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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

OFFICE OF SECRETARY  
RULEMAKING AND  
ADJUDICATIONS STAFF

Before Administrative Judges:  
Peter B. Bloch, Presiding Officer  
Thomas D. Murphy, Special Assistant

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In the Matter of: )  
)  
)

HYDRO RESOURCES, INC. )  
2929 Coors Road, Suite 101 )  
Albuquerque, NM 87120 )  
\_\_\_\_\_ )

Docket No. 40-8968-ML  
ASLBP No. 95-706-01-ML

HYDRO RESOURCES, INC.'S REPLY TO INTERVENORS' RESPONSE TO  
LBP 99-15 MEMORANDUM AND ORDER (QUESTIONS CONCERNING RADIOACTIVE  
AIR EMISSIONS)

I. INTRODUCTION

Hydro Resources, Inc. ("HRI") respectfully submits the following reply to Eastern Navajo Diné Against Uranium Mining ("ENDAUM") and Southwest Research and Information Center ("SRIC") (hereinafter "Intervenors") April 7, 1999 response to LBP 99-15 Memorandum and Order (Questions Concerning Radioactive Air Emissions), dated March 18, 1999 (hereinafter, "Memorandum"). In LBP 99-9, the Presiding Officer posed five (5) questions to the parties<sup>1</sup> relating to Intervenors' allegations regarding air emissions contained in their written presentation of January 11, 1999. Specifically, the Presiding Officer expressed concern regarding Intervenors' claim that "HRI and NRC Staff fail to provide reasonable assurance that radioactive emissions from the Crownpoint Project will be maintained within the regulatory

1 The Presiding Officer's question regarding whether the FEIS adequately addressed the combined impacts of radiation from the project and from elevated radiation in the area of the project need only be addressed by NRC Staff as HRI and ENDAUM/SRIC have already submitted a responsive discussion. See Mem. at 11.

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limits in 10 C.F.R. Part 20 . . . as existing non-background levels of radiation at the Church Rock [sic] already exceed regulatory limits, thus precluding the addition of a new source that would further jeopardize public health and safety.” See Mem. at 2. In addition, the Presiding Officer expressed concern regarding Intervenors’ assertion that the FEIS “misrepresents, distorts, or fails to disclose key information about the significant impacts of airborne emissions . . . .” See LBP 99-15. HRI, the Staff and Intervenors responded to the Presiding Officer’s questions on April 7, 1999. See Hydro Resources Inc.’s Response to LBP 99-15 Memorandum and Order (Questions Concerning Radioactive Air Emissions) (April 7, 1999) (“HRI’s Response”).

## II. DISCUSSION

As discussed in HRI’s Response to LBP 99-15, Intervenors’ allegations and supporting opinions raise the issue of whether HRI and NRC Staff correctly addressed potential radiation exposure resulting from operations at Church Rock Section 8. Intervenors’ concern, more specifically, is whether HRI’s operations at Church Rock Section 8 will cause the total effective dose equivalent (“TEDE”) to the individual likely to receive the highest dose from the licensed operation to exceed the annual dose limit. See 10 C.F.R. §§ 20.1301, 20.1302(b); Mem. at 10; HRI’s Response at 2. As HRI explained in its initial brief dated February 19, 1999, and again in its response to questions, Intervenors’ concern is based on their misunderstanding of the regulatory definition of “background” radiation.

This conclusion is confirmed by the fact that in their original pleading, Intervenors, relying on the testimony of Bernd Franke, complained that dose calculations in the Environmental Report (“ER”) and FEIS, excluded contributions from sources of radon and

gamma radiation at Church Rock Section 8 by “mischaracterizing them as natural background.” Mem. at 2; Intervenors' Brief at 8 (emphasis added). Similarly, in their response to questions, Intervenors dedicate half of their brief to an attempt to explain “background” radiation and then rely upon that definition for the conclusions presented in the remaining pages of their pleading, including the “technical analysis” section at pp. 6-8, their answer to question concerning the TEDE at pp. 8-10, and the conclusions reached by Franke referenced at pp. 11 and 12. Perhaps most importantly however, the validity of Franke’s testimony turns on the definition of “background” as his calculations and conclusions are based on the fact that “[he] believe[s] that doses from other source and byproduct materials not regulated by the Commission. . . . must also be accounted for in the compliance assessment.”<sup>2</sup> Affidavit of Franke at 6. Thus, Intervenors’ complaint, their response to questions, and the conclusions contained in their supporting testimony all hinge on the legal definition of “background radiation.”<sup>3</sup>

10 C.F.R. § 20.1301 and the definition of “background radiation” set forth at 10 C.F.R. §§ 40.4 and 20.1003 govern our inquiry. See Mem. at 5-6. 10 C.F.R. § 20.1301 states:

- (a) Each licensee shall conduct operations so that--
  - (1) The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 millisievert) in a year, exclusive of the dose contributions from background radiation . . . .

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2 Franke states at p. 6 of his testimony that radiation releases from source and byproduct materials from prior uranium mining and milling activities in the Church Rock area contribute in excess of 0.2 pCi/l to the TEDE. For the reasons discussed below, Franke’s inclusion of these releases in the TEDE is based on a misinterpretation of the law; therefore, the 0.2 pCi/l that Franke refers to should not have been included in his TEDE calculation.

3 It should be noted here that as a legal issue, the Presiding Officer should grant no deference to Franke’s legal interpretation of the definition of “background” radiation and what should or should not fall within that definition. The definition is not a scientific matter but is a legal one. Franke is not an attorney and Intervenors have not offered any evidence as to Franke’s statutory and regulatory interpretation expertise (typically the role of lawyers) or why his legal interpretations should be granted deference.

(emphasis added); Mem. at 6. As the Presiding Officer pointed out in LBP 99-15, “this definition places a limit on the “total effective dose equivalent” and “then defines a class of contributions to dose that are excluded,” e.g., background radiation. Based on this fact, the Presiding Officer concluded that “if the source of a dose is not excluded then it is included in the total effective dose equivalent from licensed operations, for the purpose of complying with 10 C.F.R. §§ 20.1301 and 20.1302.” Id.

Since background radiation is excluded from the TEDE, it is important to understand the legal definition of background when calculating the TEDE for purposes of determining whether a project will be in compliance with NRC regulations. The regulatory definition of background radiation is:

“Background radiation” does not include radiation from source, byproduct, or special nuclear materials regulated by the Commission.

10 C.F.R. § 40.4 and 10 C.F.R. § 20.1003 (emphasis added). Thus, contrary to Intervenors’ assertions and the opinions of their experts, “background” radiation does not include radiation from source or byproduct material that is regulated by the Commission. If source or byproduct material is regulated by the Commission, it does not fall within the definition of background radiation and must be considered when calculating the TEDE. Conversely, radiation emanating from source or byproduct material not regulated by the Commission is background and is not to be included in the TEDE calculation.

Intervenors and their experts continue to ignore the plain language of the regulation with respect to the exemption from the definition of background for source, by product and special nuclear material regulated by the Commission. Intervenors’ reading is incorrect because as

pointed out in HRI's Response, Intervenor's reading renders "regulated by the Commission" "mere surplusage, entirely without meaning." Marbury v. Madison, 5 U.S. 137 (1803); Jay v. Boyd, 35, U.S. 345 (1956).<sup>4</sup>

As indicated in HRI's previous filings, there are no source, byproduct or special nuclear materials regulated by the Commission at the Church Rock Section 8 site.<sup>5</sup> See Pelizza Affidavit at E1. Accordingly, any radiation from source material, byproduct material or special nuclear material located at Church Rock Section 8 falls within the definition of "background radiation" and should be excluded from the calculation of the TEDE. For this reason, HRI and the Staff properly did not include radiation from source, byproduct material, or special nuclear material in their calculation of the TEDE.

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4 Intervenor's argue that HRI's interpretation regarding exposure from multiple sources is at odds with the purpose of 10 C.F.R. Part 20 (Int. Resp. at 3), the Commission's response to comments (Int. Resp. at 3-4), and the Commission's interpretation of its regulations when proposing a 25 mrem/y limit for the waste repository at Yucca Mountain, Nevada (Int. Resp. at 5). Intervenor's ignore the fact that the purpose of Part 20 is to "control the receipt, possession . . . of licensed material by any licensee in such a manner that the total dose to an individual (including exposures to licensed and unlicensed radioactive material and from radiation sources other than background) does not exceed the standards . . . in this part." (10 C.F.R. § 20.1001(b)(emphasis added). Similarly, the response to comments and the proposed Yucca Mountain limit both exclude the dose contribution from background radiation. See 62 Fed. Reg. 39058, 39062 (July 21 1997) (" . . . the draft EPA Federal Radiation Protection Guidance (FRG) indicates that the combined radiation doses incurred in any single year from all sources of exposure (excluding medical and natural background) should not normally exceed 1 mSv/y"), and 64 Fed. Reg. 8640, 8644 (Feb. 22, 1999) (Part 20 requires "dose to the members of the general public to not exceed a [TEDE] 1mSv per year exclusive of the dose contribution from background radiation . . ." and, " International guidance on dose limits suggests establishing constraint limits for specific sources . . . to ensure that exposure to members of the public from all sources, excluding background radiation, is less than the public dose limit.").

5 While there may be materials at the Church Rock Section 8 site meeting the definition of source material, they are not presently, nor can they be, regulated by the Commission as the NRC does not regulate natural outcrops of uranium or thorium nor does it regulate mining activities or mine wastes. See NUREG-0706, Final Generic Environmental Impact Statement on Uranium Milling (Sept. 1980) at A-94. Uranium ore only becomes material for which an NRC license is required "after removal from its place of deposit in nature." Atomic Energy Act, Section 62, 42 U.S.C. § 2092; see also April 28, 1980, NRC legal opinion, Attachment A, at 3-4 and n.6, attached Exhibit G to HRI's February 11, 1999, presentation. Moreover, any radioactive borings resulting from exploratory drilling at the site are not regulated by NRC. With respect to the presence of byproduct material at Church Rock Section 8, as there has never been any processing of any kind at the site, no byproduct material is present. See Pelizza Affidavit at E2. Finally, with regard to special nuclear materials, the Presiding Officer correctly notes that there is no reason to suspect that such materials are present at the site. Mem. at 8, fn. 5.

On page 7 of their brief, Intervenors cite Franke's statement that "at least half, and as much as 90 percent of the observed ambient radon concentrations measured in and around the HRI Church Rock mining site since 1980 are from source, byproduct and technologically enhanced (i.e. anthropogenic) radioactive materials." Int. Resp. at 7; Franke Affidavit at 2. As none of this material is regulated by the Commission for the reasons discussed above, any radiation emanating from it is properly defined as background radiation. Thus, it should not be considered when calculating the TEDE.

Similarly, Intervenors continued reiteration of their concerns regarding the radiation emanating from the UNC mine shafts<sup>6</sup> fails to take into account the fact that any radiation from this source is background radiation. As stated in HRI's Response and the Staff's response, any underground ore is not material regulated by the Commission regardless of whether it would qualify as source material. Thus, any radiation emanating from such ore would be considered background. See 10 C.F.R. § 20.1003 (last sentence). Thus, contrary to Abitz's and Franke's assertions, ore not regulated by the Commission contributes to background radiation only and should not, therefore, be considered when calculating the TEDE.

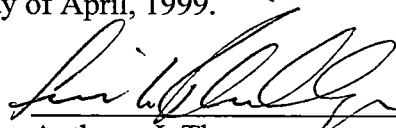
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6 The UNC mine site is not located at Church Rock Section 8.

III. CONCLUSION

For the reasons set forth in HRI's February 19, 1999 brief regarding air emissions, HRI's Response and those discussed above, Intervenors' request for relief should be denied as their conclusions are based on a misinterpretation of the definition of background radiation.

Respectfully submitted this 21st day of April, 1999.



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**CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing documents, HYDRO RESOURCES, INC.'S REPLY TO INTERVENORS' RESPONSE TO LBP 99-15 MEMORANDUM AND ORDER (QUESTIONS CONCERNING RADIOACTIVE AIR EMISSIONS), in the above-captioned proceeding were sent to the following by overnight mail on this 21st day of April, 1999.

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