

RAS 8149

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July 8, 2004

DOCKETED  
USNRC

Ann Marshall Young, Chair  
Anthony J. Baratta, Administrative Judge  
Thomas S. Elleman, Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

July 15, 2004 (9:45AM)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

SUBJECT: *Motion to Compel Regarding Security-Related Discovery*

Dear Administrative Judges,

Enclosed please find Blue Ridge Environmental Defense League's ("BREDL's") Motion to Compel Security-Related Discovery Responses by NRC Staff.

BREDL notes for the record that we consider it premature to submit a motion to compel with respect to any discovery requests that Duke Energy Corporation ("Duke") or the NRC Staff refused to answer on the ground that BREDL does not have a "need to know," either by virtue of the alleged lack of expert qualifications by Dr. Edwin S. Lyman, BREDL's expert, or some other reason. The issue of Dr. Lyman's expert qualifications is now on interlocutory appeal before the Commission, and the NRC Staff has not yet issued a determination with respect to other need-to-know issues. Thus, for example, BREDL has not filed a motion to compel with respect to Duke's refusal to respond to its request for production of certain OSRE test results. See Duke Energy Corporation's Answer to Blue Ridge Environmental Defense League's First Document Production Request on BREDL Security Contention 5 at 4 (July 2, 2004). BREDL intends to await the Staff's need-to-know determination, and if needed, will bring the matter before the Atomic Safety and Licensing Board pursuant to the Protective Order of December 15, 2003.

BREDL also notes that in light of the Commission's ruling yesterday in CLI-04-19, it will not seek to compel production of Duke's security plan for the Catawba nuclear power plant.

Sincerely,

  
Diane Curran

cc: Service list

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SECY-02

July 8, 2004

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of

DUKE ENERGY CORPORATION

Docket No's. 50-413-OLA,  
50-414-OLA

(Catawba Nuclear Station, Units 1 and 2)

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**BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE'S  
MOTION TO COMPEL SECURITY-RELATED DISCOVERY  
RESPONSES BY NRC STAFF**

**I. INTRODUCTION**

Pursuant to 10 C.F.R. § 2.740(f) and the Atomic Safety and Licensing Board's ("ASLB's") Orders of April 28, 2004, and July 6, 2004, Blue Ridge Environmental Defense League ("BREDL") hereby moves to compel the U.S. Nuclear Regulatory Commission ("NRC" or "Commission") Staff to fully respond to security-related discovery requests that BREDL propounded to them on July 2, 2004. *See* Blue Ridge Environmental Defense League's First Set of Discovery Requests to NRC Staff Regarding Security Plan Submittal; NRC Staff's Response to BREDL's "First Set of Discovery Requests to NRC Staff on Security Plan Submittal" (July 2, 2004) (hereinafter "NRC Staff Response").

**II. ARGUMENT**

**A. Specific Interrogatory No. 4.**

In Interrogatory 4, BREDL requested the Staff to:

[e]xplain what the Staff means by the phrase "attractive to potential adversaries from a proliferation standpoint," as used in the Staff's Supplement 1 to the MOX LTA Safety Evaluation (May 5, 2004) (hereinafter "Supplement 1 to the MOX LTA SE"). In particular:

- (a) define what the Staff means by “potential adversaries,” in terms of numbers, training, equipment, transportation, armaments, motivation, and all other relevant characteristics, including insider capabilities.
- (b) define what the Staff means by “attractive.”

The Staff responded as follows:

- (a) The Staff used the term “potential adversaries” in its generic, commonly understood meaning to describe anyone who may want to acquire nuclear material for unauthorized purposes.
- (b) The Staff’s use of the term “attractive” in this context relates to the form of the materials and the relative ease of converting the material into a nuclear device.

NRC Staff Response at 7.

The Staff’s answers to the two subparts of Interrogatory 4 are non-responsive. Contrary to the Staff’s claim in response 4(a), its answer is not based on the “generic, commonly understood meaning” of the term “adversary.” As demonstrated by Regulatory Guide 5.61, Intent and Scope of the Physical Protection Upgrade Rule Requirements for Fixed Sites (July 7, 1980), the Staff defines an “adversary” by the adversary’s “attributes,” *i.e.*, the number of adversaries, whether they are divided into teams, and the resources that are available to them.

*Id.* at 5.61-10.

Moreover, the interpretation of the term “adversary” given in the Staff’s response defies common sense. In the Staff’s Supplement 1 to the MOX LTA Safety Evaluation (May 5, 2004) (hereinafter “Supplement 1 to the MOX LTA SE”), the Staff stated that:

The NRC staff found that the MOX material, while technically meeting the criteria of a formula quantity, is not attractive to potential adversaries from a proliferation standpoint due to its low Pu concentration, composition, and form (size and weight).

*Id.* at 2. If, as used in this sentence, the term “adversary” means *any* person who may have a desire to acquire SSNM for unauthorized purposes, then the pool of adversaries would include a range of people, starting from people with no resources for theft and diversion of SSNM, to people with infinite resources that could be devoted to theft and diversion of SSNM. Clearly, in

promulgating 10 C.F.R. § 73.1, the NRC was thinking of a credible adversary. The NRC Staff should be required to describe the attributes of the adversary that is described in Supplement 1 to the MOX LTA SE.

The Staff's response to subpart (b) of Interrogatory 4 is incomplete, because it does not explain in what respect the "form of the material and the relative ease of converting the material into a nuclear device" makes it unattractive. The answer should include specific information regarding the form of the material, and a discussion of what limitations on the adversary's capabilities would make the material unattractive. For instance, the NRC states that the ease of converting the material into a nuclear device is "relative," but fails to explain what it is relative to, or where to draw the line between attractiveness and unattractiveness of SSNM to thieves.

**B. Specific Interrogatory No. 5**

Interrogatory No. 5 requests the Staff to:

Identify all applicable NRC statutes, regulations and regulatory guidance that contain or refer to the concept of attractiveness of special nuclear material to potential adversaries from a proliferation standpoint.

The Staff responded to this interrogatory by vaguely asserting that the concept of attractiveness of special nuclear material is "evidenced" in "several regulations, namely, 10 C.F.R. Parts 50, 70, 73, 74, and 76." It is not responsive to refer to whole parts of the Code of Federal Regulations, without reference to any specific regulation, especially when the Staff is referring to "evidence" of a concept rather than actual reference to the concept.<sup>1</sup>

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<sup>1</sup> BREDL notes that it did a word search for the term "attrac" in all of the parts of the NRC regulations cited by the NRC Staff and found no matches.

The NRC also refers to Regulatory Guide 5.2 as an example of “numerous” regulatory guides in which the concept of attractiveness of special nuclear material to potential adversaries from a proliferation standpoint is allegedly “evidenced.” It is not a sufficient response to say that “numerous” regulatory guides address the concept of attractiveness. The Staff should identify the regulatory guides that are responsive to the request, including the revision number and date. Moreover, BREDL was not able to find any relevant discussion in Regulatory Guide 5.2. The Staff should be required to identify the specific language that it has in mind.

**C. Specific Interrogatory 10**

Interrogatory 10 requests the Staff to:

Identify all applicable NRC statutes, regulations and regulatory guidance supporting the NRC Staff’s allegation, as stated in the Staff’s Supplement 1 to the MOX LTA SE at page 2, that 10 C.F.R. §§ 73.45 and 73.46 were primarily intended to address the materials at Category I fuel cycle facilities and not Category I quantities of strategic special nuclear material not at Category I fuel cycle facilities.

The Staff responded to this interrogatory by referring back to its answer to Interrogatory 5, which is discussed above. For the same reasons that the Staff’s response to Interrogatory 5 is too vague to be responsive, so is this response. It is not helpful for the Staff to refer to hundreds of pages of regulations as the source of the very specific information sought in Interrogatory 10. The Staff should be required to make a meaningful response.

**D. Specific Interrogatory 14**

Interrogatory 14 requests the Staff to:

Define “improvised nuclear device,” as used in Supplement 1 to the MOX LTA SE. In particular, for the Staff’s concept of an “improvised nuclear device,” specify:

- (a) the assumed minimum critical mass;
- (b) the assumed minimum explosive yield;
- (c) the minimum number of casualties that would result from detonation;
- (d) the materials and equipment assumed to be available to an adversary for assembly of an improvised nuclear device, including neutron reflectors, neutron initiators and explosives.

The Staff responded to this interrogatory as follows:

According to the "2003 Nuclear Terms Handbook" issued by the US Department of Homeland Security, Office of Science and Technology, an improvised nuclear device (IND) is used to refer to any type of explosive device designed to cause a nuclear yield.

The Staff assumed that the material in the MOX LTAs could not be used directly in an IND; therefore, the specific information requested in parts (a) and (d) of the interrogatory was not considered and is irrelevant.

Thus, the Staff failed to answer subparts (a) through (d) of the interrogatory on the ground that the requested information is "irrelevant."

The Staff's response is unacceptable on a number of grounds. First, it is too late. The Staff did not object to this interrogatory at the time for filing objections, and therefore the objection is waived. 10 C.F.R. § 2.740(b). *See also* Staff's Motion to Compel at 2 (July 7, 2004).

Second, the Staff's conclusion that the interrogatory is irrelevant is baseless. The relevance of the interrogatory is established in the MOX LTA SE-at page 2, where the Staff states that: "[a] large quantity of MOX fuel and an elaborate extraction process would be required to yield enough material for use in an improvised nuclear device or weapon." The interrogatory is relevant because it is calculated to lead to the production of admissible evidence regarding the viability of the Staff's claims regarding the attractiveness of MOX fuel to theft. *See* 10 C.F.R. § 2.740(b)(1). Moreover, the question of whether the MOX LTAs can be "used directly in an IND" has no bearing on the relevance of BREDL's interrogatory. The definition of IND cited by the Staff in its response to Interrogatory No. 14 encompasses a nuclear device utilizing plutonium that has been obtained by chemical separation of MOX fuel that has been transported away from the Catawba site. Also, the Staff clearly must have a specific concept of an IND in mind to be

able to conclude that “a large quantity of MOX fuel ... would be required to yield enough material...” for an IND. Therefore, the Staff should be required to answer BREDL’s questions.

**E. Specific Interrogatory No. 17**

Interrogatory No. 17 asked the Staff to “[s]pecify the minimum quantity of MOX fuel that would be required to yield enough material for use in an improvised nuclear device.” The Staff responded by referring BREDL to its answer to Interrogatory No. 14, which essentially stated that the Staff considered the question to be irrelevant. As discussed with respect to Interrogatory No. 14, this interrogatory must be answered because the Staff did not make a timely objection to it. Moreover, the interrogatory is relevant because it seeks information related to the alleged unattractiveness of the MOX fuel assemblies to a thief, based on the allegedly large quantity of MOX fuel that would be needed to make an IND. The question of exactly how much MOX fuel the Staff believes would be required to manufacture an IND is highly relevant to the litigation of Contention 5.

**F. Specific Interrogatory No. 18**

Interrogatory No. 18 asked the NRC Staff to “[s]pecify the minimum quantity of MOX fuel that would be required to yield enough material for use in a nuclear weapon.” In response, the NRC referred BREDL to its responses to Interrogatories 14 and 15. As discussed above with respect to Interrogatories 14 and 17, the Staff’s objection of irrelevance is made too late and is incorrect. This interrogatory seeks the details supporting the Staff’s assertions in its Safety Evaluation. The question should be answered.

**G. Specific Interrogatory No. 19.**

Interrogatory No. 19 requested the Staff to:

Define and discuss in detail the "elaborate extraction process" that the NRC Staff concludes would be required to "yield enough material for use in an improvised nuclear device or weapon." Discuss the assumptions made by the Staff as to the size, cost and detectability of the facility needed to carry out this process. Discuss the availability of technical information in the open literature regarding this process.

The Staff responded to this interrogatory as follows:

The Staff conclusion is based upon the processes conducted at U.S. government plutonium recovery (extraction) facilities (i.e., Rocky Flats, Hanford or Savannah River). The open literature contains many references regarding plutonium chemistry. One example is J.M. Cleaveland [sic], "The chemistry of Plutonium," American Nuclear Society, 1979. See also the response to Specific Interrogatory 24.

NRC Staff Response at 12. The Staff's answer is unresponsive in a number of ways. First, it does not describe the "elaborate extraction process" that it has in mind, other than to refer BREDL to the extremely vague information provided in response to Interrogatory 24 regarding the "multiple-step extraction processes" that "involve" concentrated acids and "usually" catalysts. See NRC Response at 14. This is not an adequate level of detail to understand what process the Staff assumes would be used on MOX fuel.

Second, the Staff does not provide any of the requested information about the assumed "size, cost and detectability" of the processing facility. These characteristics would vary widely depending on the type of process (e.g., ion exchange versus solvent extraction) and the assumed process parameters. If the Staff has made no such assumptions it should say so. But a vague reference to the "processes conducted at U.S. government plutonium recovery (extraction) facilities" does not answer the question.

Third, the NRC's listing of one document regarding plutonium chemistry does not respond to BREDL's question regarding the availability of literature regarding processes that can be used to make nuclear weapons or INDs out of MOX fuel.

Therefore, the Staff should be required to provide a complete answer to this interrogatory.

**H. Specific Interrogatory No. 23**

Interrogatory No. 23 requested that:

For each individual piece of documentation, identified in response to Specific Document Production Request No. 1 below, state whether it was issued before or after September 11, 2001. Also, state whether the documentation was a DOE order or a non-binding recommendation for implementation of DOE orders.

In response to this interrogatory, the Staff referred BREDL to a list of responsive documents on page 16 of its response. But this list does not contain any information as to whether the document was a DOE order or non-binding recommendation. The Staff should be required to complete its answer.

**I. Specific Interrogatory No. 24**

Interrogatory No. 24 requested as follows:

The NRC Staff has pointed to an exemption granted to Public Service Company of Colorado on January 19, 1989 from the upgraded physical protection requirements for Category I fuel cycle facilities issued in November 1988, regarding the storage of unirradiated high-temperature gas-cooled reactor fuel containing highly enriched uranium (HEU), as an appropriate precedent for the exemption that it intends to grant to Duke Energy regarding storage of the 4 MOX LTAs. Please compare the physical characteristics of Fort St. Vrain fuel elements with MOX LTAs with regard to their attractiveness for theft. In particular, compare (1) the amount of strategic special nuclear material in the fuel elements; (2) the weight-percent of strategic special nuclear material per fuel element; (3) the difficulty of extraction of highly enriched uranium from Fort St. Vrain gas-cooled reactor fuel in 1989, compared to the difficulty of extraction of plutonium from mixed-oxide fuel in 2004, taking into account the level of technical development of the respective treatment processes.

The Staff's response to this interrogatory is only partially responsive. The Staff does not provide information regarding the amount of SSNM in the MOX fuel elements or the weight-percent of SSNM per fuel element in the MOX fuel assemblies.

### III. CONCLUSION

For the foregoing reasons, the Board should grant BREDL's Motion to Compel.

Respectfully submitted,



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July 8, 2004

## CERTIFICATE OF SERVICE

I hereby certify that on July 8, 2004, copies of Blue Ridge Environmental Defense League's Motion to Compel Security-Related Discovery Answers by NRC Staff, Rebuttal Testimony of Dr. Edwin S. Lyman Regarding BREDL Contention I, and a letter from Diane Curran to the Atomic Safety and Licensing Board, were served on the following by e-mail and/or first-class mail, as indicated below.

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