty's demonstration that the CUP's uranium groundwater restoration standard utterly fails to protect human health by current standards raises an exceptionally grave issue rather than just a significant issue. See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-886, 27 NRC 74, 76, 78 (1988), citing 10 C.F.R. § 2.734(a)(1).

C. A Materially Different Result Would Have Been Likely If Intervenors' New Evidence Had Been Considered.

One of the factors for reopening a record is whether a different result might have been reached had the newly proferred material been considered initially. Pacific Gas and Electric Co., (Diablo Canyon Nuclear Power Plant, Units 1 and 2), 11 NRC 876, 879 (1980). Intervenors are

confident that had Dr. Fogarty's testimony and supporting material been available during the course of this proceeding in 1998 and 1999, such testimony and studies would have made the NRC's groundwater restoration standard for uranium indefensible.

In his Partial Initial Decision on groundwater protection issues, the Presiding Officer rejected the Intervenors' challenge to the use of a 0.44 mg/l secondary groundwater restoration standard without directly addressing the question of the applicability or appropriateness of using the 0.44 mg/l standard for the CUP. LBP-99-30, Partial Initial Decision Concluding Phase I (Groundwater, Cumulative Impacts, NEPA, and Environmental Justice), 50 NRC 77, 115 (1999). In ruling on the safety-related aspects of the case, for example, the Presiding Officer couched his decision in terms of what restoration levels HRI was likely to be able to achieve.[11] In ruling on the environmental aspects of the case, the Presiding Officer found that the Intervenors had made an improper challenge to the "NRC standard of 0.44 mg/l."[12] 50 NRC at 115. Thus, due to his

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[11] In the case of Church Rock, the Presiding Officer found that uranium levels in groundwater vary from 10.9 to 0.002 mg/l, with a mean of 1.8 mg/l, and that therefore HRI was unlikely to be able to achieve the license's 0.44 mg/l standard. 50 NRC at 100. In the case of Crownpoint, the Presiding Officer found that uranium concentrations are a range of 0.021 to 0.0, with a mean of 0.005 mg/l, and that the EPA standards "should be attainable," although the Presiding Officer also found that "that topic is not part of this phase of the case." 50 NRC at 101. It should be noted that Intervenors' challenged the inflated baseline for uranium in groundwater adopted by the NRC Staff and HRI. See Intervenors Groundwater Presentation at 28-29, 47-48, and Testimony of Dr. Richard Abitz filed January 3, 1999, at 10-25.

[12] The Intervenors have appealed both the safety and environmental rulings. See Intervenors' Petition for Review at 28-31 (September 3, 1999). The Presiding Officer's ruling that 0.44 mg/l uranium levels will not be approached during restoration sidesteps the operative legal fact that a 0.44 mg/l limit is contained in HRI's license. Moreover, the Intervenors dispute the Presiding Officer's ruling that they have attacked an NRC standard: the NRC's regulations contain no regulatory standard for groundwater restoration that the Intervenors could challenge. Groundwater restoration standards must be determined on a case-specific basis. Although the 0.44 mg/l standard apparently is derived from Appendix B to 10 C.F.R. Part 20, it is not a

legal errors, the Presiding Officer did not explicitly address the appropriateness of the .044 mg/l secondary restoration standard that was developed by HRI and the NRC Staff for the HRI license. Intervenors submit that, had the Presiding Officer dealt squarely with the issue of the reasonableness of the 0.44 mg/l standard, and had he considered the evidence submitted in support of this Motion, he would not have approved the issuance of the HRI license with respect to the secondary groundwater restoration standard. Basing the decision on "achievability" makes irrelevant the existence of a standard for groundwater restoration and fails to address appropriateness of the standard that is applied.

Intervenors submit that the Presiding Officer would have had to address the appropriateness of the uranium groundwater restoration standard if confronted with Dr. Fogarty's affidavit and supporting information. The applicability of this information to the public health effects of the CUP is indisputable. Dr. Fogarty's affidavit and supporting exhibits clearly show that the CUP's groundwater restoration standard for uranium is not protective of human health. Such information would have likely resulted in a decision rejecting the HRI license and FEIS for their inclusion of a grossly inadequate groundwater restoration standard. Clearly, this would have constituted a materially different result.

D. The Motion is Adequately Supported by Dr. Fogarty's Affidavit.

1. The Fogarty Affidavit Contains Relevant, Reliable, and Well-Supported Evidence.

The Appeal Board has held that new material in support of a motion to reopen a closed

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groundwater restoration standard. Therefore, its applicability as a groundwater restoration standard in this case is open to challenge.

record must be set forth with a degree of particularity in excess of the basis and specificity requirements contained in 10 CFR 2.714(b) for admissible contentions. Pacific Gas & Electric Co., (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-775, 19 NRC 1361, 1366-67 (1984) (footnote omitted). Such supporting information "must be more than mere allegations; it must be tantamount to evidence" that is relevant, material, and reliable. Id.. See also Vermont Yankee, ALAB-138, 6 AEC at 523 (evidence must be sufficient to survive summary disposition). Dr. Fogarty's testimony meets this standard by demonstrating the inadequacy of the 0.44 mg/l uranium restoration standard through well-documented, peer-reviewed, timely, and relevant studies. All relevant supporting material, including any material available to support a motion to reopen the record, is attached. See Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-753, 18 NRC 1321, 1324 (1983). Moreover, Dr. Fogarty is prepared to testify orally to answer any questions on the record.

2. Dr. Fogarty Is Qualified to Testify on the Issues He Raises.

Section (b) of 10 C.F.R. § 2.734 directs that the motion be accompanied by an affidavit(s) given by an individual knowledge of the facts alleged or in disciplines appropriate to the issues raised. See also Public Service Co. of New Hampshire, et al. (Seabrook Station, Units 1 and 2) ALAB-915, 29 NRC 427, 431 (1989) Dr. Fogarty is eminently qualified and competent to render an opinion on the sufficiency of the groundwater restoration standard for the HRI project as it relates to the chemical toxicity of uranium. Dr. Fogarty is a practicing M.D. in internal medicine with significant experience in epidemiological issues for the New Mexico Department of Health. He is presently completing his master's degree in Public Health at the University of New Mexico. Dr. Fogarty has been involved in both basic science and clinical research for more

than 15 years, some of that time specializing in care of those with diabetes and other impairments of renal functions. He, therefore, is well-qualified to assess the studies and literature regarding the chemical toxicity of chronic, low doses of uranium in drinking water.[13]

Dr. Fogarty also supports his affidavit with highly competent, detailed and peer-reviewed studies of the health effects of chronic uranium exposure. These studies demonstrate that the NRC relied on extraordinarily stale, outdated information when it set the groundwater restoration standard for HRI. The studies provided by Dr. Fogarty have directly impacted a number of existing and proposed regulatory standards and guidelines for uranium in drinking water — from those of Health Canada and the California EPA to the World Health Organization. By themselves, the studies warrant further review by the Commission to evaluate whether there is any rational basis whatsoever for a setting a secondary groundwater restoration standard of 0.44 mg/l for an aquifer that constitutes an existing and potential source of drinking water.

Conclusion

It is imperative that the Commission reopen the record of this proceeding to consider the extremely grave safety implications of Dr. Fogarty's affidavit with respect to the licensing of the CUP. Dr. Fogarty's evidence shows not only that the 0.44 mg/l secondary groundwater restoration standard for the CUP is based on poor and outdated science, but that such high uranium levels are demonstrably toxic to human health. The NRC staff is wrong to have accepted a uranium "cleanup" level that is at least 20 times greater than the level of uranium in drinking water that has been shown to cause kidney impairment in chronically exposed

[13] Dr. Fogarty's resume is attached as exhibit A to the Fogarty Affidavit.

individuals. If the secondary groundwater restoration standard of 0.44 mg/l for the CUP remains in effect after the presentation of this information, the NRC will have failed to follow Congress's clear instruction that no license shall be granted that would be inimical to the health and safety of the public. 42 U.S.C. § 2209.

HRI will not be prejudiced by the granting of this motion. HRI could not commence mining tomorrow even if it desired to do so. HRI does not have a valid aquifer exemption from the U.S. Environmental Protection Agency ("EPA") under the Safe Drinking Water Act. The Intervenors submit that the fact that the EPA also has regulatory responsibilities for protecting groundwater with respect to the CUP does not absolve the NRC of its own independent responsibility to protect public health and safety and the human environment. (See Intervenors' Motion to Supplement the Record, at 1 (January 27, 2000); and License Condition 9.14 which states, "Prior to injection of lixiviant, the licensee shall obtain all necessary permits and licenses from the appropriate regulatory authority.").[14] Further, as of March 13, 2000, the market price of uranium is currently $9.40 per pound for non-Commonwealth of Independent States ("CIS") uranium and $7.40 per pound for CIS-origin uranium.[15] HRI has stated that they may not profitably mine unless the uranium market is at least $15.70 per pound.[16]

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[14] HRI is extending the litigation process regarding the aquifer exemption under the Safe Drinking Water Act. HRI has requested the United States Court of Appeals for the Tenth Circuit consider *en banc* HRI, Inc. v. Environmental Protection Agency, No. 97-9556 (January 6, 2000). HRI alerted that the Commission that they planned on making such a request. See HRI's Response to Motion to Supplement the Record, at 1 (February 7, 2000).

[15] Information from the Ux Website, www.exc.com/top_review.htlm. Ux reported the Nuclear Fuel two-week range (as of 3/6) as $8./80-$9.30 for restricted uranium and $7.10-$7.50 for unrestricted (i.e., non-CIS and CIS-origin uranium, respectively).

[16] 50 NRC at 113 (1999).

The licensing of the CUP hinges on the NRC's seriously flawed analysis of uranium toxicity. Such a fundamentally defective and dangerous license should not be allowed to stand unexamined in light of Dr. Fogarty's compelling new evidence. Accordingly, Intervenors respectfully submit that the record of this proceeding should be reopened for the purpose of considering Dr. Fogarty's evidence.

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March 15, 2000

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	)	ASLBP No. 95-706-01-ML
Rio Rancho, NM 87174	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that on March 15, 2000, I caused to be served copies of the foregoing:

MOTION TO SUPPLEMENT THE RECORD

upon the following persons by U.S. mail, first class, and in accordance with the requirements of 10 C.F.R. § 2.712. Service was also made via e-mail to the parties marked below by an asterisk. The envelopes were addressed as follows:

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