LBP-05-10

UNITED STATES OF AMERICA
RAS 9875 NUCLEAR REGULATORY COMMISSION **DOCKETED 04/18/05**
SERVED 04/18/05
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Ann Marshall Young, Chair
Anthony J. Baratta
Thomas S. Elleman

In the Matter of	Docket No's. 50-413-OLA, 50-414-OLA
DUKE ENERGY CORPORATION	ASLBP No. 03-815-03-OLA
(Catawba Nuclear Station, Units 1 and 2)	April 18, 2005 [Original Issue Date March 10, 2005]

FINAL PARTIAL INITIAL DECISION — PUBLIC REDACTED VERSION (Issues Relating to BREDL Security Contention 5)

I. INTRODUCTION

This proceeding involves Duke Energy Corporation's (Duke's) application to amend the operating license for its Catawba Nuclear Station to allow the use of four mixed oxide (MOX) fuel lead test assemblies (LTAs) at the station. In connection with this application, Duke seeks exemption from certain NRC security regulations. Petitioner Blue Ridge Environmental Defense League (BREDL) has challenged these exemptions in a contention earlier admitted for litigation in this proceeding. After considering the parties' evidence and argument on the matters at issue, we find, subject to Duke's fulfilment of certain conditions described below, that Duke has met its burden of showing by a preponderance of the evidence that its requested exemptions from the requirements of 10 C.F.R. Parts 11 and 73 are appropriate under 10 C.F.R. §§ 11.9 and 73.5, and that its physical protection system, with the requested exemptions, will, during the time MOX fuel at Catawba would be subject to certain security requirements as strategic special nuclear material (SSNM), provide high assurance that activities involving the MOX fuel will not be inimical to the common defense and security

nor constitute an unreasonable risk to the public health and safety, as required at 10 C.F.R. § 73.20(a).[1]

We set forth the facts, reasoning and legal analysis on which this ruling is based, and the conditions to which it is subject, in the findings of fact and conclusions of law found in sections V and VI of this decision. We note first, however, certain procedural matters, beginning with the fact that the original version of this Final Partial Initial Decision was issued on March 10, 2005, and was sealed as Safeguards Information, as stated in a public Notice of Final Partial Initial Decision issued the same date, because it, in part, specifically identifies Duke's "detailed . . . security measures for the physical protection of special nuclear material" (*see* definition at 10 C.F.R. § 73.2 and note 12 below). This document is a redacted version of the original, which we issue in a publicly available form, after consultation with the parties and with Mr. Francis Young, appointed by the Commission, by Order dated August 2, 2004, to advise and assist the Licensing Board with respect to security classification of information and the safeguards to be observed in this proceeding.

We turn next to a discussion of the background and procedural history of this proceeding, and to our rulings on three pending matters, two concerning evidentiary questions remaining at the conclusion of the hearing on Security Contention 5, and one involving a BREDL motion to reopen the record in the proceeding in order to consider certain additional evidence.

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[1]As discussed in Section IV of the decision, Section 73.20 and other sections of 10 C.F.R. Part 73 concern various requirements for licensees that, among other things, "possess[ ] . . . formula quantities of [SSNM]," and this decision involves questions of whether Duke should be exempted from certain of these requirements. Section 73.2 defines "[*s*]*trategic special nuclear material*" as "uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium"; and "[*f*]*ormula quantity*" as strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium)." The latter definition concludes with the statement, "This class of material is sometimes referred to as a *Category I* quantity of material" (emphasis added), using a term that also arises in our discussion of the factual and legal issues in the security-related portion of this proceeding.

II. BACKGROUND AND PROCEDURAL HISTORY

Duke filed its application, or license amendment request (LAR), in February 2003, seeking to amend the license for the Catawba plant, which is located south of Charlotte, North Carolina, in York County, South Carolina. Duke requests in the LAR to modify certain technical specifications (TSs) to enable the use of four MOX fuel lead test assemblies at Catawba, and also requests exemption from several NRC regulatory requirements in connection with such proposed use. The regulations from which exemption is sought deal with worker clearances, access and search provisions, physical barriers, and tactical response team requirements; these are addressed in some detail in sections IV through VI, below.

As we have previously noted,[2] Duke's application is made as one part of a United States–Russian Federation nuclear nonproliferation program, in which it is proposed to dispose of surplus plutonium from nuclear weapons by converting it into MOX fuel (containing a mixture of plutonium and uranium oxides, with plutonium providing the primary fissile isotope) to be used in nuclear reactors.[3] Duke is part of a consortium, Duke Cogema Stone and Webster (DCS), that has contracted with the Department of Energy (DOE) to perform various functions associated with this program.[4]

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[2] *See* LBP-04-32, 60 NRC 713, 715 (2004).

[3] *See* Tr. 3874; 68 Fed. Reg. 44,107 (July 25, 2003); Letter from M.S. Tuckman, Executive Vice President, Duke Power, to NRC (Feb. 27, 2003), License Amendment Request, Attachment 3 at 3-2 n.1, ADAMS Accession No. ML03076-734 [hereinafter LAR]. Duke's original LAR involved both the McGuire Nuclear Station, Units 1 and 2, and the Catawba Nuclear Station, Units 1 and 2. In September 2003 Duke revised the LAR to restrict the request to the Catawba facility. Letter from M.S. Tuckman to NRC (Sept. 23, 2003), ADAMS Accession No. ML032750033. *See* LBP-04-4, 59 NRC 129 (2004); LBP-04-10, 59 NRC 296 (2004), for more detailed information about Duke's application.

[4] LAR, Attachment 3 at 3-2.

The assemblies currently at issue are being manufactured in France under the direction of AREVA,[5] and will, assuming all necessary conditions are met, ultimately be delivered by truck to Catawba by DOE. Duke's plans call for the assemblies to be irradiated for a minimum of two cycles, in order to test the acceptability of the fuel assembly design, the ability of the Duke and AREVA models to predict fuel assembly performance, and the applicability of the existing European database on MOX fuel performance to Duke's use of MOX fuel.[6] If successful, the LTA irradiation would support the potential future use of larger, "batch" quantities of MOX fuel at either the Catawba or McGuire plant, which would require another license amendment application and associated licensing proceeding.[7]

In response to a July 2003 Federal Register publication of notice of opportunity for hearing Petitioners BREDL and Nuclear Information and Resource Service (NIRS) in August 2003 submitted petitions to intervene and requests for hearing regarding the current LAR.[8] These were supplemented in October 2003, December 2003, and March 2004 by contentions raising specific areas of dispute regarding the LAR.[9] After hearing oral argument on BREDL's safety and environmental contentions in December 2003, and on its security-related

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[5]AREVA is the trade name of the Société des Participations du Commissariat à l'Énergie Atomique, an organization consisting of several businesses including Framatome Advanced Nuclear Power (ANP), Siemens, Cogema, and AREVA T&D. AREVA Website at www.areva.com.

[6]Tr. 2112.

[7]Tr. 2111. We note also that, according to the LAR, the fuel for any such batch use would be fabricated by DCS in a facility planned to be located in South Carolina, assuming approval of the license application for the facility. LAR, Attachment 3 at 3-2.

[8]*See* 68 Fed. Reg. 44,107; [BREDL]'s Hearing Request and Petition to Intervene (Aug. 25, 2003); Nuclear Information & Resource Service's [NIRS] Request for Hearing and Petition to Intervene (Aug. 21, 2003).

[9][BREDL]'s Supplemental Petition to Intervene (Oct. 21, 2003) [hereinafter BREDL Contentions]; Contentions of [NIRS] (Oct. 21, 2003); [BREDL]'s Second Supplemental Petition to Intervene (Dec. 2, 2003); [BREDL]'s Contentions on Duke's Security Plan Submittal (Mar. 3, 2004) (SGI).

contentions in March 2004,[10] the Licensing Board granted BREDL's request for hearing and, in Memoranda and Orders dated March 5 and April 12, 2004, admitted one safety-related and two environmental contentions, and one security-related contention, respectively.[11]

Starting prior to the filing or admission of any BREDL security contention and continuing since that time, the Licensing Board and parties have engaged, on a fairly intensive basis, in numerous activities involving sensitive information, including disputes on the relevance of particular pieces of such information, and access to such information. Most of the information in question is "Safeguards Information" (SGI), which is defined at 10 C.F.R. § 73.2 as follows:

> *Safeguards Information* means information not otherwise classified as National Security Information or Restricted Data which specifically identifies a licensee's or applicant's detailed, (1) security measures for the physical protection of special nuclear material, or (2) security measures for the physical protection and location of certain plant equipment vital to the safety of production or utilization facilities.[12]

A number of closed sessions have been held to address issues related to such information, and the Licensing Board has issued a number of rulings on related discovery and other disputes, involving BREDL's "need-to-know" and access to various pieces of sensitive

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[10]Tr. 71-576 (Dec. 3-4, 2003); Tr. 1263-1513 (Mar. 18, 2004) (Safeguards Information [SGI]).

[11]LBP-04-4, 59 NRC 129 (2004); LBP-04-10, 59 NRC 296 (2004) (redacted public version of April 12, 2004, sealed Safeguards Memorandum and Order, issued May 28, 2004). None of NIRS' contentions were admitted. Of the three safety-related and environmental contentions admitted in LBP-04-4, the Board dismissed one in LBP-04-7, 59 NRC 259 (2004), and BREDL withdrew another, *see* Order (Regarding Proposed Redacted Memorandum & Order, and Proposed Schedule Changes) (May 25, 2004) (unpublished), leaving one that was litigated separately from those issues relating to Security Contention 5 that were litigated more recently and are addressed herein. *See also* CLI-04-19, 60 NRC 5 (2004).

[12]*See also* 10 C.F.R. § 73.21. As noted at the beginning of this decision, because the Initial Decision addresses information that deals with and identifies in various ways Duke's "detailed . . . security measures for the physical protection of [the MOX fuel as well as] . . . for the physical protection and location of certain plant equipment vital to the safety" of the Catawba plant, the original version of it is protected as SGI itself. In order, however, to provide as much information as possible to the public, within the limits of relevant regulatory security requirements, we herein issue this redacted public version of the decision.

information.[13] Some of these rulings have followed initial need-to-know determinations by the Staff and Duke, regarding documents held by each, and some Board rulings have been appealed to the Commission, leading to the issuance of several Commission Memoranda and Orders.[14] We refer in passing herein to some of these, as relevant in our analysis of the facts and law regarding the security-related portion of this proceeding.

Evidentiary hearings were held on July 14-15, 2004,[15] and January 11-14, 2005,[16] respectively, on the only safety contention then remaining in the proceeding and the only security contention admitted in the proceeding. Subsequent to the July hearing, the parties'

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[13]*See*, *e.g.*, Memorandum and Order (Protective Order Governing Duke Energy Corporation's September 15, 2003 Security Plan Submittal) (Dec. 15, 2003); Memorandum (Providing Notice of Granting BREDL Motion for Need to Know Determination and Extension of Deadline for Filing Security-Related Contentions) (Jan 29, 2004); Memorandum and Order (Ruling on BREDL Motion Regarding Staff February 6, 2004, Meeting with Duke Energy and Request for Need to Know Determination) (Feb. 4, 2004); Memorandum and Order (Ruling on BREDL Motion for Need to Know Determination Regarding Classified Documents) (Feb. 17, 2004); Memorandum and Order (Setting Schedule for Discovery and Hearing on Security-Related Matters) (April 28, 2004); Order (Ruling on [Duke] Objection to BREDL Document Production Request No. 2 Regarding BREDL Security Contention) (June 28, 2004); LBP-04-13, 60 NRC 33 (2004); Memorandum and Order (Suspending Discovery Proceedings Pending Further Commission Guidance) (July 28, 2004); Memorandum and Order (Confirming August 10, 2004, Bench Ruling Finding Need to Know and Order Provision of Documents Sought by Intervenor in Discovery) (Aug. 13, 2004); LBP-04-21, 60 NRC 357 (2004); Memorandum and Order (Ruling on Objections of Duke and Staff to BREDL Discovery Requests) (Oct. 6, 2004); Memorandum and Order (Ruling on Redactions to Documents 67 and 68) (Oct. 6, 2004); Memorandum and Order (Confirming Sept. 28, 2004, Bench Ruling Upholding Staff Need-to-Know Determination on Access to Security Plan Revision) (Oct. 15, 2004); Memorandum and Order (Confirming Matters Addressed and Ruled on at Oct. 25, 2004, Closed Session) (Nov. 5, 2004); Memorandum and Order (Ruling on BREDL Access to NRC Guidance Document) (Nov. 5, 2004); Memorandum and Order (Ruling on BREDL Need-to-Know Appeal Regarding Lessons Learned Report) (Nov. 22, 2004); Memorandum and Order (Granting in Part Motion for Interim Discovery Measures) (Nov. 23, 2004); Memorandum and Order (Confirming Actions Taken at November 23, 2004, Closed Session) (Nov. 24, 2004); Memorandum and Order (Ruling on BREDL Motion to Amend Protective Order) (Dec. 17, 2004); Memorandum and Order (Need-to-Know Ruling on SECY Document) (Dec. 17, 2004).

[14]*See* CLI-04-06, 59 NRC 62 (2004); CLI-04-19, 60 NRC 5 (2004); CLI-04-21, 60 NRC 21 (2004); CLI-04-29, 60 NRC 417 (2004); CLI-04-37, 60 NRC 646 (2004); CLI-05-02, 61 NRC ___ (Jan. 5, 2005).

[15]Tr. 2072-2708.

[16]Tr. 3837-5364 (SGI); all future references to transcript pages within these cited page numbers are SGI even if not specifically so noted.)

submission of proposed findings of fact and conclusions of law and proposed reply findings,[17] and various other activities related to the safety portion of this proceeding,[18] the Licensing Board issued a Partial Initial Decision, finding that Duke had met its burden of persuasion regarding the one safety contention.[19] Meanwhile, on December 17 and 20, 2004, the parties filed their prefiled direct testimony on BREDL Security Contention 5,[20] and on January 7, 2005, filed their prefiled rebuttal testimony.[21] Following the January hearing, which was closed to the public because it involved SGI, the parties submitted proposed findings of fact and conclusions of law, and proposed reply findings, respectively, on January 28 and February 4, 2005.[22] In

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[17][Duke]'s Proposed Findings of Fact and Conclusions of Law Regarding Contention I (Aug. 6, 2004); [BREDL]'s Proposed Findings of Fact and Conclusions of Law Regarding BREDL Contention I (Aug. 6, 2004); NRC Staff's Proposed Findings of Fact and Conclusions of Law Concerning BREDL Contention I (Aug. 6, 2004); [Duke]'s Reply Findings of Fact and Conclusions of Law Regarding Contention I (Aug. 31, 2004); [BREDL]'s Proposed Reply Findings of Fact and Conclusions of Law Regarding BREDL Contention I (Aug. 31, 2004); NRC Staff's Reply Findings of Fact and Conclusions of Law Concerning BREDL Contention I (Aug. 6, 2004).

[18]*See* LBP-04-32, 60 NRC 713, 717-18 (2004).

[19]LBP-04-32, 60 NRC 713 (2004).

[20]Testimony of Steven P. Nesbit, Glenn A. Copp, III, William T. Byers, III, Howard B. Williams, and Rita A. Edwards on Behalf of [Duke] on Security Contention 5 (Dec. 17, 2004) (SGI); NRC Staff Testimony of Sherri L. Cross, Albert G. Barrett, Michael R. Burrell, R. John Vanden Berghe, John B. McKirgan, and William Troskoski (Dec. 17, 2004) (SGI); Prefiled Written Testimony of Dr. Edwin S. Lyman Regarding [BREDL] Security Contention 5 (Dec. 20, 2004) (SGI).

[21]Rebuttal Testimony of Steven P. Nesbit, Glenn A. Copp, III, William T. Byers, III, Howard B. Williams, and Rita A. Edwards on Behalf of [Duke] on Security Contention 5 (Jan. 7, 2005) (SGI); Prefiled Written Rebuttal Testimony of Dr. Edwin S. Lyman Regarding [BREDL] Security Contention 5 (Jan. 7, 2005) (SGI); NRC Staff Rebuttal Testimony of Sherri L. Cross, Albert G. Barrett, Michael R. Burrell, R. John Vanden Berghe, John B. McKirgan, and William Troskoski (Jan. 7, 2005) (SGI).

[22][Duke]'s Proposed Findings of Fact and Conclusions of Law Regarding Security Contention 5 (Feb. 1, 2005) (SGI) (hereinafter Duke Findings); [BREDL]'s Proposed Findings of Fact and Conclusions of Law Regarding Security Contention 5 (Feb. 1, 2005) (SGI) (hereinafter BREDL Findings); NRC Staff's Proposed Findings of Fact and Conclusions of Law Concerning Security Contention 5 (Feb. 1, 2005) (SGI) (hereinafter Staff Findings); [Duke] Reply Findings of Fact and Conclusions of Law Regarding Security Contention 5 (Feb. 7, 2005) (SGI) (hereinafter Duke Reply Findings); [BREDL] Reply Findings of Fact and Conclusions of Law Regarding Security Contention 5 (Feb. 7, 2005) (SGI) (hereinafter BREDL Reply Findings); NRC Staff's Reply Findings of Fact and Conclusions of Law Concerning Security Contention 5 (Feb. 7, 2005) (SGI) (hereinafter Staff Reply Findings);

addition, on February 7 BREDL filed a Motion to Re-open the Record on Security Contention 5, responses to which were filed February 15, 2005.[23]

Finally, we note that on March 3 the NRC, through Staff and based on NRC Staff findings, issued Duke's requested license amendment and exemption from regulations, and so notified the parties and licensing board in a memorandum dated March 4, 2005. BREDL has petitioned the Commission for an expedited review of these actions.[24]

III. RULINGS ON PENDING MATTERS

A. Deposition of Howard Williams

During the January 11-14 evidentiary hearing the Board took under advisement the Staff's objection to the admission into evidence of the deposition of Duke security specialist Howard Williams, which was proferred by BREDL.[25] Citing the Federal Rules of Evidence, Staff counsel asserts the deposition should be excluded as hearsay, given the presence of Mr. Williams at the hearing to testify.[26] Duke counsel objected to admission of the entire document, but has indicated no objection to the admission of those parts of the deposition that were referenced by BREDL expert Dr. Edwin Lyman, or that would give context to his testimony.[27] BREDL counsel has clarified that it wishes to have admitted only those pages that Dr. Lyman cited in his testimony, along with prior and subsequent pages in order to ensure that

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[23][BREDL] Motion to Re-Open the Record on Security contention 5 (Feb. 7, 2004) (SGI) [hereinafter BREDL Motion]; NRC Staff Response in Opposition to [BREDL] Motion to Re-Open the Record on Security Contention 5 (Feb. 15, 2005) (SGI) [hereinafter Staff Reply]; [Duke]'s Response to the [BREDL]'s Motion to Re-Open the Record on Security Contention 5 (Feb. 15, 2005) [hereinafter Duke Reply].

[24]Memorandum from Robert E. Martin, Sr., to Atomic Safety and Licensing Board and All Parties (Mar. 4, 2005), with attachments, ADAMS Accession No. ML050600059; [BREDL]'s Petition for Expedited Discretionary Review of No Significant Hazards Consideration Determination and Request for Immediate Order that Duke May Not Accept Plutonium MOX Fuel Shipment (Mar. 9, 2005).

[25]Tr. 4706-10; 5356-57.

[26]Tr. 4706-07.

[27]Tr. 4711; Duke Findings at 9.

appropriate context is provided.[28] This would result in pages 32-34, 38-40, 53-55, 66-68, and 83-114 being admitted into evidence. No specific objection to the admission of these enumerated pages has been posed by either Duke or the Staff. In order, however, to address the Staff's broader objection (which has not been withdrawn), we have considered it in the context of Rule 32 of the Federal Rules of Civil Procedure, which deals with the use of depositions at trial.

While the Federal Rules are not themselves directly applicable to practice before the Commission, judicial interpretations of a Federal rule can serve as guidance for interpreting a similar or analogous NRC discovery rule.[29] We find Rule 32 of the Federal Rules of Civil Procedure, and more specifically section (a)(2) thereof, to be relevant in this situation. Rule 32(a)(2) provides as follows:

> The deposition of a party or of anyone who at the time of taking the deposition was an officer, director, or managing agent, or a person designated under Rule 30(b)(6) or 31(a) to testify on behalf of a public or private corporation, partnership or association or governmental agency which is a party may be used by an adverse party for any purpose.

Under this rule a trial court may not exclude a deposition merely because the party is available to testify in person. *Community Counseling Serv., Inc. v. Reily*, 317 F.2d 239, 243 (4th Cir. 1963). "It has been consistently held that the Rule permits a party to introduce, as part of his substantive proof, the deposition of his adversary, and it is quite immaterial that the adversary is available to testify at the trial or has testified there." Charles Alan Wright et al., *Federal Practice & Procedure* § 2145, at 171 (1994 & Supp. 2003).

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[28]Letter from Diane Curran to Licensing Board (Feb. 3, 2005).

[29]*See, e.g.*, *Consolidated Edison Co. of New York* (Indian Point, Unit 2) and *Power Authority of the State of New York* (Indian Point, Unit 3), LBP-83-29, 17 NRC 1117, 1118-20 (1983) (finding Federal Rule of Civil Procedure 32(a)(2) did not apply because the deponent was not an "officer").

The determination of who is a "managing agent" of a corporate party whose discovery deposition may be used by an adversary is made on a case-by-case, pragmatic basis, with courts considering the corporate employee's rank or title and supervisory powers; the extent of the corporate employee's power to exercise judgment and discretion in dealing with corporate matters; the nature and extent of the employee's functions, responsibilities, and duties respecting the matters involved in the litigation; whether the person could be relied upon to give testimony, at management's direction, in response to the demand of a party engaged in litigation with the corporation; whether the employee's interests are identified with those of corporate management; and whether there is any person in higher authority who could possess the information sought. 23 Am. Jur. 2d *Depositions & Discovery* § 180 (1983 & Supp. 2000).

Mr. Williams is the Technical Specialist at Catawba Nuclear Station who oversees the Armed Response Program and is responsible for formulating the defensive strategy, placement of defensive positions and delay barriers, target set development, and ensuring that the regulatory requirements are met. Statement of Qualifications for Howard B. Williams, Exh. SEC-4. Additionally, Mr. Williams plans and executes all tabletop drills, coordination with local and state law enforcement agencies, and force-on-force exercises to meet the Design Basis Threat. *Id.*

The Board concludes that Mr. Williams is a "managing agent" for the purpose of giving testimony regarding security matters at Catawba. The extensive nature of Mr. Williams supervisory powers, the extent of his power to exercise judgment and discretion in carrying out his duties, and the nature and extent of his functions, responsibilities, and duties in security related matters at Catawba is clearly demonstrated in the record. Furthermore, Mr. Williams appears to possess an identity of interests with Duke and was responsive to directions by Duke to give testimony at this proceeding. Although Mr. Byers, as the Security Manager, is

technically a person of higher authority who may possess information sought by BREDL, during the hearing Mr. Byers occasionally deferred to Mr. Williams in answering questions, demonstrating that Mr. Williams is an appropriate source for much of the information relevant in this proceeding. Therefore, Mr. Williams' deposition may be used by BREDL as substantive evidence, and we accordingly admit into the evidentiary record as Exhibit SEC-SAF-27 those portions of the deposition specified by BREDL, namely, pages 32-34, 38-40, 53-55, 66-68, and 83-114.

B. Red Team Report

Also during the January hearing,[30] after submitting, as Exhibit SEC-17, portions of a DOE-originated document called the "Proliferation Vulnerability Red Team Report" and designated as Official-Use-Only (OUO), BREDL offered to attempt to locate a more complete unrestricted-use copy of the document. A complete OUO version of the document was admitted into evidence at the hearing, at the instance of the NRC Staff, as Exhibit SEC-OUO-2. After the hearing, BREDL counsel submitted an unrestricted-use copy of the report, requesting that it be substituted for the Staff's OUO version. The NRC Staff has no objection to BREDL substituting the more complete unrestricted version for BREDL's partial unrestricted version of the report previously admitted as Exhibit SEC-17, but objects to its admission in place of Exhibit SEC-OUO-2. We find reasonable both the Staff's argument in support of maintaining its own version in the record as Exhibit SEC-OUO-2, and BREDL's request to have the more complete unrestricted version admitted into the record. The unrestricted version now offered by BREDL will therefore be substituted for Exhibit SEC-17 in the official evidentiary record, and SEC-OUO-2 will remain in the record.

[30] Tr. 5035-36.

C. Motion to Reopen

BREDL requests in its February 7 Motion that we reopen the evidentiary record in this proceeding to permit the consideration of a January 18, 2005, speech by former Secretary of Energy Spencer A. Abraham. Specifically cited is a statement by Secretary Abraham that he had "directed the [National Nuclear Security Administration (NNSA)] and [Office of Security and Safety Performance Assurance (SSA)] to jointly review the options available to the Department to achieve the implementation of an elite force at DOE facilities possessing Category I or II quantities of Special Nuclear Material."[31] BREDL urges that Secretary Abraham's statement contradicts the NRC Staff's testimony during the January 11-14 hearing that the MOX LTAs now at issue would be classified by DOE as Category II SSNM and therefore should be treated under a lower standard of protection than that for more concentrated forms of SSNM. Noting that the Staff's testimony is cited by Duke in its Proposed Findings, BREDL suggests that Secretary Abraham's statement indicates that protection for MOX LTAs should not be differentiated from that provided for DOE Category I SSNM, and supports the testimony of its own expert, Dr. Edwin Lyman, disputing the Staff's testimony that the MOX LTAs should be classified as equivalent to DOE Category II material.[32]

[31]BREDL Motion, Attachment 2 at 7.

[32]BREDL Motion at 2-3.

As the parties have pointed out, under 10 C.F.R. § 2.734,[33] reopening the record is required only when new evidence is shown to be (1) timely, (2) safety or environmentally significant, and, when it is filed after a decision has been issued, (3) sufficiently material to change the result initially reached. Filing prior to issuance of a decision should also, of course, demonstrate significant materiality of the new evidence, or, as the Commission has stated, present "material, probative evidence which either could not have been discovered before or could have been discovered but is so grave that, in the judgment of the presiding officer, it must be considered anyway."[34] In addition, although the standard for reopening is a stringent one, where, as BREDL has noted, evidence could be considered without undue burden on the

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[33]The citation to 10 C.F.R. § 2.734 is to the former section number that was in effect prior to a significant revision to the agency's 10 C.F.R. Part 2 rules of practice and procedure, which became effective February 13, 2004. Under part of this revision, the provisions of § 2.734 were moved to a new section, § 2.326, with minor wording changes. *See* 69 Fed. Reg. 2182, 2220-22 (Jan. 14, 2004). Because this proceeding commenced prior to the effective date of the revision, the former Part 2 rules still apply here, and we therefore refer herein to the former § 10 C.F.R. § 2.734, which provides as follows:

> (a) A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied:
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> (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 Sec. 2.743(c). Each of the criteria must be separately addressed, with a specific explanation of why it has been met. Where multiple allegations are involved, the movant must identify with particularity each issue it seeks to litigate and specify the factual and/or technical bases which it believes support the claim that this issue meets the criteria in paragraph (a) of this section.
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> (c) A motion predicated in whole or in part on the allegations of a confidential informant must identify to the presiding officer the source of the allegations and must request the issuance of an appropriate protective order.
>
> (d) A motion to reopen which relates to a contention not previously in controversy among the parties must also satisfy the requirements for nontimely contentions in Sec. 2.714(a)(1) (i) through (v).

[34]51 Fed. Reg. 19,535, 19,538 (May 30, 1986).

parties, it has been held by a previous licensing board that the board could consider material and relevant evidence, on its own motion, in part in order to fulfill its "important responsibility . . . to preserve a record suitable for review."[35]

BREDL argues that its motion meets the three basic Section 2.734 criteria for re-opening the record, that it is supported by a competent affidavit and factual basis, and that considering it would not create any undue burden for the parties.[36] Secretary Abraham's speech raises two "significant" and "grave" safety and security issues, BREDL contends, that are relevant in this proceeding — in the asserted indication that DOE will henceforth not distinguish between Category I and II SSNM "for purposes of setting a standard for the quality of the armed response that is provided for its protection,"[37] as well as the asserted indication "that DOE is significantly upgrading its requirements for armed responders at both Category I and Category II facilities."[38] Because Secretary Abraham's speech assertedly contradicts the Staff and Duke's reliance on DOE's classification that would treat the MOX LTAs as being in a category warranting lower security protection than Category I material, BREDL maintains it could have a "material bearing on the outcome of this proceeding."[39] Moreover, BREDL argues, as required by 10 C.F.R. § 2.734(b), the motion is supported by a competent affidavit, that of Dr. Lyman, which addresses relevant issues and identifies specific portions of the speech that should be considered.[40]

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[35]*Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), LBP-78-2, 7 NRC 83, 85; *see* BREDL Motion at 8.

[36]BREDL Motion at 4, 8.

[37]*Id.* at 5.

[38]*Id*.

[39]*Id.* at 7-8.

[40]*Id.* at 8-9.

BREDL insists the motion is timely, because it has been submitted in time for us to consider it in making our decision, and because the speech was not made until after the conclusion of the hearing.[41] BREDL also provides a copy of a May 2004 speech made by Secretary Abraham in which he also discussed his "'vision' for widespread use within DOC [sic] of an elite protective force sometime in the future," but suggests that the January 18 speech "appears to constitute his first public announcement that DOE has actually instituted a program."[42]

Duke and the Staff oppose BREDL's motion.[43] Duke argues that BREDL's Motion is neither timely, nor raises a significant safety issue, nor shows that it would lead to a materially different result in this proceeding, and to consider the evidence "would impermissibly expand the scope of the proceeding to include generic [DOE] initiatives," and could also cause delay in the issuance of this decision.[44] In addition, Duke argues, "[w]hat BREDL actually seeks is an amendment of NRC security regulations," an improper matter to consider in this proceeding, or alternatively, "an improper request for reconsideration of the Commission's holding in CLI-04-29 that 'there is no rational reason for Catawba to have a significantly different level of security than is already existing at the reactor site.'"[45] In addition, Duke has submitted the affidavit of its expert, Steven Nesbit, in opposition to that of Dr. Lyman should we consider it. Mr. Nesbit states in his affidavit that Secretary Abraham's speech does not imply that the security forces for Category I and II facilities would be the same, does not define an "elite force," is not "reliable evidence of any protection strategies used by DOE at its Category I or Category II facilities,"

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[41] *Id.* at 6.

[42] *Id.* at 4 & Attachment 3.

[43] *See* Duke Response; Staff Response.

[44] Duke Response at 1-2.

[45] *Id.* at 2.

does not provide any detail on the scope or schedule of any implementation of any DOE changes, and does not bear on DOE categorization of SSNM.[46]

The Staff argues that BREDL's motion "fails to meet any of the requirements of 10 C.F.R. § 2.734"; specifically, that it is not timely, does not address a significant safety issue, and presents irrelevant evidence that would not materially affect the result in this proceeding.[47] The Staff states that "the DOE initiative is not applicable to NRC facilities and therefore does not address any issue pertinent to this proceeding's license amendment and exemptions granted under NRC regulations."[48] In the supporting affidavit of Sherri Cross and Albert G. Garrett, the argument is made that "the speeches only indicate a proposed upgrade to the current DOE forces," none of the improvements of which have been implemented and which "otherwise are not relevant to the instant proceeding."[49] The Staff distinguishes the testimony it offered at the hearing as being relevant only "with regard to DOE MC&A[50] requirements to determine attractiveness," whereas Secretary Abraham's speech contained no references to the MC&A requirements; "therefore, nothing in his speech has any impact on the Staff's attractiveness determination"; and the "elite protective force" discussed in it "has no bearing on Duke's request for exemptions from NRC regulations or to the[ ] admitted contention."[51] Finally, the Staff asserts, "if, when, and how the initiative [discussed by Secretary Abraham] comes to

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[46] *Id.*, Attached Affidavit of Steven P. Nesbit Regarding [BREDL Motion], at 2-3.

[47] Staff Response at 4-8.

[48] *Id.* at 6.

[49] *Id.* at 6.

[50] "MC&A" stands for "Manual for Control and Accountability of Nuclear Materials. Tr. 4982; *see* Ex. SEC-22.

[51] *Id.* at 7.

fruition remains to be seen," and thus constitutes only evidence which is not in final form and is thus "not a particularly useful item on which to rely."[52]

Duke and the Staff support their challenge to the timeliness of BREDL's motion by pointing out that the information BREDL puts forth was previously available in Secretary Abraham's May 2004 speech, in which he discussed, in the Staff's words, "plans to create a protective force with an 'elite mission focus.'"[53] The Staff points out that the information in question "had been widely available through a variety of internet sources since May of 2004."[54]

The Staff and Duke's arguments regarding timeliness appear at first blush to have some merit; information on the possibility of establishing the elite force that might be responsible for protection of Category I and II SSNM was available in May 2004. However, the words used by Secretary Abraham in May 2004 included such language as "[i]t *may mean* awarding a common, complex-wide protective force contract for, at a minimum, those protective force elements that protect Category I and II SNM," and "it *may mean* establishing a special, elite federal force for protection of Category I and II SNM"[55] — language that would tend to support *not* considering it under the Staff's theory regarding lack of finality. The Secretary's January 18, 2005, statement that he had "*directed* the NNSA and SSA *to jointly review the options* available to the Department *to achieve the implementation* of an elite force at DOE facilities possessing Category I or II quantities of Special Nuclear Material," is, on the other hand, obviously

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[52] *Id.* at 8. The Staff also points out, in response to a BREDL suggestion that the primary responsibility of a Tactical Response Team (TRT) under relevant NRC security regulations is to "protect the MOX LTAs from theft," that the regulations define a TRT as "the primary response force for each shift which can be identified by a distinct item of uniform, armed with specified weapons, and whose other duties permit immediate response." Staff Response at 2. We address this issue generally in our discussion of Duke's request for exemption from NRC regulations relating to the TRT, at section V.E below.

[53] Staff Response at 4; *see* Duke Response at 8.

[54] Staff Response at 4.

[55] *See* BREDL Motion, Attachment 3 at 10 (emphasis added); *see also* Staff Response, Attachment B at 9.

significantly more definite and final than the May statements. And the January 18 statement obviously occurred after the January 11-14 hearing. In addition, although BREDL might well have filed its motion earlier than February 7 given Dr. Lyman's statement that he found the material in question on January 20, we do not find the 18 days that it took BREDL to file its motion to be delay that would warrant denying the motion.

With regard to the arguments of Duke and the Staff on the relevance of the information in question, we find these to be less persuasive than those on timeliness. First, we do not find that consideration of Secretary Abraham's statement would "impermissibly expand the scope of [this] proceeding to include generic [DOE] initiatives," nor that it would entail any improper "amendment of NRC security regulations," or constitute "an improper request for reconsideration of the Commission's holding in CLI-04-29." The pertinent question with regard to relevance is simply whether the Secretary's statement is in some way relevant to any issues now before us in this part of this proceeding.

In this regard, we note that the Staff, and Duke through its reliance on the Staff testimony to such effect, *relied on* DOE's classification of SSNM material as Category I or Category II, not simply with regard to the relative attractiveness of the MOX LTAs considered in a vacuum, but also by necessary implication with respect to *what protective measures should, as a result of the level of attractiveness, be required* with regard to it, and whether and the extent to which the requested exemptions should be granted. The *only* relevance of the attractiveness issue itself in this proceeding is to these related issues of the protective measures that should be required of Duke, and the extent to which Duke's requests for exemption from various NRC Category I requirements, relating to security measures for protection of SSNM, should be granted.

We find the following testimony of the Staff to be enlightening on these issues:

(U)[56] A3a (SC)[57] Based upon my recent experience at a PU facility, I was assigned to assist with the evaluation of Duke's request for exemptions from certain 10 C.F.R. Part 73 and Part 11 requirements. My duties in connection with the review of the LAR have been focused on the categorization of the material *and evaluation of the physical protection afforded this material while at Catawba.*[58]

. . . .

(U) A23 (AG, SC, MB) . . . . The SSNM contained in the MOX LTAs is significantly different than the SSNM handled by the currently licensed Category I facilities. *Therefore, it need not be protected in the same manner. Consequently, Duke requested, and the Staff recommended approval of, exemptions from certain security requirements that would otherwise apply to Catawba while it possessed unirradiated MOX fuel.*

(U) Q24 *How did you make the determination that the SSNM in the MOX LTAs was significantly different from the material handled by Category I fuel cycle facilities?*

(U) A24 (AG, SC) There are no NRC regulations dealing specifically with MOX fuel assemblies. Therefore, *to assist in the evaluation of the Duke request*, *Staff referenced DOE policies relating to physical protection of similar material at DOE facilities*, including DOE Manual 474.1-1B, "Manual for Control and Accountability of Nuclear Materials" . . . .

(U) Q25 Briefly describe the results of the Staff review of the DOE references.

(U) A25 (AG, SC) The Staff review found that, under DOE requirements/guides, material of the composition and form is not a Category I quantity, due to its low attractiveness . . . . In DOE terms, the MOX fuel assemblies would be categorized as Category II, Attractiveness Level D special nuclear material (SNM) *As such, DOE would not require Category I physical protection for this material. . . .*

(U) Q26 Did the Staff consult any other DOE documents or sources?

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[56]"(U)" means the paragraph indicated is unclassified and not SGI.

[57]The letters at the beginning of various paragraphs of Staff testimony indicate the initials of the particular Staff members whose testimony is provided.

[58]Tr. 4973 (emphasis added).

(U) A26 (AG, SC) Yes, to ensure that DOE practices had not changed recently, the Staff consulted with DOE MC&A representataives at the DOE Field Offices at the Savannah River Site . . . . The answers from both the DOE MC&A representatives confirmed the Staff's evaluation. Both stated the MOX LTAs would be Category II, Attractiveness D SNM and would not be Category I.[59]

. . . .

WITNESS CROSS: . . . . And since the material that is going to be at Catawba, in the form of the four MOX LTAs is significantly different than the material at the category I facilities for which the regulations were really intended, I relied on some of my previous experience with the Department of Energy, whereas they look at the quantities of material, and the form that they are in, *and grade the protection strategy based on how close that material is to being in weapons form*, for this type of material. . . .[60]

WITNESS CROSS: . . . . In looking at the strategy, they break the material into what they call attractiveness levels. And *based on the attractiveness level, the more attractive the material is, the more protection is required, because you assume that the adversary would go for the best target.*

Because once he gets it there is [sic] *less he has to do with the material in order to create a nuclear device. . . .*[61]

Given the clear, direct and unmistakable connection between the Staff's use of the DOE classification manual and the Staff's evaluation of the level of protection needed for the SSNM in the MOX assemblies, it is similarly clear that, to the extent Secretary Abraham in his speech directed DOE staff to "review the options available to the Department *to achieve the implementation of an elite force at DOE facilities possessing Category I or II quantities of Special Nuclear Material*," at least a question is raised regarding the extent to which DOE would henceforth have a *protection strategy* that would treat Category I and II quantities of SSNM the same or differently based on their relative attractiveness. Although not entirely free of ambiguity, the former Secretary's statement may be taken to indicate that the two categories of

[59]Tr. 4982 (emphasis added).

[60]Tr. 5112 (emphasis added).

[61]Tr. 5113 (emphasis added).

nuclear material might in the future be addressed the same or similarly with regard to the *level of protection* that would be required for them.

The relative attractiveness of the MOX LTAs has been a central argument of Duke and the Staff as to why the *level of protection* for them need not be as stringent as those for other NRC Category I SSNM, such as that found in fuel fabrication facilities. The Staff's testimony relying on the DOE categories went directly to this issue, and the information from the Abraham speech may therefore be viewed as raising questions about such reliance to support the "relative attractiveness" argument of Duke and the Staff. The evidence in question is therefore relevant in the extent to which it raises a question regarding, or impeaches, the Staff's testimony on the level of protection appropriate for the MOX LTAs based on its level of attractiveness according to the DOE categorization scheme.

With regard to the significance of the safety issue, it can hardly be argued that the strength of the attractiveness argument is not a significant issue in this proceeding, as it is the basis on which many of Duke's arguments rest, regarding the need for various security measures to protect the MOX LTAs. With respect to the significance of the new information, however, we find that the most it does is raise a question about the Staff's reliance on the DOE categories of attractiveness of various types and forms of SSNM. As demonstrated below, we did not in reaching our findings place much significance on the Staff's reliance on the DOE categories, and so the import of the information from Secretary Abraham's January 18 speech is also not of great significance to us in reaching our findings herein. Thus, it might arguably be concluded that BREDL's motion does not raise a significant safety issue that would materially affect the outcome of this proceeding.

Although we might therefore deny the motion, we will refrain from doing so, because of the significance of the attractiveness issue as it has been argued by Duke and the Staff, and

the relevance of the evidence in question to this issue; in the interest of fulfilling our duty to ensure that there is a complete record in this proceeding; and because at this point it would impose no burden at all on the parties, as they have all, either originally or at our direction,[62] already filed any and all evidence relevant to the subject matter of BREDL's motion.

We will thus grant the motion to the extent of allowing the attachments to the motion and responses to be added to the evidentiary record in the proceeding, to be accorded whatever weight is appropriate, both by us at this level of this proceeding, and in any appeal that may be taken from this decision. Dr. Lyman's affidavit and attachments will be marked and admitted as Exhibit SEC-SAF-27; Mr. Nesbit's affidavit will be marked and admitted as Exhibit SEC-SAF-28; and the Staff's affidavit and attachments will be marked and admitted as Exhibit SEC-SAF-29.

In admitting these exhibits, we would, finally, note that, although we do not give any of the DOE-related "relative attractiveness/level of protection" evidence much weight in our determinations, this is not to suggest that we have not seriously and attentively considered the arguments and evidence of all parties with regard to this information. Nor do we mean to suggest that the subject matter of Secretary Abraham's speech, inasmuch as it speaks to the critical need to upgrade security measures for nuclear materials in the wake of 9/11**,** is not significant or important. The NRC has demonstrated awareness of the need to upgrade security requirements for the protection of nuclear material as a direct result of 9/11. And our ruling herein, to the extent it does not explicitly so state, implicitly rests on the critical need to protect the material in the MOX LTAs at issue herein from any possibility of terrorists gaining access to it. It bears emphasizing that this issue is, as it very obviously should be, of vital importance to us in reaching our decision.

We turn now, more directly, to the facts and law on which our decision is based.

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[62] *See* Order (Regarding BREDL Motion to Re-open Record) (Feb. 9, 2005) (unpublished).

IV. GOVERNING LEGAL STANDARDS

The legal standards that are applicable in this proceeding are found in various NRC regulations. First, under 10 C.F.R. § 50.90, whenever a holder of a license wishes to amend the license, including technical specifications in the license, an application for amendment must be filed, fully describing the changes desired. Under Section 50.92(a), determinations on whether to grant an applied-for license amendment are to be guided by the considerations that govern the issuance of initial licenses or construction permits to the extent applicable and appropriate. Both the common standards for licenses and construction permits at Section 50.40(a), and those specifically for issuance of operating licenses at Section 50.57(a)(3), provide that there must be "reasonable assurance" that the activities at issue will not endanger the health and safety of the public.

In addition, a licensee who possesses or uses formula quantities of SSNM[63] is required not only to demonstrate "reasonable assurance" of safety, but also, under 10 C.F.R. § 73.20(a), to have a physical protection system with an objective of providing "*high assurance* that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety." The plutonium contained in the MOX fuel assemblies that are the subject of Duke's LAR will, during the limited time after delivery and prior to irradiation in the core of the reactor, be "weapons-usable" material[64] and constitute SSNM in a "formula" quantity that triggers application of Section 73.20 as well as various other "Category I" security requirements relating to a facility's physical protection system, over and above those normally required for a reactor.[65]

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[63] *See supra* note 1.

[64] Tr. 3874; *i.e.*, plutonium that is not self-protecting in accordance with 10 C.F.R. § 73.6(b) and is thus not exempt from Section 73.20.

[65] Tr. 3873-74.

Duke agrees that Catawba would "technically be subject to Category I security requirements" while MOX fuel is there prior to its irradiation in the core,[66] but argues that because Catawba is not a Category I facility in the normal sense[67] not all of the heightened requirements relating to Category I facilities should apply to Catawba during the time at issue in this proceeding, and it should therefore be exempted from several such requirements. The provisions from which Duke seeks exemption include those found at 10 C.F.R. §§ 11.11(b) (regarding clearances required for workers); 73.46(d)(9) (regarding access and search issues); 73.46(c)(1) (regarding physical barriers); and 73.46(h)(3) and (b)(3)-(12) (regarding a tactical response team and related requirements).[68] Sections 11.9 and 73.5 provide, respectively, that exemptions from the requirements of 10 C.F.R. Part 11 may be granted if they are authorized by law and will not constitute an undue risk to the common defense and security, and that exemptions from the requirements of Part 73 may be granted if they are authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest.

Finally, the physical protection system for possession of SSNM must also, under Section 73.20(a), be "designed to protect against the design basis threats [DBTs] of theft or diversion of [SSNM] and radiological sabotage as stated in § 73.1(a)." Although Duke does not seek exemption from these design basis threats, they are relevant, both to demonstrate the threat against which the measures at issue are intended to protect, and because the parties differ on

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[66]Tr. 3874.

[67]*See infra* note 104 and accompanying text.

[68]We quote the relevant regulatory provisions in notes to our discussion of each in Section V below.

the meaning of certain of the language used in their definition (an issue we address in Section VI below). 10 C.F.R. § 73.1 defines the DBTs as follows:

> (1) *Radiological sabotage.* (i) A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment:
>
> (A) Well-trained (including military training and skills) and dedicated individuals,
>
> (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both,
>
> (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long-range accuracy,
>
> (D) hand-carried equipment, including incapaciting agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and
>
> (E) a four-wheel drive land vehicle used for transporting personnel and their hand-carried equipment to the proximity of vital areas, and
>
> (ii) An internal threat of an insider, including an employee (in any position), and
>
> (iii) A four-wheel drive land vehicle bomb.
>
> (2) *Theft or diversion of formula quantities of strategic special nuclear material.* (i) A determined, violent, external assault, attack by stealth, or deceptive actions by a small group with the following attributes, assistance, and equipment:
>
> (A) Well-trained (including military training and skills) and dedicated individuals;
>
> (B) Inside assistance that may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate iin violent attack), or both;
>
> (C) Suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long-range accuracy;
>
> (D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safe-guards [sic] system;
>
> (E) Land vehicles used for transporting personnel and their hand-carried equipment; and
>
> (F) the ability to operate as two or more teams.
>
> (ii) An Individual, including an employee (in any position), and
>
> (iii) A conspiracy between individuals in any position who may have:
>
> (A) Access to and detailed knowledge of nuclear power plants or the facilities referred to in § 73.20(a), or
>
> (B) items that could facilitate theft of special nuclear material (e.g., small tools, substitute material, false documents, etc.), or both.

The Commission has augmented the preceding requirements in various orders issued to NRC licensees, including an April 29, 2005, Order applicable to Catawba.[69]

V. FINDINGS OF FACT

A. General Information Relating to Matters at Issue

The matters at issue herein concern the physical protection system that Duke plans to have in place to protect the MOX fuel assemblies against the DBT for theft during the period from DOE's delivery of them to the plant until the loading of them into the core of one of Catawba's two reactors for irradiation. As indicated above, we have before us Duke's requests for exemption from several of the heightened security requirements for the physical protection system during this period of time, specifically those relating to worker clearances, access and search issues, physical barriers, and a tactical response team. As the parties have presented their evidence and arguments largely in formats that cut across the specific exemptions and apply more broadly, we begin by noting some of these more general security-related facts, which form a backdrop to our discussion below of the specific exemption requests at issue.

(1) Security Measures at Catawba

The Catawba plant is located in a rural area approximately six miles north of Rock Hill, South Carolina, adjacent to Lake Wylie. The plant has a 2500-foot radius "exclusion area" totaling approximately 450 acres.[70] The site is enclosed within a perimeter fence, which surrounds the "owner-controlled area," or OCA. This fence XXXXXXXXXXXXXXXXXXXXXXX

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[69] *See* Tr. 3877. A quorum of the Licensing Board originally found a "need to know" on the part of BREDL counsel and expert to this order. Memorandum and Order (Ruling on BREDL Motion for Need to Know Determination and Extension of Deadline for Filing Security-Related Contentions) (Jan. 29, 2004) (SGI); Memorandum (Providing Notice of Granting BREDL Motion for Need to Know Determination and Extension of Deadline for Filing Security-Related Contentions) (Jan. 29, 2004). The Commission reversed the Board in CLI-04-6, 59 NRC 62 (2004), stating among other things that the "current proceeding has nothing to do with the NRC's post-September 11 general security orders." 59 NRC at 72.

[70] Tr. 3874.

XXXXX, and is intended only to inhibit access by the public. XXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX[71] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Inside the OCA is a more restricted area known as the "protected area," or PA. It is illuminated by a number of lights, and its perimeter is marked by double fences, as well as certain structures at parts of the perimeter. The outer of the double fences is referred to as an "administrative fence," and the inner fence as the PA fence; the inner fence is topped with barbed wire. Between the fences is the "isolation zone," XXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[72]

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[73] XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXX [.... DISCUSSION OF DELAY BARRIERS AND PROTECTION STRATEGY ...] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[71] Tr. 3875; *see also* Tr. 3886.

[72] Tr. 3875; 3886.

[73] Tr. 3886-87 & n.9.

XXXXXXXXXXXXXXXX[74] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXX.

Within the PA various "vital areas" are designated, which contain vital equipment and are protected by physical barriers and restricted access, accomplished by access portals equipped with locking and alarm devices.[75] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXX.[76]

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX.[77] All who enter through the VAP or PAP are searched using specialized search equipment.[78] In addition, a 1.5-mile-long ditch vehicle barrier system (VBS) protects XXXXXXXXXXXXXXXXXXX.[79]

The security force for Catawba has four teams that work 12-hour duty shifts: one team on day shift, one on night shift, and two that are normally off duty. XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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[74]Tr. 3887.

[75]*Id.*

[76]Tr. 3887-88.

[77]Tr. 3876.

[78]*Id.*

[79]*Id.*

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[80] XXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXX.[81] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX [DISCUSSION OF CATAWBA SECURITY FORCE] XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[82] XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX.[83]

All armed responders are trained and authorized XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXX.[84]

A Security Shift supervisor is responsible for ensuring that there are adequate numbers of qualified armed responders and other security personnel to support both normal operations and any security contingency event. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[85]

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[80]Tr. 4039-41.

[81]Tr. 3918.

[82]Tr. 3878, 4040-42.

[83]Tr. 5234-35.

[84]Tr. 3878; 3887.

[85]Tr. 3878.

Catawba has established relationships with local law enforcement agencies (LLEA), XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[86]

We note, as pointed out by the Staff, that the Duke physical protection plan for Catawba, prior (and subsequent) to the time period now at issue, is already required to protect against the design basis threat of radiological sabotage by reason of the licensing requirements for nuclear power plants at 10 C.F.R. Part 50.[87] The requested exemptions that we address below would be from requirements for protecting SSNM that are over and above those that normally apply to nuclear power plants that do not possess or use such material. With regard to the precise point at which the heightened requirements at issue would begin to apply, there appears to be no dispute that the period of concern would begin once DOE relinquished control over the MOX fuel assemblies and Duke accepted delivery by signing for them after they are offloaded from the DOE trucks and placed in the fuel building, with the doors to the building closed and barriers back in place.[88]

Up to that point the DOE Office of Secure Transportation (OST) would be in control of the assemblies.[89] The delivery schedule, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,

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[86]Tr. 3888-89.

[87]*See* Staff Findings at 10.

[88]*See* NRC Staff 's Brief on Issues Raised at Evidentiary Hearing (Feb. 1, 2005) at 6; Duke Findings at 21-23.

[89]*See* Duke Findings at 20-25; Staff Findings at 18-19.

is to be tightly controlled information in order to provide an added measure of security XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[90] XXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX.[91] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX X [ADDITIONAL DISCUSSION OF SECURITY MEASURES DURING DELIVERY PERIOD] X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[92]

Prior to acceptance of delivery, DOE-OST is to maintain custody and security responsibility for the assemblies in accordance with DOE-OST safeguards and security regulations.[93] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[94] XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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[90]Tr. 3911.

[91]Tr. 3911.

[92]Tr. 3911-12.

[93]Tr. 4070, 4083-84, 4979-80.

[94]Tr. 3913-14, 4070-71.

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XXXXXXXXXXXXXXXXXXXXXXXXXX.[95]

After DOE has completed delivery of the fuel, Duke would take over XXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[96] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[97] XXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[98] XXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[99] XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[100]

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[95]Tr. 3913-17.

[96]Tr. 3873, 3917.

[97]Tr. 4101

[98]Tr. 3917-18.

[99]Tr. 3918.

[100]Tr. 3873.

(2) Parties' General Positions Regarding the Adequacy of Duke's Security System

According to Duke, its existing physical protection system already provides high assurance of protection against theft of special nuclear material, by virtue of its being based on XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX, including the fuel building.[101] In support of its LAR and exemption requests Duke relies on, among other things, a September 2003 revision to its PSP for Catawba, along with certain January and April 2004 responses to NRC Staff requests for additional information (RAIs).[102] Its PSP has already been approved by the NRC to protect the plant against radiological sabotage, and includes post 9/11 enhancements finalized in October 2004, in accordance with NRC requirements.[103]

Duke justifies its requests for exemption by arguing that its existing security arrangements are already robust; that the form of the MOX fuel distinguishes it from that usually found in Category I facilities, in that it is in a "sintered pellet form contained inside welded fuel rods that are mechanically fixed in a fuel assembly weighing approximately 1500 pounds"; and that the material is "a relatively unattractive target for theft."[104] XXXXXXXXXXXX

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[101]Tr. 3908-09.

[102]Tr. 3872; *see* Exh's. SEC-SAF-1 – 3.

[103]Tr. 3908.

[104]Tr. 3874. Duke cites in support of its "unattractiveness" argument the following language of the Commission, in CLI-04-29:

> If Duke receives the current license amendment, it will, technically, be a Category I facility during the time it possesses the four unirradiated MOX test assemblies. But, as we already have held in this proceeding, the circumstances at Duke's Catawba reactor, even at that time, will be very different from the two existing Category I facilities (the NFS and BWXT plants). Because of its composition, form and low plutonium concentration, the MOX material is not nearly as attractive to potential adversaries from a theft and diversion standpoint as the material at the existing NFS and BWXT facilities. Those facilities engage in fuel processing and possess larger quantities of highly enriched uranium in more accessible forms. When the NRC issued its guidance documents in 2000, it did not intend those guidance documents to cover or address a power reactor licensee's possession and use of already fabricated MOX fuel. Indeed, not only would MOX fuel assemblies be difficult for a terrorist to acquire and transport, but using such an assembly to create a radiological dispersion device would be

(continued...)

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX, Duke's strategy also includes "defense-in-depth principles, including diversity and redundancy, such that no single event can disable the security response capability."[105]

The Staff, as indicated above in our discussion of BREDL's motion to reopen, supports Duke in its argument that the MOX fuel assemblies are a relatively unattractive target, likewise noting that it would be XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX, difficult to convert the fuel into material usable in a nuclear explosive

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[104](...continued)

> impractical and ineffectual. For these reasons, it is clear to the Commission that while Catawba would technically be a Category I facility, there is no rational reason for Catawba to have a significantly different level of security than is already existing at the reactor site.

CLI-04-29, 60 NRC 417, 424 (2004).

We note that, subsequent to issuance of CLI-04-29, in ruling on BREDL's motion for reconsideration of CLI-04-29, the Commission stated the following:

> The Commission has indeed said, both in CLI-04-29 and previously, that MOX-related security needs at Catawba are different from security needs at other Category I facilities. But this is not the same as saying that nothing needs to be done at Catawba compared with other commercial reactors . . . . The Commission and all of the parties, including Duke, recognize that when the unirradiated MOX fuel assemblies are onsite, Catawba must implement security measures that are qualitatively better or greater than those required for a commercial nuclear reactor employing standard uranium fuel assemblies. It is the nature of the MOX-related extra measures that is at issue in this adjudication. We have expressly left it to the *Board* to determine whether the specific security measures Duke has proposed in its application are adequate.
>
> . . . .
>
> There is no real dispute over certain facts regarding use of the MOX material at Catawba [relating to its low plutonium concentration as compared to other sources of formula quantities of SSNM, dispersal in a ceramic matrix of depleted uranium oxide, housing in 12-foot 1500-pound assemblies, and need for a large quantity and an elaborate extraction process to yield enough material for a weapon]. . . .
>
> . . . . We have expressly left it to the Board to determine the ultimate issue in this case – whether the specific incremental measures Duke has proposed are adequate. We are confident that the Board is able to determine the issues fairly on the basis of the full record the parties will develop and unencumbered by any perception of Commission prejudgment.

CLI-04-37, 60 NRC 646, 649, 650-51 (2004) (citations omitted).

[105]Tr. 3877.

device, and difficult to produce a workable explosive device.[106] The Staff also expressed the view, however, that the relative skills and resources of potential adversaries "do not factor into the determination of the attractiveness level of the material.[107]

As BREDL points out, however, in addition to the testimony of Dr. Lyman that the concept of attractiveness depends in part on the skills and resources of adversaries seeking it, one Staff witness testified to the effect that the capabilities of terrorists to convert nuclear fuel into a nuclear weapon would depend upon their experience.[108] BREDL also provided evidence of DOE and international authorities' approaches that would treat unirradiated MOX fuel as being in a more "sensitive safeguards category."[109]

Duke nonetheless asserts that its current PSP, as bolstered by its post-9/11 measures and additional MOX-related security measures, provides for "high assurance of the protection of MOX fuel from theft or diversion."[110] Arguing that sabotage is actually a greater threat to protect against than theft because an attacker does not need to escape when sabotage is involved, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX, Duke also insists that theft presents a greater challenge to an adversary — an attacker must, according to Duke, not only gain access to the fuel building, but also find and gain access to the MOX assemblies, retrieve the material of interest, and escape with the material.[111]

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[106] *See* Staff Findings at 21-25; Duke Findings at 30-36; Tr. 3892-3908.

[107] Staff Findings at 25 (citing Tr. 5251-52, 5146-47).

[108] BREDL Findings at 20-21; Tr. 5129, 5141-43, 5274.

[109] BREDL Findings at 22-24

[110] Tr. 3873; *see also* Tr. 3884-85.

[111] Tr. 3873; *see also* Tr. 3976-77.

BREDL, on the other hand, cites NRC authority for the principle that the DBT for theft was intended to be more severe than for radiological sabotage.[112] In addition, primarily in response to Duke requests for the same, BREDL has provided certain possible scenarios for attacks on the Catawba plant, to illustrate what it sees as vulnerabilities in Duke's protection strategy. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[113]

Both Duke and the Staff provided testimony showing how these scenarios would likely fail.[114] BREDL does not consider these scenarios to be definitive tests of whether Duke can protect the MOX fuel against the DBT for theft, but argues that they nonetheless demonstrate several vulnerabilities in Duke's security program.[115]

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[112]BREDL Findings at 7-9 (citing Proposed Rule, Physical Protection of Plants and Materials, 42 Fed. Reg. 34,311 (July 5, 1977); Standard Review Plan for Safeguards Contingency Response Plans for Category I Fuel Facilities, at 19).

[113]Staff Findings at 26-27; Tr. 4993, 5001.

[114]Tr. 3924-46, 3989-4001, 4993-5006, 5013-15.

[115]Tr. 4796-97.

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XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[116] Duke disputes each of BREDL's conclusions.[117]

We move now to a more detailed discussion of facts specifically relevant to the Duke exemption requests at issue, addressing in turn the facts supporting and opposing each, along with our findings on each. We begin with the exemption requests concerning measures to assure that Catawba personnel are adequately investigated for appropriate clearances, and appropriately limited in their actions while in the plant through Duke's search and access requirements. We then turn to the exemption requests having to do with physical barrier requirements. We conclude the findings of fact with our consideration of the exemption requests that received perhaps the greatest amount of attention in the hearing — those relating to the tactical response team requirements, including provisions on what exercises are necessary to assure adequate preparedness to protect against the DBTs for radiological sabotage and theft.

[116]BREDL Findings at 42-43 (citing Tr. 4681-82).

[117]Duke Reply Findings at 18.

B. Duke Request for Exemption from Clearance Requirements

Duke has requested an exemption from the 10 C.F.R. § 11.11(b)[118] requirement that no individual be permitted to work at specified jobs without an NRC-R or NRC-U special nuclear material access authorization,[119] relying on its existing programs to justify the requested exemption.[120]

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[118]10 C.F.R. § 11.11 provides in relevant part:

> (a) Each licensee who uses, processes, stores, transports, or delivers to a carrier for transport, formula quantities of special nuclear material . . . subject to the physical protection requirements of . . . § 73.46 . . . shall identify at its facility or plant ..., describe, and . . . provide to the Commission . . . by amendment to its security plan:
>
> (1) All jobs in which an individual could steal or divert special nuclear material, or commit sabotage which would endanger the public by exposure to radiation, by working alone or in cooperation with an individual who does not possess an NRC - U special nuclear material access authorization, or by directing or coercing any individual to assist in the theft, diversion, or sabotage. Such jobs include but are not limited to:
>
> (i) All positions in the licensee's security force,
>
> (ii) Management positions with the authority to:
>
> (A) Direct the actions of members of the security force or alter security procedures, or
>
> (B) Direct routine movements of special nuclear material, or
>
> (C) Direct the routine status of vital equipment.
>
> (iii) All jobs which require unescorted access within onsite alarm stations.
>
> (iv) All jobs which require unescorted access to special nuclear material or within vital areas.
>
> (2) All jobs which require unescorted access within protected areas and which do not fall within the criterion of paragraph (a)(1) of this section.
>
> (b) After 365 days following Commission approval of the amended security plan submitted in accordance with paragraph (a) of this section, no individual may be permitted to work at any job determined by the Commission to fall within the criterion of paragraph (a)(1) of this section without an NRC -U special nuclear material access authorization, and no individual may be permitted unescorted access to any protected area at any site subject to this Part without either an NRC-U or NRC-R special nuclear material access authorization. . . .

Exceptions are provided in the rule for individuals in various circumstances who have submitted applications for the relevant clearances.

[119]*See* Exh.SEC-SAF-1, Attachment 7 at 5-7.

[120]Tr. 3963, 4409-4410.

(1) Facts Asserted to Support Exemption

Duke points out in support of its exemption request regarding clearances that many of the individuals with access to the fuel building, XXXXXXXXXXXXXXXXXXXX, are required to obtain DOE-L clearances prior to the delivery of the MOX fuel.[121] The DOE-L clearance is about the equivalent of an NRC-R clearance.[122] Therefore, many of the Duke employees involved with MOX activities will have successfully satisfied a government clearance similar to the required NRC clearances set forth in 10 C.F.R. § 11.11(b).

In addition, under Duke's existing access authorization program all individuals permitted unescorted access must undergo a background investigation similar in scope to the background investigation for NRC-U access authorization.[123] This covers all personnel who have unescorted access, including both contractors and Duke employees,[124] and includes background and criminal history checks, in accordance with the requirements in 10 C.F.R. §§ 73.56, 73.57, and portions of 10 C.F.R. Part 26.[125] Part of this process requires that Duke obtain fingerprints from each individual seeking clearance for comparison with certain FBI databases, and that checks also be made with regard to applicants' military history, employment history, education, credit history, character, reputation, emotional stability, trustworthiness, and reliability.[126] Applicants are also subjected to an initial drug and alcohol screening, followed up by random drug and alcohol testing.[127]

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[121]Tr. 4563, 4570.

[122]*See* 10 C.F.R. § 11.15(c)(3).

[123]Tr. 4410.

[124]Tr. 4569.

[125]Exh. SEC-SAF-1, Attachment 7 at 7.

[126]Tr. 3890, 3965.

[127]Tr. 3891.

Duke has also implemented a "Continuous Behavioral Observation Program" and an "Insider Mitigation Program." The former is designed to ensure that personnel continue to meet the initial standards for trustworthiness and reliability.[128] It consists of ongoing supervisory behavior observations with an objective of detecting illegal drug use, drug and alcohol abuse, and other behaviors that may indicate an unreasonable risk to the health and safety of the public.[129]

The Insider Mitigation Program is modeled after NEI-03-01, Revision 1, Nuclear Power Plant Access Authorization Program.[130] This program supplements the access authorization requirements and mandates that critical group personnel complete an initial and periodic psychological evaluation, which includes a clinical interview. Critical group personnel are also required to be reviewed annually by an immediate supervisor,[131] and to undergo a security re-investigation every three years.[132]

The NRC Staff views the requirements for granting unescorted access at Catawba as assuring that persons granted unescorted access are trustworthy and reliable.[133] The Staff also views Duke's procedures as being more robust than the requirements for an NRC-R clearance and arguably more robust than the requirements for an NRC-U clearance.[134]

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[128] *Id*.

[129] *Id*.; Tr. 4411-13, 4613-14.

[130] Tr. 3891. NEI-03-01, Revision 1 has been admitted in evidence as Exh. SEC-SAF-26.

[131] Tr. 3891.

[132] *Id*.

[133] Tr. 4975.

[134] Tr. 5012.

(2) Facts Asserted in Opposition to Exemption

Despite the fact that some aspects of Duke's access authorization procedures are more robust than the NRC-R and NRC-U clearance requirements, there are other aspects that are less stringent. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[135] Additionally, the Duke procedures do not provide for an investigation that looks specifically into whether a person has advocated the overthrow of United States government or has ties to terrorist organizations.[136]

(3) Licensing Board Findings

We find that granting Duke's request for exemption from the requirements of 10 C.F.R. § 11.11(b), regarding clearances and access authorization procedures, would not endanger life or property or be inimical to the common defense and security. We note that all of the persons who will be involved in handling the MOX fuel or unloading it will have DOE clearances.[137] The DOE clearance requirements combined with existing Duke programs appear to provide similar protection as the NRC-U and NRC-R special nuclear material access authorization requirements. Although some aspects of the Duke background checks may not be as detailed as the NRC background checks, we do not find this difference significant in light of Duke's Continuous Behavioral Observation Program and Insider Mitigation Program. Indeed,

[135] Tr. 5196-5200. *See also* Exh. SEC-SAF-26, NEI-03-01 at 8.

[136] BREDL Findings at 34; Exh. SEC-SAF-26, NEI-03-01 at 8.

[137] Tr. 4570.

Duke requires more frequent periodic updates and more continuous oversight than the NRC-U or NRC-R clearance requirements.[138]

C. Duke Request for Exemption from Access and Search Requirements

Duke requests exemption from two of the requirements of 10 C.F.R. § 73.46(d)(9)[139] — that armed guards must be posted at material access area (MAA) control points, and that all persons and materials entering MAA's must be searched.[140] Duke bases its request on its belief that, because the MOX assemblies are relatively unattractive targets, the additional measures taken to protect against theft and diversion make strict adherence to the requirements in 10 C.F.R. § 73.46(d)(9) unnecessary.[141]

(1) Facts Asserted to Support Exemption

We note preliminarily that Duke fulfills some of the requirements of 10 C.F.R. § 73.46(d)(9) as part of its compliance with 10 C.F.R. § 73.55(d), which provides that prior to entry into a PA there must be searches using various methods, for firearms, explosives, and

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[138]Tr. 5012, 5194.

[139]Section 73.46(d)(9) provides:

> The licensee shall control all points of personnel and vehicle access to material access areas, vital areas, and controlled access areas. At least two armed guards trained in accordance with the provisions contained in paragraph (b)(7) of this section and appendix B of this part shall be posted at each material access area control point whenever in use. Identification and authorization of personnel and vehicles must be verified at the material access area control point. Prior to entry into a material access area, packages must be searched for firearms, explosives, and incendiary devices. All vehicles, materials and packages, including trash, wastes, tools, and equipment exiting from a material access area must be searched for concealed strategic special nuclear material by a team of at least two individuals who are not authorized access to that material access area. Each individual exiting a material access area shall undergo at least two separate searches for concealed strategic special nuclear material. For individuals exiting an area that contains only alloyed or encapsulated strategic special nuclear material, the second search may be conducted in a random manner.

[140]Tr. 3950, 4367-68. *See also* Exh.SEC-SAF-1, Attachment 6 at 2 n.7.

[141]Tr. 3950.

incendiary devices, which is done at Catawba.[142] Duke also points out that individuals entering the Catawba PA are searched and positively identified by hand geometry biometric devices.[143] Vehicles entering the PA are also searched.[144]

Duke controls access to all vital areas (VA) XXXXXXXXXXXXXXXX, and only those with a need are granted access.[145] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,[146] and because the functional equivalent of search prior to entry to the MAA is conducted at the PA portal.[147] Therefore, Duke urges, the functional equivalent of identification and authorization of individuals and vehicles at an MAA control point is achieved through the authorization of personnel at the PA and VA boundaries, the authorization of vehicles at the PA boundaries, and XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[148]

Duke has also established security and administrative procedures to prevent inappropriate unobserved access to the MOX fuel by any individual. For example, XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[142]Tr. 3951.

[143]*Id*.

[144]*Id.*

[145]Tr. 4373-74.

[146]Tr. 4393-94.

[147]Tr. 4395-97.

[148]Tr. 4394-96.

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(2) Facts Asserted in Opposition to Exemption

Notwithstanding that all personnel are searched when they enter the PA, at the hearing Duke conceded that after armed responders enter the PA for the first time on a shift, they are XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[154] XXXXXXXXXXXXXXXXXXXXX
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[149]Tr. 3919-20.

[150]Tr. 3920.

[151]Tr. 4389.

[152]Tr. 4392.

[153]Tr. 4390-93.

[154]Tr. 4601-02.

[155]Tr. 4881.

(3) Licensing Board Findings

Given the generally high level of Duke's existing access authorization and search procedures, we find that strict compliance with the access and search requirements is not required to provide the necessary assurances for the requested exemption. We are concerned, however, about XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX.[156] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX[157] XXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[158]

The assumption that an active violent insider XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[156] Tr. 4601-02.

[157] Tr. 4585.

[158] Tr. 3934-35. *See also* Tr. 4491 ("like we mentioned earlier, somebody is going to hear the gun shot"); Tr. 4151-52 (assuming R-12 will hear gunshots); Tr.4154 (relying on sound of gun fire to alert of danger).

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We will therefore require, as a condition to granting the requested exemption to 10 C.F.R. § 73.46(d)(9), that Duke modify its security procedures to require that all persons, including all security officers, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX during the period the MOX fuel is subject to various Category I requirements as SSNM.[160]

D. Duke Request for Exemption from Physical Barrier Requirements

Duke seeks an exemption from those provisions of 10 C.F.R. § 73.46(c)(1),[161] relating to physical barrier subsystems, that require (1) vital areas and material access areas to be "located within a protected area so that access to vital equipment and to strategic special nuclear material requires passage through at least three physical barriers," and (2) the perimeter of the protected area to be "provided with two separated physical barriers with an intrusion detection system placed between the two."

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[159]Tr. 4212.

[160]The Board is aware that armed responders will be carrying sidearms and is confident that Duke can develop procedures to address the Board's concerns.

[161]10 C.F.R. § 73.46(c)(1) provides:

> (c) *Physical barrier subsystems*. (1) vital equipment must be located only within a vital area, and strategic special nuclear material must be stored or processed only in a material access area. Both vital areas and material access areas must be located within a protected area so that access to vital equipment and to strategic special nuclear material requires passage through at least three physical barriers. The perimeter of the protected area must be provided with two separated physical barriers with an intrusion detection system placed between the two. The inner barrier must be positioned and constructed to enhance assessment of penetration attempts and to delay attempts at unauthorized exit from the protected area. The perimeter of the protected area must also incorporate features and structures that prevent forcible vehicle entry. More than one vital area or material access area may be located within a single protected area.

Several definitions, found at 10 C.F.R. § 73.2(a), are of relevance in addressing these two issues. First, "physical barrier" is defined as:

> (1) Fences constructed of No. 11 American wire gauge, or heavier wire fabric, topped by three strands or more of barbed wire or similar material on brackets angled inward or outward between 30º and 45º from the vertical, with an overall height of not less than eight feet, including the barbed topping;
> (2) Building walls, ceilings and floors constructed of stone, brick, cinder block, concrete, steel or comparable materials (openings in which are secured by grates, doors, or covers of construction and fastening of sufficient strength such that the integrity of the wall is not lessened by any opening), or walls of similar construction, not part of a building, provided with a barbed topping described in paragraph (1) of this definition of a height of not less than 8 feet; or
> (3) Any other physical obstruction constructed in a manner and of materials suitable for the purpose for which the obstruction is intended.

Second, a "material access area" (or MAA) is defined as "any location which contains special nuclear material, within a vault or a building, the roof, walls, and floor of which each constitute a physical barrier." Finally, a "vital area" is any area that contains "vital equipment," which in turn is defined as follows:

> . . . any equipment, system, device, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation. Equipment or systems which would be required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital.

Duke proposes that, for the period after delivery and inspection, when the MOX fuel assemblies would be stored XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[162] With regard to the first exemption Duke seeks from Section 73.46(c)(1) — the "three-barrier" requirement — XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[162]Tr. 3946-47.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXX.[163] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX.[164] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Although Duke does not believe the second exemption noted above — regarding the PA perimeter double barrier and intrusion detection system — is necessary,[165] it has made clear that it wishes an exemption from any of the requirements of the rule “to the extent an exemption is necessary.”[166] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX.[167] In contending that an exemption is unnecessary, Duke instead seeks to rely on the third part of the physical barrier definition, asserting that the

[163] Tr. 4369, 4531-32. The floors and walls XXXXXXXXXXXXXXX are constructed of reinforced concrete, in compliance with the second Section 73.2 physical barrier definition. *See* Tr. 3947.

[164] Tr. 3947.

[165] Tr. 4539-40.

[166] Tr. 4542; *see also* Tr. 4540-41.

[167] Tr 4529, 4531-32.

fence qualifies as a “physical obstruction constructed in a manner and of materials suitable for the purpose for which the obstruction is intended.”[168]

(1) Facts Asserted to Support Exemption

Considering first Duke’s XXXXXXXXXX approach, the first obstacle facing an attacker XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXX.[169] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX.[170] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[171] XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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[168] Duke Reply Findings at 15; Duke Findings at 45-46 n. 34. *See also* Tr. 4539-42.

[169] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

[170] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

[171] Tr. 3949, 3981, 4913-15.

XXXX,[172] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX.[173] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXX.[174]

Regarding the PA perimeter double barrier and intrusion detection system requirement and any exemption from it, Duke points out that vital areas at nuclear power plants require only two barriers under 10 C.F.R. § 73.55, and that in the case XXXXXXXXXXXX the PA double fence and XXXXXXXXXX itself provide those two barriers.[175] Duke suggests that the only vital area relevant in this proceeding is XXXXXXXXXXX, and that there is no reason to require an additional barrier for other vital areas.[176] To the extent that such a third barrier would be required, essentially for the whole plant with all its vital areas as a Category I facility during the time prior to irradiation of the MOX fuel, it is argued that the only way to achieve this — XX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXX.[177] According to Staff witnesses Vanden Berghe and Burrell, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[178]

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[172]Tr. 3981.

[173]Tr. 4262, 4269.

[174]Tr. 3980.

[175]Duke Proposed Findings at 47.

[176]*Id*.

[177]*Id.*; *see* Tr. 4531-32.

[178]Tr. 5062-63, 5236-37.

(2) Facts Asserted in Opposition to Exemption

BREDL in Dr. Lyman's prefiled testimony challenged Duke's request for exemption from the three-barrier requirement XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXX, stating that the exemption is illogical and inconsistent with NRC regulations in three ways: because Duke already has an exemption from the delay requirements for unencapsulated material at Section 73.46(c)(5); XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX as provided in the third part of the definition for physical barrier.[179] These points have not, however, been followed up or expanded on in BREDL's proposed findings.[180]

BREDL does highlight Duke's failure to comply with Section 73.46(c)(1)'s double barrier and intrusion detection system requirement for the PA boundary, and we note that Duke's own witness testified that XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX.[181] As indicated above, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[182] Although BREDL recognizes that Duke orally requested an exemption from this requirement at the hearing,[183] BREDL points to Duke's failure to follow up this request with "a formal request for an exemption" as reason for denying the exemption.[184]

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[179]Tr. 4666-67

[180]*See* BREDL Proposed Findings at 35-37 (focusing entirely on the two barrier requirement for the PA); BREDL Reply Findings at 14.

[181]Tr. 4532.

[182]Tr 4532-24.

[183]Tr. 4540.

[184]BREDL Proposed Findings at 36.

(3) Licensing Board Findings

The Board finds that granting the requested exemptions from the requirements of 10 C.F.R. § 73.46(c)(1), regarding physical barriers, will not endanger life or property or be inimical to the common defense and security. With regard to the exemption for the three barrier requirement around the MAA, we find that storage of the MOX fuel assemblies XXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXX, combined with additional control and security measures, provides equivalent assurance to that which would be provided by an additional physical barrier XXXXXXXXXX. Of particular note in this regard are the provisions XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,[185] XXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

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We find that the combination XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX, in the context of Duke's other security measures as discussed above, support treating XXXXXXXXXXXXXXXXXXXXX as a reasonable alternative for a third physical barrier for the MAA at issue that would meet the 10 C.F.R. § 73.2 definition.[186]

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[185] *See* discussion above in section V.C.

[186] Tr. 3981.

We also find, in light of the above facts, that no additional barrier is required at Catawba's PA perimeter. We base this finding primarily on the Staff's testimony XXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. In light of this present-day reality, it appears that, while it would provide deterrence, XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. We find under these circumstances that permitting the exemption to the extent requested at the hearing would not endanger life or property or be inimical to the common defense and security. Moreover, we do not find any lack of a "formal" request for such an exemption to be justification for ruling otherwise. By analogy, commitments made by a licensee orally at a hearing are no less binding because they are not made in writing,[187] and in the circumstances before us we do not find any lack of formality to warrant overlooking the clear weight of the evidence supporting Duke's request.

E. Duke Request for Exemption from Tactical Response Team Requirements

For the time period at issue herein, Duke has requested an exemption from the requirement to have a tactical response team (TRT) with the attributes contained in 10 C.F.R. § 73.46(b)(3)-(12) and (h)(3).[188] Subsection (h)(3) of Section 73.46 contains the basic requirement for a TRT, and subsections (b)(3) through (b)(12) contain additional TRT-related requirements, including provisions concerning written procedures, weapons and weapons training, physical fitness, exercises, and response tactic training.

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[187] *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-01-09, 53 NRC 232, 235-36 (2001).

[188] Duke Proposed Findings at 48

We begin our analysis of this exemption request with a consideration of the parties' positions on the basic requirement for a TRT and what this encompasses. We then move to those specific TRT-related issues that are in dispute. In this regard we note that BREDL does not dispute the exemption request on TRT requirements in several respects. Although its expert, Dr. Lyman, did in his testimony touch upon types of weapons modern-day terrorists might use — i.e., XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX[189] — BREDL does not at this point challenge the actual exemption request with regard to weapons and weapons qualification. BREDL also agreed at the hearing through its expert, Dr. Lyman, that the areas of dispute concern the TRT training, physical fitness, and exercise requirements, and not those matters addressed in subsections (b)(3) through (b)(7) of Section 73.46.[190] In its Reply Findings BREDL has not challenged certain of Duke's statements with respect to (1) the "merely administrative" nature of the request for exemption from Section 73.46, subsection (b)(3), regarding written procedures, and subsection (b)(4), regarding certain weapons and other training matters; (2) the lack of a need for an exemption from subsection (b)(5), regarding no assignment of security personnel to more than one redundant element of a physical protection subsystem;[191] (3) Duke's meeting the substantive requirements of subsection (b)(6), regarding specific weapons for arming the

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[189]*See* BREDL Findings at 14; Tr. 4210. We note that XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. Staff Reply Findings at 5 (citing Tr. 3935-36, 4909-12, 4995.

[190]*See* Tr. 4774-83.

[191]Duke asserts that the requirement of 10 C.F.R. § 73.46(b)(5) that XXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXX. As an example, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

response team members; or (4) Duke's having similar weapons qualification requirements so as to justify the limited exemption it requests from subsection (b)(7).[192]

We note also that BREDL has not in its Reply Findings specifically challenged various statements in Duke's Proposed Findings to the effect that it substantially meets the requirements of subsections (b)(8), (9), and (12), or that relevant aspects of its security system are equivalent to these requirements. It did, however, challenge these in its evidence and Proposed Findings, primarily Duke's request for exemption from certain of the requirements for force-on-force and other exercises required under subsection (b)(9), and also the request for exemption from subsections (b)(8), on training in response tactics, and (b)(12), on physical fitness requirements for security team members.[193]

Based on the preceding, we will focus our inquiry, first, on the Section 73.46(h)(3) TRT requirement itself, including the definition of a TRT and what this encompasses; and then on the training and physical fitness requirements of Section 73.46(b)(8) and (b)(12); and the exercise requirements of Section 73.46(b)(9). For each, we summarize pertinent facts asserted in support of and opposition to the exemption. We state our findings on all the TRT-related requirements at the end of this section (V.E).

(1) Requirement for a TRT

The requirement for a tactical response team is stated as follows, at Section 73.46(h)(3):

> A Tactical Response Team consisting of a minimum of five (5) members must be available at the facility to fulfill assessment and response requirements. In addition, a force of guards or armed response personnel also must be available to provide assistance as necessary. The size and availability of the additional force must be determined on the basis of site-specific considerations that could affect the ability of the total onsite response force to engage and impede the

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[192] *See* Duke Proposed Findings at 50-53; BREDL Reply Findings at 15.

[193] Tr. 4782-83.

> adversary force until offsite assistance arrives. The rationale for the total number and availability of onsite armed response personnel must be included in the physical protection plans submitted to the Commission for approval.

In addition, Section 73.2 states that "[*t*]*actical response team* means the primary response force for each shift which can be identified by a distinctive item of uniform, armed with specified weapons, and whose other duties permit immediate response."

a. Facts Asserted to Support Exemption

Duke's primary argument with regard to the requirement for a tactical response team is to the effect that its minimum staffing will provide protection at least equivalent to that which would be provided with a TRT, and thus exemption from many of the subsections of Section 73.46 would be "merely administrative, required only because Catawba will not use an armed response team labeled as a 'TRT.'"[194] Although Duke agrees that some of its requests involve more substantive issues, it insists that, "[f]rom an overall performance perspective" its minimum staffing, as it has committed, will "provide protection at Catawba at least equivalent to that which would be provided at a Category I location with a TRT."[195] Duke notes that neither the weaponry of its responders nor the distinctive dress of the responders, which sets them apart from other plant workers, is challenged. Also in this regard, Duke asserts that its management system and security procedures are equivalent to those required under 10 C.F.R. § 73.46(b)(3), (b)(4), and Appendix B to Part 73, and that, in any event, BREDL's "scenarios" for theft attacks on Catawba have not in Duke's estimation been shown to be able to defeat Duke's security force.[196]

The Staff essentially agrees with Duke that a formally-named "TRT" is not necessary, and that, with the additional measures Duke has already undertaken, a TRT as defined in the

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[194]Duke Proposed Findings at 48.

[195]*Id.*

[196]Tr. 3953-56.

regulation is not required to protect the MOX LTAs.[197] The numbers of responders that Duke has are in the Staff's view sufficient, in that they exceed the 5-member requirement of subsection (h)(3), and are experienced and expert enough to handle complex command and control demands and other relevant security requirements.[198]

b. Facts Asserted in Opposition to Exemption

BREDL disputes Duke's claim that its armed response team is the equivalent of a TRT except for the name, arguing that Duke's armed responders fail to meet the definition of a TRT because they do not have the "same fundamental purpose of the TRT, which is to serve as the primary response force in the event of an attempted theft of Category I SSNM."[199] BREDL suggests that XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX.[200]

BREDL cites the preamble to the original rule imposing the TRT requirement for the principle that the TRT is to be a "more highly motivated, professional, and effective organization[ ] to respond to and prevent forceful attempts to remove SSNM from licensee sites."[201] Arguing that the TRT was therefore intended to be separate from the regular security

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[197]Staff Findings at 39-40.

[198]*Id.* at 40-41.

[199]BREDL Reply Findings at 14-15.

[200]BREDL Proposed Findings at 29. *See* Tr. 4755.

[201]*Id.* at 27-28 (citing Final Rule, Safeguards Requirements for Fuel Facilities Possessing Formula Quantities of Strategic Special Nuclear Material, 53 Fed. Reg. 45,447, 45,448 (Nov. 10, 1988)).

force, with higher qualifications, BREDL argues that Duke's armed responders are not the equivalent to a TRT.[202] Noting Duke's argument that XXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[203]

In addition, BREDL cites testimony of Duke expert Williams that, XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[204] BREDL argues that this indicates a lack of understanding on the part of Duke of the reasoning behind the TRT requirement, and emphasizes what it views as an inconsistency in allowing the armed responders to have other duties and relying on "supplemental responders," on the one hand, and on the other, being committed, as BREDL asserts Duke must be, to protecting the MOX fuel from theft, with no other duties.[205] BREDL suggests that XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[206]

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[202] *Id.* at 28-29.

[203] *Id.* at 30.

[204] BREDL Findings at 31; Tr. 4109-10.

[205] *See* BREDL Findings at 31-33.

[206] *Id.* at 30-31.

(2) TRT Training Requirements

a. Facts Asserted to Support Exemption

Duke states that the only reason it requests an exemption from the requirement of 10 C.F.R. § 73.46(b)(8)[207] is that the language of the section references a "Tactical Response Team"; it contends that it meets the requirements substantively, and that the training of its responders is essentially equal to that required for members of a TRT.[208] According to its witnesses at the hearing, Duke's security training and qualification plan implements the requirements of 10 C.F.R. § 73.55(b)(4)(i), (ii), which define requirements for nuclear power reactors.[209] Catawba's armed responders are, according to Duke witnesses, required to successfully complete training in response tactics, consisting of both classroom and practical training, in areas including handgun, rifle and night fire stress courses; room entering and clearing techniques; cover and concealment tactics; team entry tactics; moving and maneuvering techniques; and the use of the equipment the security officers may have, such as bullet-resistant vests, pepper spray, and the like.[210] The training program is performance-based, and includes 28 critical tasks, distributed among various duty positions. Each security force member is initially trained and qualified to perform the critical tasks applicable to his or her

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[207] 10 C.F.R. § 73.46(b)(8) provides:

> In addition to the training requirements contained in appendix B of this part, Tactical Response Team members shall successfully complete training in response tactics. The licensee shall document the completion of training. The licensee shall retain the documentation of training as a record for three years after training is completed.

[208] Duke Proposed Findings at 54; *see* Tr. 3953-66.

[209] Tr. 3881.

[210] Tr. 3959, 4317-19

position, and must take a written examination and demonstrate various skills and abilities through actual performance.[211]

The Staff agrees that the training of the Catawba security force is adequate.[212]

b. Facts Asserted in Opposition to Exemption

BREDL expert Lyman testified that the Catawba responders should have enhanced training commensurate with that for the heightened threat against which a TRT is intended to protect, but offered little if any specific evidence to establish that the training offered was inadequate to meet the standards for a TRT.[213]

(3) TRT Physical Fitness Requirements

a. Facts Asserted to Support Exemption

Although Duke does not test its responders' physical fitness every three months as required under 10 C.F.R. § 73.46(b)(12),[214] it contends that its annual fitness qualification

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[211]Tr. 3881-82.

[212]Staff Findings at 40.

[213]*See*, *e.g.*, Tr. 4776.

[214]10 C.F.R. § 73.46(b)(12) provides:

> The licensee may elect to comply with the requirements of this paragraph instead of the requirements of paragraphs (b)(10) and (b)(11) of this section. In addition to the physical fitness qualifications of paragraph I.C of Appendix B of this part, each licensee subject to the requirements of this section shall develop and submit to the NRC for approval site specific, content-based, physical fitness performance tests which will — when administered to each Tactical Response Team member, armed response person, or guard — duplicate the response duties these individuals may need to perform during a strenuous tactical engagement.
>
> (i) The test must be administered to each Tactical Response Team member, armed response person, and guard once every 3 months. The test must specifically address the physical capabilities needed by armed response personnel during a strenuous tactical engagement at the licensed facility. Individuals who exceed 3 months without having been administered the test due to excused time off from work must be tested within 15 calendar days of returning to duty as a Tactical Response Team member, armed response person, or guard.
>
> (ii) Within 30 days before the first administration of the physical fitness performance test, and on an annual basis thereafter, Tactical Response Team members, armed response personnel, and guards shall be given a medical examination

(continued...)

procedures are equivalent to the requirements of subsection (b)(12). Duke commissioned the company, Human Performance Systems, Inc. (HPS), to analyze the job tasks performed by the armed officers and develop a battery of tests to determine whether officers are capable of meeting the specific physical demands of the job. The test includes completing 20 sit-ups within 60 seconds, three arm lifts with an average of 50 as indicated by the "Jackson Evaluation System," and 88 revolutions on a stationary bicycle within 60 seconds.[215] In addition, officers are required to undergo a comprehensive physical examination prior to undergoing the test, and physical condition is monitored, for example, during stress firing.[216] Finally, Duke insists, security force supervisors monitor officers on the job, where they have demonstrated their ability to perform the physical tasks necessary to implement Duke's protective strategy.[217]

The Staff agrees that Duke's physical fitness program is adequate to ensure that its officers can protect the MOX fuel.[218]

b. Facts Asserted in Opposition to Exemption

As with the training requirement, BREDL has offered little specific argument or evidence on this issue, other than to refer to the general need for more physically fit responders, in

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[214](...continued)
including a determination and written certification by a licensed physician that there are no medical contraindications, as disclosed by the medical examination, to participation in the physical fitness performance test.

(iii) Guards whose duties are to staff the central or secondary alarm station and those who control exit or entry portals are exempt from the performance test specified in paragraph (b)(12) of this section, provided that they are not assigned temporary response guard duties.

[215]Tr. 3961.

[216]*Id*.

[217]Tr. 3962.

[218]Staff Findings at 40.

accordance with the intent of the rule to establish a more "professional and effective organization."[219]

(4) TRT Exercise Requirements

Section 73.46(b)(9)[220] requires the conducting of exercises to demonstrate overall security system effectiveness, as well as ability to perform response and contingency plan responsibilities, and individual skills. These are required to be performed quarterly the first year, with half to be force-on-force exercises. Under the rule, the NRC is to observe one force-on-force exercise yearly, and a licensee must document the results of all exercises. It does not appear that Catawba's security force has been observed and evaluated in any force-on-force exercises by the NRC since 1997, and it is unclear when another such exercise will take place.[221]

a. Facts Asserted to Support Exemption

Duke's security officers participate in limited scope drills, table-top exercises, and tactical drills every quarter. Duke concedes that the frequency of its training exercises is

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[219] *See*, *e.g.*, Tr. 4775-77, 4779.

[220] Section 73.46(b)(9) requires the following with regard to TRT exercises:

> (9) The licensee shall conduct Tactical Response Team and guard exercises to demonstrate the overall security system effectiveness and the ability of the security force to perform response and contingency plan responsibilities and to demonstrate individual skills in assigned team duties. During the first 12-month period following the date specified in paragraph (i)(2)(ii) of this section, an exercise must be carried out at least every three months for each shift, half of which are to be force-on-force. Subsequently, during each 12-month period commencing on the anniversary of the date specified in paragraph (i)(2)(ii) of this section, an exercise must be carried out at least every four months for each shift, one third of which are to be force-on-force. The licensee shall use these exercises to demonstrate its capability to respond to attempts to steal strategic special nuclear material. During each of the 12-month periods, the NRC shall observe one of the force-on-force exercises which demonstrates overall security system performance. The licensee shall notify the NRC of the scheduled exercise 60 days prior to that exercise. The licensee shall document the results of all exercises. The licensee shall retain the documentation of each exercise as a record for three years after each exercise is completed.

[221] Tr. 5158.

"somewhat less than that for a TRT" as required at subsection (b)(9), but contends that this frequency is adequate, given its experience with exercises that have been conducted and its plans to take remedial steps if any weaknesses are found.[222] In addition, Duke notes that, XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX, it has more armed responders than are required at 10 C.F.R. § 73.46(h)(3) in each Catawba security team, and asserts that this is sufficient to meet all relevant security objectives, particularly given that it has demonstrated its ability in exercises and force-on-force drills.[223] Any differences between Duke's security force and a Tactical Response Team under the regulations are "minor at best," Duke insists, and the force meets requirements "equivalent to those" in the regulations.[224]

During the hearing Duke witnesses described the exercises that have been done as "assum[ing] the worst case," and stated that, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[225] The essential characteristic that Duke witnesses described was that of XXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXX.[226] In addition, however, Duke insisted XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[227]

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[222]Tr. 3960.

[223]Tr. 3962; 3983; *see* Tr. 4041-59.

[224]Tr. 3962-63.

[225]Tr. 4060.

[226]Tr. 4060; *see* 4058-65.

[227]Tr. 4060-61.

In addition to the preceding, Duke argues that its existing security force, as described above, already provides robust protection against radiological sabotage and is supplemented by specific measures that provide adequate justification for the exemptions it requests from provisions requiring a tactical response team and related training and other attributes.[228] According to Duke, a nuclear power plant has a "different underlying defensive strategy . . . [than] that developed for NRC licensed fuel cycle facilities possessing Category I material."[229] In contrast to a strategy of preventing attackers who have already reached a location where SSNM is found from leaving a site, and retaking the location, XXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX X.[230] Thus, Duke argues, if access is prevented, "this would successfully thwart the theft of the material."[231]

b. Facts Asserted in Opposition to Exemption

BREDL emphasizes that Duke has not done any exercises testing any XXXXXXXXXX, nor have there been any exercises XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XX.[232] Although Duke's witnesses argued that it can XXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXX, BREDL suggests that it is important to test such hypotheses, because performance testing is the best method to assess whether a protective

[228]Tr. 3952.

[229]Tr. 3952.

[230]Tr. 3953.

[231]*Id.*

[232]BREDL Findings at 31, 43; Tr. 4430-33, 4582-83, 4634, 4638; *see* Tr. 4737.

strategy will work.[233] In addition, BREDL notes that Duke XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXX.[234]

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[235]

(5) Licensing Board Findings on TRT Requirements

We find that the preponderance of the evidence is that Duke’s training and physical fitness testing of its armed security officers at Catawba are sufficient to support a finding that exemption from these requirements will not endanger life or property or the common defense and security.

With regard to the question of whether Catawba’s armed responders meet the fundamental definition of a TRT, we find that the size of the force, as well as the assigned duties of the members of the force are such that neither the lack of the designation, “Tactical Response Team,” nor the lack of different or distinctive uniforms, renders the force significantly different from the definitions quoted above. The training of the responders in response tactics supports this determination, as does the evidence concerning the ability of a sufficient number of the responders, in the context of their other duties, to respond immediately to any threat. We do, however, have concerns regarding two issues that we find should be addressed in order to

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[233]Tr. 4738-43, 4756.

[234]BREDL Findings at 39; Tr. 4488.

[235]BREDL Findings at 40-41 (citing Tr. 5166-70, 5276; Exh. SEC-SAF-5).

assure that Catawba's security force is adequate to perform the functions a TRT is designed to serve.

First, with regard to the coverage provided by the force, BREDL has pointed out that XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX[236] — XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[237] XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.[238] XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX.

Second, we note that Duke was still, at the time of the hearing, in the process of completing development of certain procedures.[239] This lack of finalization of various procedures includes XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. These should be finalized, memorialized in writing, and implemented, in order to provide the necessary assurances under the relevant regulatory standards.

[236] Tr. 4682; *see* Tr. 4504.

[237] Tr. 4144; Exh's. SEC-SAF-4, SEC-SAF-9.

[238] Tr. 4504, 4610-11.

[239] *See* Tr. 4089-91.

Regarding TRT exercises, we also have several concerns. We note that XXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,[240] XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX, the lack of exercises that would test more precisely XXXXXXXXXXXX at issue herein lends greater significance to this situation. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,[241] XX XXXXXXXXXXXXXXXXXXXXXXXXXXX. We are troubled by this absence and XXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. Exercises testing the security force XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX — would be appropriate, in our view, to provide the requisite high assurance of protection against such a threat, and would also provide Catawba's security force with an opportunity to test its command and control procedures in such a scenario. Finally, the lack of any NRC-observed exercises, although not in the control of Duke, also concerns us.

The evidence and argument presented by Duke and the Staff regarding the relative attractiveness of the MOX fuel assemblies, while it has merit to a point, does not convince us that the material in the assemblies would not be at all attractive to a group of terrorists intent on obtaining nuclear material, in the context of today's world of terrorist threats. Nor are we persuaded that terrorist organizations would not have the resources, experience or expertise to

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[240] *See* Tr. 4697.

[241] *See* discussion in Conclusions of Law below.

undertake the necessary tasks to make use of MOX fuel to construct some sort of a nuclear weapon. As a practical matter, attractiveness would be related to the experience and abilities of those in whose eyes any such "attractiveness" is measured.

Based on the these considerations, we find that, in order to assure that Duke's exemption request with regard to 10 C.F.R. § 73.46(h)(3) and (b)(9) meets the standards of 10 C.F.R. §§ 73.5 and 73.20, the following conditions must be satisfied:

Prior to receipt of the MOX fuel at Catawba, Duke must demonstrate its ability to counter an attempt at theft of the MOX fuel material by undertaking tabletop and force-on-force exercises, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX. Detailed reports of the results of these exercises shall be provided on a timely basis to the NRC Staff for its consideration and analysis, as deemed appropriate in the Staff's discretion. While we do not claim jurisdiction to direct the Staff in the performance of its duties,[242] NRC Staff attention to the exercises in question, including observation of appropriate force-on-force exercises using theft scenarios with an adversary that has "the ability to operate as two or more teams," would considerably enhance the usefulness and validity of Duke's protection strategy.

During any period of time from receipt of the MOX fuel to the completion of loading the assemblies into the core, Duke shall ensure that the part of the XXXXXXXXXXXXXXXXXXXXX XXXXX is continuously monitored.

Finally, Duke shall assure that all procedures and responsibilities identified during the hearing as being needed to support the receipt, inspection, placement and storage XXXXXXX XXXXX, and loading into the core of the MOX fuel, are clearly defined, finalized, memorialized

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[242]*See* CLI-04-6, 59 NRC at 74.

in writing, implemented, properly communicated and coordinated as necessary with all involved agencies, and actually accomplished in a timely manner. These shall include, but not be limited to: (A) procedures for coordinating the transfer of the MOX assemblies from DOE; (B) procedures and timelines for coordinating interactions with local law enforcement agencies; (C) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX; and (D) the commitment to ensure that all armed responders are dedicated to the protection of the MOX fuel. Duke shall provide timely and detailed reports on the completion of such tasks to the NRC Staff for its consideration and analysis, as deemed appropriate in the Staff's discretion.

VI. CONCLUSIONS OF LAW

In reaching the preceding findings and defining the preceding conditions, we have considered the parties' arguments with regard to the proper interpretation of certain language in the DBT for theft of SSNM found at 10 C.F.R. § 73.1(a)(2)(i)(F). The parties differ in their interpretation of this language. The dispute centers on the proper interpretation of the words, "small group with . . . the ability to operate as two or more teams."

The Staff and Duke urge that we interpret the words, "two or more teams," according to their "plain meaning" or "plain language," which is argued to be "clear," "unambiguous," and "obvious."[243] The Staff cites the observation of an earlier licensing board that, "where . . . the meaning of a regulation is clear and obvious, the regulatory language is conclusive and we may

[243]Staff Brief at 4; Duke Proposed Findings at 41. Duke also argues that "a definitive resolution of the issue is not required in order to reach a decision on the contested issues in this case [because] Duke had . . . demonstrated the capability to defend against an adversary whether it operates as two teams or more than two teams (XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX)." Duke Reply Findings at 5. As indicated above in Section V of this decision, we do not find that Duke has provided such a demonstration, and so address in this section the issue that was placed before us at the hearing.

not disregard the letter of the regulation. Rather, we must enforce the regulation as written."[244] Moreover, the Staff notes, we "may not read unwarranted meanings into an unambiguous regulation even to support a supposedly desirable policy that is not effectuated by the regulation as written."[245]

Focusing on the words, "two or more teams," the Staff insists that a licensee "is required to be able to defend against two *or* more," and "[t]herefore, the regulatory requirement is met by defending against two teams."[246] The Staff emphatically states that "'two or more' means simply that; it does not mean 'more than two.'"[247] The Staff also cites six other regulations that contain the phrase, "two or more," urging that "[c]hanging the interpretation of the phrase 'two or more' to mean 'more than two' with regard to § 73.1(a)(2)(i)(F), would potentially change the meaning of all regulations containing that qualifier."[248]

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[244]Staff Brief at 4 (citing *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), LBP-95-17, 42 NRC 137, 145 (1995)).

[245]*Id.* at 4-5 (quoting *Perry*, 42 NRC at 145).

[246]*Id*. (emphasis in original).

[247]*Id*. at 5.

[248]*Id.* The Staff cites the following sections, which provide in relevant part as indicated:

> 10 C.F.R. § 50.54(m)(2)(ii): Each licensee shall have at its site a person holding a senior operator license for all fueled units at the site who is assigned responsibility for overall plant operation at all times there is fuel in any unit. If a single senior operator does not hold a senior operator license on all fueled units at the site, then the licensee must have at the site two or more senior operators, who in combination are licensed as senior operators on all fueled units.
>
> 10 C.F.R. § 50.61(c)(2)(i)(C): Where there are two or more sets of surveillance data from one reactor, the scatter of ΔRT_{NDT} values must be less than 28°F for welds and 17°F for base metal. Even if the range in the capsule fluences is large (two or more orders of magnitude), the scatter may not exceed twice those values.
>
> 10 C.F.R. § 50.73(a)(2)(ix)(A): Any event or condition that as a result of a single cause could have prevented the fulfillment of a safety function for two or more trains or channels in different systems that are needed to . . .
>
> 10 C.F.R. § 50.109(a)(7): If there are two or more ways to achieve compliance with a

(continued...)

With regard to the word, “group,” the Staff concedes that its use “is not as clear,”[249] but urges us, relying on the Webster’s definition of “group,” to construe the word as meaning “a minimum of two.”[250]

On the word “group,” BREDL compares the terms “small group” (found in the DBT for theft at 10 C.F.R. § 73.1(a)(2)) and “several persons” (found in the DBT for radiological sabotage at 10 C.F.R. § 73.1(a)(1)), noting that it has inferred from discovery documents that the words, “several persons,” “XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX.”[251] Thus, BREDL argues, relying on historical support for the proposition that the DBT for theft of SSNM was developed to be more challenging than the

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[248](...continued)
license or the rules or orders of the Commission, or with written licensee commitments, or there are two or more ways to reach a level of protection which is adequate, then ordinarily the applicant or licensee is free to choose the way which best suits its purposes. However, should it be necessary or appropriate for the Commission to prescribe a specific way to comply with its requirements or to achieve adequate protection, then cost may be a factor in selecting the way, provided that the objective of compliance or adequate protection is met.

10 C.F.R. § 73.24(b)(1): The licensee shall confirm and log the arrival at the final destination of each individual shipment and retain the log for three years from the date of the last entry in the log. The licensee shall also schedule shipments to ensure that the total quantity for two or more shipments in transit at the same time does not equal or exceed the formula quantity . . .

10 C.F.R. § 73.67(e)(7): If, after receiving advance notice pursuant to § 73.72 from a licensee planning to import, export, transport, deliver to a carrier for transport in a single shipment, or take delivery at the point where it is delivered to a carrier, special nuclear material of moderate strategic significance containing in any part strategic special nuclear material, it appears to the Commission that two or more shipments of special nuclear material of moderate strategic significance, constituting in the aggregate an amount equal to or greater than a formula quantity of strategic special nuclear material, may be en route at the same time, the Commission may order one or more of the shippers to delay shipment according to the following provisions . . .

[249]Staff Brief at 5.

[250]*Id*. at 5-6.

[251]Tr. 4671-72; BREDL Proposed Findings at 11.

DBT for sabotage,[252] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX."[253] XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XX, BREDL suggests, we should regard "two or more teams" as meaning "at least three teams."[254] In support of this interpretation, BREDL cites *Sutherland on Statutes and Statutory Construction* for the principle that, "while the use of the disjunctive (*i.e.*, the word 'or') usually indicates alternatives and requires that those alternatives be treated separately, it is 'important not to read the word 'or' too strictly, where to do so would render the language of the statute dubious.'"[255]

We begin our analysis of the language in question by noting the fundamental principle cited by the Staff, that "[w]hen the words of a statute are unambiguous, then . . . 'judicial inquiry is complete'" — a principle recognized in NRC case law to apply equally to the words of a regulation.[256] Thus, where "the meaning of a regulation is clear and obvious, the regulatory language is conclusive and we may not disregard the letter of the regulation."[257] Indeed, it has

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[252]BREDL Proposed Findings at 7, 11, 13-14; Proposed Rule, Physical Protection of Plants and Materials, 42 Fed. Reg. 34,310 (July 5, 1977). The Commission in its discussion of the proposed rule stated:

> The difference in the design basis for required levels of protection at power reactors and fuel cycle facilities reflects the relative differences in the potential consequences of successful sabotage at a reactor and theft of strategic special nuclear material and subsequent detonation of a nuclear explosive device. The consequences of reactor sabotage are generally less severe than detonation of a nuclear explosive device. While these considerations are not amenable to precise quantification they have been reflected in the general performance requirements associated with § 73.55 and the proposed amendments.

42 Fed. Reg. at 34,311.

[253]BREDL Proposed Findings at 11.

[254]BREDL Proposed Findings at 13.

[255]BREDL Reply Findings at 11-12 (quoting Norman J. Singer, Sutherland on Statutes & Construction § 21.12 (6th Ed. 2000)).

[256]*Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), LBP-95-17, 42 NRC 137, 145 (1995); *see* Staff Brief at 4.

[257]*Perry*, 42 NRC at 145.

been stated that "the wording of a regulation generally takes precedence over any contradictory suggestion in its administrative history."[258] Our "first step," then, as the Supreme Court observed in *Robinson v. Shell Oil Co.*, is "to determine whether the language at issue has a plain and unambiguous meaning with regard to the particular dispute in the case. Our inquiry must cease if the . . . language is unambiguous and 'the [regulatory] scheme is coherent and consistent.'"[259] Moreover, the "plainness or ambiguity of statutory language is determined by reference to the language itself, the specific context in which that language is used, and the broader context of the statute [or regulation] as a whole."[260]

We will, thus, read the language at issue in context, both the specific context of the phrase, "small group with . . . the ability to operate as two or more teams," and the broader context of the regulation as a whole, defining the design basis threat against which a licensee must be able to defend itself. In doing this, we see that, despite a certain facial appeal of the interpretation argued by the Staff and Duke, contrary to their focus on separate small *parts* of the regulation in question the proper focus under *Robinson* is on the *entire* phrase, *in context*. This leads us to consideration of what sort of group a licensee must be able to defend against as part of the DBT, in terms of *the group's* attributes and abilities — including the group's "*ability to operate*" as two or more teams. In this DBT context, the phrase, "small group with . . . the ability to operate as two or more teams," might reasonably be read as requiring that a licensee must be able to defend against a group *that has the ability to operate alternatively as two or more teams*. The critical concept here is the ability *of the group* to divide into two or more teams, *not* the option of the licensee to choose the particular characteristics of the

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[258] *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 469 (1982).

[259] *Robinson v. Shell Oil Co.*, 519 U.S. 337, 340 (1997).

[260] *Id.* at 341.

adversary group's ability. It might, indeed, arguably be said that there is no ambiguity in the requirement that a licensee must be prepared to defend against a small group with the ability not only to divide into two teams but also, alternatively, to divide into more than two teams.

Assuming, however, there to be an ambiguity in the language in question, based on the Staff's proposed alternative reading of it, as well as the use of the word, "or," on which the Staff heavily relies, we look more closely at the proper interpretation of the word "or" in the phrase in question. We note, from *Sutherland* (probably the foremost treatise on statutory and regulatory construction), the importance of not reading the word "or" too strictly, "where to do so would render the language of the statute dubious." We note also the Supreme Court's observations on ambiguities associated with the word "or."

First, Justice Harlan, writing for the Court in 1956, observed:

> We start with the proposition that the word 'or' is often used as a careless substitute for the word 'and'; that is, it is often used in phrases where 'and' would express the thought with greater clarity. That trouble with the word has been with us for a long time.[261]

More recently, the Court has observed that "[c]anons of construction ordinarily suggest that terms connected by a disjunctive [i.e., 'or'] be given separate meanings, *unless the context dictates otherwise*."[262]

The context in this case quite obviously "dictates otherwise." Otherwise, in a regulation defining the threat against which a licensee must defend itself, would be found an anomalous provision that would permit, for no apparent reason, a licensee to choose between a more and a less rigorous requirement. The context of the language, as discussed above, is the DBT against which a licensee *must* be able to defend itself, including a "group" *that has the "ability to*

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[261] *De Sylva v. Ballentine*, 351 U.S. 570, 573 (1956).

[262] *Reiter v. Sonotone Corp*, 442 U.S. 330, 339 (1979) (emphasis added); *see also Unification Church v. INS*, 762 F.2d 1077, 1084 (D.C. Cir. 1985).

operate as two or more teams." The critical, operative concept is, as we note above, the ability of the group to divide into two or more teams, *not* the option of the licensee to choose the particular characteristics of the adversary group's ability. Thus, the licensee must assume that the adversary group will have the ability to operate as two or more teams alternatively, and a minimal group size would, as BREDL argues, be XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXX.[263]

Our reading of the rule is not at all inconsistent with other rules that use the term "two or more," in various contexts — all of which must obviously be interpreted in their respective contexts. Consideration of just one of the examples posed by the Staff illustrates that the term "two or more" may indeed mean that a licensee may need to prepare to address not only "two" instances but also *more than two* instances of the subject matter of a rule.

10 C.F.R. § 73.24(b)(1) provides as follows:

> The licensee shall confirm and log the arrival at the final destination of each individual shipment and retain the log for three years from the date of the last entry in the log. The licensee shall also schedule shipments to ensure that the total quantity for two or more shipments in transit at the same time does not equal or exceed the formula quantity . . . .

It is obvious that a licensee may not choose between two shipments or more than two shipments in complying with the requirement of this provision. The quantity of material shipped by a licensee in *any* number of shipments — two *or more* — in transit at the same time must, in total, consist of an amount less than the formula quantity. The interpretation urged by the Staff and Duke would in effect allow a licensee to choose *either* two *or* more shipments when totaling the amount of material that may be shipped at the same time — i.e., a licensee could theoretically choose the "two shipment" option in doing its required totaling, and ship multiple

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[263]We are aware that there was some testimony to the effect that a "team" might consist of one person. We have considered the word, however, in its ordinary meaning of a "number" or "group" of persons, for example, *see* Webster's Third New International Dictionary of the English Language, Unabridged (1976), such that two would be the minimum number of persons who could make up a team.

sets of *two* shipments, *each* set totaling less than a formula quantity, but all of which together would total an amount greater than a formula quantity. Such an interpretation would be contrary, of course, to the obvious intent and purpose of the rule, including the words "two or more" read in context, which is that *any* multiple number of shipments in transit at the same time — two, three, four, or more — must not, in total, consist of an amount "equal [to] or exceed[ing] the formula quantity."[264]

Similarly, reading the rule whose interpretation is now before us to allow the licensee to choose what the ability of the adversary group would be, in terms of how many teams the adversary would be able to divide into in making an attack, in the context of a rule that defines a DBT and refers to a "small group with . . . the ability to operate as two or more teams," would counter the stated purpose of the rule. Specifically, Section 73.1(a) begins as follows: "*Purpose.* This part prescribes requirements for the establishment and maintenance of a physical protection system . . . ." The plain purpose of the rule is to *prescribe* those threats against which licensees are *required* to be prepared to defend themselves — *not* merely to list threats among which licensees may choose to defend themselves. A licensee must under the rule be prepared to defend against an adversary group that *has the ability to operate alternatively* in two *or more* groups.

Therefore, based both on well-established principles of statutory construction and on the purpose of the regulation at issue as determined by its context and language, we find that Duke, as a licensee covered by the rule, is required to be prepared to defend itself against an adversary group with the ability to operate in alternative configurations: in two teams or in more

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[264]As is true regarding Section 73.1(a)(2), it is possibly because substitution of the word "and" for "or" would produce an awkward phrasing that the drafters of Section 73.24 (b)(1) used the phrase, "two or more." With 20/20 hindsight we can say that more precise drafting might in both instances have made use of the word, "multiple," which would have avoided any ambiguity. We must in any event, of course, interpret regulations as written, which we have done herein.

than two teams — which means, from Duke's perspective, that it must be prepared to defend against an attack by two teams of adversaries, as well as against an attack by more than two teams of adversaries. In addition, we note that, although this is not necessary to our analysis, the DBT for theft of SSNM was obviously intended to be more challenging than that for radiological sabotage.

As to the number of adversaries in each team, the argument has centered on the word "squad." We will not venture to rule on this, as it involves not only an unnecessary inquiry for our decision herein, but, insofar as it involves consideration of actual numbers of attackers (XXXXXXXXXXXXXXXXXXXXXXXXXXXXX) that would be considered to be part of the enhanced post-9/11 design basis threat for any nuclear power reactor or any Category I fuel fabrication facility, this would also take us into Safeguards and Classified information that the Commission has directed is essentially irrelevant in this proceeding. We note, however, with regard to the first of the conditions we set in section V.E(5), that the scenario contemplated does not presume any such total number of attackers, but rather merely those that might conservatively remain to be dealt with in a theft scenario, XXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Having now resolved the critical legal issue relating to our ultimate findings and conclusions in this portion of this proceeding, we conclude, subject to Duke's satisfaction of the conditions stated in Sections V.C(3) and V.E(5) above, that the preponderance of the evidence is that the requested exemptions from the provisions of 10 C.F.R. §§ 11.11(b) and 73.46(d)(9), (c)(1), (h)(3), and (b)(8),(9), and (12), will not, as required under 10 C.F.R. §§ 11.9 and 73.5, endanger life or property or the common defense and security; and that Duke's physical protection system, with the requested exemptions, will, during the time the MOX fuel at Catawba constitutes strategic special nuclear material (SSNM) as defined at 10 C.F.R. § 73.2,

provide high assurance that activities involving the MOX fuel will not be inimical to the common defense and security nor constitute an unreasonable risk to the public health and safety, as required at 10 C.F.R. § 73.20(a). We further conclude, based on the preceding, that the requested license amendment is appropriate as required at 10 C.F.R. § 50.92(a).

In reaching the preceding conclusions we also find that, as required at 10 C.F.R. § 73.5, the requested exemptions are in the public interest. Specifically, the public interest in nuclear non-proliferation is a significant interest, and although the means of achieving this must be well thought out and safe — concerns we address in our discussion in the previous section of this decision — we find that, with satisfaction of the conditions we have defined, the preponderance of the evidence is that this can be assured. We note in this regard the nature of the proposal before us — as the Staff points out, the purpose of the lead test assembly effort is to test whether the MOX fuel performs as expected in a nuclear power reactor in the United States.[265] Thus, in this sense the proposal itself is geared toward assuring safety, and may provide valuable experience and information in furtherance of nuclear nonproliferation in the United States and Russia.[266]

VII. ORDER

1. Duke's LAR and requested exemptions, as discussed herein, are approved, subject to the conditions set forth above in Sections V.C(3) and V.E(5) above, namely:

> A. Duke shall modify its security procedures to require that all persons, including all security officers, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX during the period the MOX fuel is subject to various Category I requirements as SSNM.

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[265] *See* Staff Findings at 5.

[266] We do not, of course, in our findings and conclusions herein, state any opinion on what exemptions might or might not be appropriate in any LAR for batch use of MOX fuel, which would involve more and likely longer time periods of having unirradiated MOX fuel onsite at any plant involved in any such use, and consequently greater potential security impacts than are involved in the matter before us.

B. Prior to receipt of the MOX fuel at Catawba, Duke must demonstrate its ability to counter an attempt at theft of the MOX fuel material by undertaking tabletop and force-on-force exercises, XXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX, that is relevant in light of the considerations addressed herein. Detailed reports of the results of these exercises shall be provided on a timely basis to the NRC Staff for its consideration and analysis, as deemed appropriate in the Staff's discretion. While we do not claim jurisdiction to direct the Staff in the performance of its duties, NRC Staff attention to the exercises in question, including observation of appropriate force-on-force exercises XXXXX XXXXXXXXXXX with an adversary that has "the ability to operate as two or more teams," would considerably enhance the usefulness and validity of Duke's protection strategy.

C. During any period of time from receipt of the MOX fuel to the completion of loading the assemblies into the core, Duke shall ensure that the part of the XXXXXXXXXXXXXXXXXXXXXXX is continuously monitored.

D. Duke shall assure that all procedures and responsibilities identified during the hearing as being needed to support the receipt, inspection, placement and storage XXXXXXXXXXXXXXXXXXXXXXXXXXXXX of the MOX fuel, are clearly defined, finalized, memorialized in writing, implemented, properly communicated and coordinated as necessary with all involved agencies, and actually accomplished in a timely manner. These shall include, but not be limited to: (A) procedures for coordinating the transfer of the MOX assemblies from DOE; (B) procedures and timelines for coordinating interactions with local law enforcement agencies; (C) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX; and (D) the commitment to ensure that all armed responders are dedicated to the protection of the MOX fuel. Duke shall provide timely and detailed reports on the completion of such tasks to the NRC Staff for its consideration and analysis, as deemed appropriate in the Staff's discretion.

2. This decision is effective immediately and, in accordance with 10 C.F.R. § 2.760 of the Commission's Rules of Practice, shall become the final action of the Commission forty (40) days from the date of its issuance (on April 19, 2005), unless any party petitions the Commission for review in accordance with 10 C.F.R. § 2.786 or the Commission takes review on its own motion.

3. Within fifteen (15) days after service of this Memorandum and Order, any party may seek review by filing a petition for review with the Commission on the grounds specified in

10 C.F.R. § 2.786(b)(4). The filing of a petition for review is mandatory for a party to exhaust its administrative remedies before seeking judicial review. 10 C.F.R. § 2.786(b)(1).

4. Any petition for review shall be no longer than ten (10) pages and shall contain the information set forth at 10 C.F.R. § 2.786(b)(2). Any other party may, within ten (10) days after service of a petition for review, file an answer supporting or opposing Commission review. Any such answer shall be no longer than ten (10) pages and, to the extent appropriate, should concisely address the matters in 10 C.F.R. § 2.786(b)(2). 10 C.F.R. 2.786(b)(3). A petitioning party shall have no right to reply, except as permitted by the Commission. *Id*.

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD

/RA on original decision on 3/10/05/

Ann Marshall Young, Chair
ADMINISTRATIVE JUDGE

/RA on original decision on 3/10/05/

Anthony J. Baratta
ADMINISTRATIVE JUDGE

/RA on original decision on 3/10/05/

Thomas S. Elleman
ADMINISTRATIVE JUDGE[267]

Rockville, Maryland
March 10, 2005 [ORIGINAL ISSUE DATE]

[267]Judge Elleman was unavailable to participate in the redaction process for this issuance.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
DUKE ENERGY CORPORATION	)	Docket Nos. 50-413-OLA
	)	50-414-OLA
(Catawba Nuclear Station, Units 1 and 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB FINAL PARTIAL INITIAL DECISION - PUBLIC REDACTED VERSION (ISSUES RELATING TO BREDL SECURITY CONTENTION 5) (LBP-05-10) have been served upon the following persons by deposit in the U.S. mail, first class, or through NRC internal distribution.

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Docket Nos. 50-413-OLA and 50-414-OLA
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[Original signed by Evangeline S. Ngbea]

Office of the Secretary of the Commission

Dated at Rockville, Maryland,
this 18th day of April 2005