UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

Nils J. Diaz, Chairman
Edward McGaffigan, Jr.
Jeffrey S. Merrifield

DOCKETED 07/07/04

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

CLI-04-19

MEMORANDUM AND ORDER

In this license amendment proceeding to authorize the use of four lead test assemblies of mixed oxide (MOX) fuel in one of Duke Energy Corporation's Catawba nuclear reactors, the Commission addresses the Board's certified questions regarding an intervenor's security contention. The Commission holds that Security Contention 1 is inadmissible and declines to revisit CLI-04-06.

I. BACKGROUND[1]

A. This Proceeding

Duke Energy Corporation has requested a license amendment to allow insertion of four MOX lead test assemblies in one of its Catawba commercial nuclear reactors.[2] Duke later

[1]We refer the reader to our earlier more detailed discussions of Duke's license amendment request. *See Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-11, 59 NRC 203, 205-07 (2004); CLI-04-06, 59 NRC 62, 67-70 (2004).

[2]MOX is a mixture of uranium and plutonium oxides. The test precedes anticipated "batch use" of the fuel as part of a cooperative program with the Russian Federation to dispose

(continued...)

submitted a request for an exemption from certain "Category I" security requirements, which, without such exemptions, would apply to Catawba because of the presence of "formula quantities" of plutonium, a strategic special nuclear material.[3]

The Blue Ridge Environmental Defense League (BREDL) filed a petition to intervene in this proceeding. On March 5, 2004, the Board granted BREDL's request for a hearing on three reframed non-security contentions,[4] and Duke appealed. We dismissed the appeal (as interlocutory) without prejudice.[5]

Because of disputes among the parties regarding BREDL's "need to know" certain non-public safeguards information in order to frame its security contentions, BREDL did not submit those contentions until the Commission issued CLI-04-06, resolving the disputes.[6] On April 12, 2004, the Board admitted BREDL's Security Contention 5, rejected Security Contentions 2 through 4, and certified Security Contention 1 to the Commission to determine its admissibility.[7] Security Contention 1, which we discuss in detail below, calls on Duke to meet the same enhanced security standards that the NRC imposed on other Category I facilities in the wake of

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[2](...continued)
of weapons grade plutonium by using it in commercial nuclear reactors.

[3]A formula quantity "means 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)." 10 C.F.R. § 73.2. Category I facilities are licensed to possess formula quantities of strategic special nuclear material.

[4]*See* LBP-04-04, 59 NRC __ (Mar. 5, 2004). In the same order, the Board denied the hearing request of the Nuclear Information and Resource Service.

[5]*See* CLI-04-11, 59 NRC 203.

[6]*See* CLI-04-06, 59 NRC 62.

[7]*See* unpublished "Memorandum and Order (Ruling on Security-Related Contentions)" (Apr. 12, 2004). This order has not been made public because it contains safeguards information; however, on May 28, 2004, the Board issued LBP-04-10, a redacted public version of the sealed April 12 order. Later references to the Board's ruling on security-related contentions are to the public version.

the 9/11 terrorist attacks. The Board certified not only the questions "specifically raised in Security Contention 1," but also "those that arise out of and relate to it, and also to issues addressed in CLI-04-06, as discussed [in the Board's order of April 12, 2004.]"[8] Essentially, the Board has asked, in the context of BREDL's Security Contention I, whether CLI-04-06 retains validity and whether the enforcement orders the NRC issued to two Category I fuel facilities in the aftermath of 9/11[9] relate to the present licensing proceeding. We accepted the Board's certification and sought initial and reply briefs from the parties.[10]

B. Security Contention 1

In its security submittal, Duke details the incremental measures it will take to protect the unirradiated MOX fuel; *i.e.*, the fuel from the time it is delivered by the Department of Energy to Catawba until it is inserted into the reactor core for irradiation. Pursuant to 10 C.F.R. § 73.5, Duke has requested certain exemptions from the requirements of 10 C.F.R. §§ 73.45 and 73.46, which apply to Category I facilities.[11] Duke maintains that the Catawba facility, though technically a Category I facility during the time in question, is fundamentally a commercial

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[8]CLI-04-11, 59 NRC at 209, quoting the Board's unpublished order.

[9]*See* "In the Matter of BWX Technologies, Lynchburg, VA; Order Modifying License (Effective Immediately)," 68 Fed. Reg. 26,675 (May 16, 2003) and "In the Matter of Nuclear Fuel Services Inc., Erwin, TN; Order Modifying License (Effective Immediately)," 68 Fed. Reg. 26,676 (May 16, 2003). Neither Duke nor BREDL is privy to these orders.

[10]CLI-04-11, 59 NRC at 209.

[11]There are two Category I facilities, Nuclear Fuel Services, Inc. and BWX Technologies, in the United States. Both existing Category I facilities engage in fuel processing. Although they possess formula quantities of strategic special nuclear material, commercial nuclear reactors are not considered Category I facilities and are exempt from the requirements of 10 C.F.R. §§ 73.45 and 73.46 because the plutonium they possess is located in spent fuel, which is highly radioactive. Spent fuel is exempted because its special nuclear material "is not readily separable from other radioactive material and [] has a total external radiation dose rate in excess of 100 rems per hour at a distance of 3 feet from any accessible surface without intervening shielding." 10 C.F.R. § 73.6(b). By possessing the four lead test assemblies, Catawba will be a Category I facility until the assemblies are inserted into the reactor core.

reactor. Since Catawba already meets the safeguards requirements for reactors, Duke's security plan focuses on the additional measures -- above those required for a commercial reactor facility -- it believes are required to protect the MOX fuel and requests exemptions from those Duke considers unnecessary or inapplicable to Catawba.[12] In doing so, Duke recognizes that it does need to do something more, compared to measures taken for standard uranium fuel assemblies, to handle the fresh MOX assemblies. But Duke also asserts that, even when the MOX assemblies are present, Catawba is *functionally* something less than a typical Category I facility. Duke states that Category I fuel processing facilities differ so greatly from Catawba in the nature, type, and amount of Category I material present that the threat of theft at the other Category I facilities is not at all comparable to that at Catawba.

In Security Contention 1, BREDL alleged that "Duke's revisions to its security plan and its exemption application are deficient because they fail to address the post-9/11 revised design basis threat[13] for Category I nuclear facilities."[14] BREDL maintains that, through orders issued to NFS and BWXT after September 11, 2001, there has been a *de facto* change in the design basis threat for Category I fuel cycle facilities, rendering compliance with Section 73.1 insufficient, and that there is no basis in the regulations for distinguishing between the fuel cycle facilities and Catawba once the latter stores Category I quantities of strategic special nuclear

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[12]NRC regulations are performance based. *See, e.g.,* 10 C.F.R. §§ 73.20 and 73.45.

[13]The "design basis threat" is the postulated threat that the physical protection system must have the capability to withstand. Design basis threats are "used to design safeguards systems to protect against acts of radiological sabotage and to prevent the theft of special nuclear material." 10 C.F.R. § 73.1(a). Our rules describe the design basis threats for radiological sabotage and for theft or diversion of formula quantities of strategic special material at 10 C.F.R. §73.1(a)(1) and § 73.1(a)(2), respectively.

[14]LBP-04-10, 59 NRC at __, slip op. at 17.

material. Therefore, says BREDL, Duke's license amendment application is deficient because it does not even consider this revised design basis threat.

In a related vein, BREDL states that the license amendment must pose "no undue risk to the public health and safety or the common defense and security," pursuant to the Atomic Energy Act, 42 U.S.C. § 2077. BREDL continues as follows:

> By changing the definition of the design basis threat, the Commission has changed the concept of what constitutes "no undue risk" to public health and safety and the common defense and security, such that mere compliance with NERC (*sic*) regulations will not suffice. . . . Even if it were to demonstrate compliance with [NRC's published regulations for maintaining security of formula quantities of strategic special nuclear material], however, Duke still would not be entitled to a license, unless it could demonstrate compliance with the no undue risk standard as it is currently conceived by the Commission.[15]

In short, BREDL says first that the NRC has revised the design basis threat applicable to Catawba, and Duke has ignored the revision in its license amendment request. In the alternative, BREDL maintains that compliance with NRC regulations is insufficient under NRC's statutory mandate to protect the public health and safety.

II. DISCUSSION

A. Admissibility of Security Contention 1

BREDL's chief argument is that the Commission has made a *de facto* change in the design basis threat for all Category I fuel cycle facilities. BREDL's argument rests on a pair of post-9/11 enforcement orders issued to the only two Category I facilities now in existence, NFS and BWXT.[16] As BREDL says in its Security Contention 1 basis statement and in its brief, in

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[15]"Blue Ridge Environmental Defense League's Brief in Response to CLI-04-11, Regarding Admissibility of BREDL Security Contention 1; and Request for Reconsideration of CLI-04-06" at 4 (May 5, 2004), quoting "Blue Ridge Environmental Defense League's Contentions on Duke's Security Plan Submittal" at 3-4 (Mar. 3, 2004).

[16]*See* note 9.

those orders the Commission imposed security upgrades at Category I facilities (and at nuclear power reactors):

> The Commission's review [of its security-related regulations for all licensed facilities in the aftermath of September 11] resulted in the issuance of enforcement orders imposing security upgrades at all operating nuclear power plants and Category I facilities. For the Category I facilities, the NRC explicitly declared that the revised design basis threat "supercedes [sic] the Design basis Threat (DBT) specified in 10 CFR 73.1." (Citation omitted). Thus, for Category I facilities, the NRC has revised and replaced the design basis threat that is specified in 10 CFR § 73.1.[17]

BREDL stresses a statement in the Commission's orders that it was "imposing a revised DBT," as set forth in an unpublished classified attachment to each of the orders.[18] BREDL faults Duke for not addressing this revised design basis threat in its security plan.

BREDL's argument is flawed because it ignores both NRC practice and fundamental principles of administrative law. *There has been no change in the Category I design basis threat applicable to Catawba.* The NRC Staff measures license applications against regulatory standards, not against enforcement orders.[19] A licensee must comply with regulations for its category of facility and with individual enforcement orders directed to its facility. The enforcement orders imposing security upgrades at NFS and BWXT did not create a universal design basis threat applicable to any other facility (such as Catawba) that might possess Category I material in the future. It is true, as BREDL argued, that the orders directed to the two existing Category I facilities add security requirements to the existing Section 73.1 design basis threat. What BREDL overlooks, however, is that the orders in question added to the requirement *only* for those two facilities. They did not affect any other facility or change the

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[17]BREDL Brief at 4.

[18]*See* 68 Fed. Reg. at 26,675 and 26,677.

[19]*See* CLI-04-06, 59 NRC at 72, n.21.

prospective applicability of the regulations.[20] NFS and BWXT are not the subject of this proceeding. Under established principles of administrative law, Commission orders determine requirements only for those licensees and facilities to whom the orders are issued. Such orders do not amend NRC regulations, nor do they set -- either by law or in practice -- a new review standard for other licensees or applicants.

Thus, the answer to the question whether the Commission has increased the general security standard for Category I facilities is "no." Security Contention 1 is inadmissible because it points to no genuine dispute with Duke about the level of security required to satisfy Section 73.1, the regulatory licensing standard for the Catawba facility.[21] The contention relies on alleged changes in the design basis threat for all Category I facilities, present and future. But there has been no such change. The Commission's NFS and BWXT enforcement orders have no across-the-board effect. They apply to those facilities only.

BREDL argues that we should direct the Board to inquire, as a factual matter, whether the circumstances of the Catawba reactor are so different as to render the post-9/11 orders to Category I facilities irrelevant. But, as we have just held, as a matter of law our NFS and BWXT security orders do not apply to Catawba. Moreover, the security needs at Catawba, on the one hand, and at NFS and BWXT, on the other, are visibly different:

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[20]Moreover, they will remain in effect only until the Commission determines otherwise. *See* Fed. Reg. at 26,675 and 26,677.

[21]Each contention must state "[s]ufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact." 10 C.F.R. § 2.714(b)(2)(iii). *See, e.g., Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003); *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 363 (2002). The NRC recently amended its adjudicatory procedural rules in 10 C.F.R. Part 2. *See* Final Rule, "Changes to Adjudicatory Process," 69 Fed. Reg. 2182 (Jan. 14, 2004). The new procedural rules apply only to proceedings noticed on or after February 13, 2004, and therefore do not apply to this proceeding.

> [T]he MOX material, while technically meeting the criteria of a formula quantity, is not attractive to potential adversaries from a proliferation standpoint due to its low Pu concentration, composition, and form (size and weight). The MOX fuel consists of Pu oxide particles dispersed in a ceramic matrix of depleted uranium oxide with a Pu concentration of less than six weight percent. The MOX LTAs will consist of conventional fuel assemblies designed for a commercial light-water power reactor that are over 12 feet long and weigh approximately 1500 pounds. Therefore, the MOX LTAs represent a significantly less attractive theft or diversion target, from a proliferation standpoint, as compared to the materials at the Category I fuel fabrication facilities, which 10 CFR. 73.45 and 73.46 were primarily intended to address. A large quantity of MOX fuel and an elaborate extraction process would be required to yield enough material for use in an improvised nuclear device or weapon.[22]

In short, contrary to BREDL's (implicit) claim, it is not inevitable that we ultimately will impose the same enhanced security requirements at Catawba, once it comes into possession of four MOX assemblies, as we have imposed at NFS and BWXT.

In a related argument, BREDL contends that, at a minimum, there is a genuine dispute whether the Commission's security orders -- elevating the security standard for the NFS and BWXT facilities -- demonstrate that compliance with the NRC's security regulation, 10 C.F.R. § 73.1, is no longer sufficient to satisfy the AEA's "no undue risk" standard. Again, however, the Commission's security pronouncements in its enforcement orders -- even if equated to a "no undue risk" standard -- apply only to the two existing Category I facilities. The Commission has not, by means of its post-9/11 orders, elevated the general security standard for Category I facilities. Issuance of enforcement orders to licensees -- indeed, even to all licensees currently in the category -- does not amend Section 73.1 or change our licensing standards for new

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[22]"Safety Evaluation by the Office of Nuclear Security and Incident Response, Renewed Facility Operating License NPF-35 and Renewed Facility Operating License NPF-52, Duke Energy Corporation, et al., Catawba Nuclear Station, Units 1 and 2, Docket Nos. 50-413 and 50-414" at 2 (May 5, 2004).

facilities. As a general matter, compliance with applicable NRC regulations ensures that public health and safety are adequately protected in areas covered by the regulations.[23]

We hold that the possibility of a future security order being directed to Catawba does not require consideration of the already-issued NFS and BWXT orders in this licensing adjudication. As we have stressed repeatedly, those orders are facility-specific, not generic. And, even on their own terms, they "do not impose immutable requirements, but are subject to change depending on updated assessments of the terrorist threat."[24] Such facility-specific orders are not appropriate measuring rods for evaluating whether to license future activity at a different facility.

In sum, BREDL has given us no valid reason why the Licensing Board should not follow current security regulations. BREDL might have suggested, but did not, a waiver of the regulations.[25] And BREDL has had an opportunity to litigate the special security arrangements (exemptions) Duke has proposed.[26] But speculation about future changes in the regulations or the content of future enforcement orders that might be directed to Catawba does not affect the standard for judging the pending application.

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[23]*See Connecticut Yankee Atomic Power Co.* (Haddam Neck Plant), CLI-03-07, 58 NRC 1, 7 (2003).

[24]CLI-04-06, 59 NRC at 73.

[25]A party to an adjudicatory proceeding may petition that the application of a specified regulation be waived or an exception made for a particular proceeding if "special circumstances . . . are such that the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted." 10 C.F.R. § 2.758(b). *See Connecticut Yankee Atomic Power Co.* (Haddam Neck Plant), DLI-03-07, 58 NRC 1, 8 (2003); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-88-10, 28 NRC 573, 595-97 (1988). Absent a waiver, NRC regulations are not subject to enhancement or collateral attack in agency hearings. *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 394-95 (1987).

[26]*See* CLI-04-06, 59 NRC at 72.

B. Reconsideration of CLI-04-06

We turn next to the question of the Category I fuel facility security orders in the context of our decision in CLI-04-06 regarding "need to know." The thrust of that decision was that the current proceeding has nothing to do with the NRC's post-9/11 general security orders and that the parties may safely assume as a baseline that the Catawba facility will comply with all applicable general security requirements, whether prescribed by regulation or by enforcement order.[27] The focus of this adjudication is the license application, which proposes specific measures -- enhancements of security requirements for commercial reactors -- necessary to protect the MOX fuel from theft or diversion. Contentions, then, should point out vulnerabilities; *i.e.*, why the measures Duke plans to take are defective or insufficient.[28] We see no basis to reconsider any aspect of CLI-04-06. Given that the enhancements must be measured against the correct standard, BREDL's erroneous insistence in Security Contention 1 that some other standard applies here does not beget an admissible contention or create a need to know additional safeguards information.

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[27] *See* CLI-04-06, 59 NRC at 73. "All parties to this adjudication, including BREDL, may safely assume, as a baseline, that Duke's Catawba facility will comply with all applicable general security requirements, both those prescribed in NRC rules and those prescribed by NRC order. That's not at issue in this MOX license amendment case. At stake here is the appropriate increment -- the appropriate heightening of security measures -- necessitated by the proposed presence of MOX fuel assemblies at the Catawba reactor site." *Id.*

[28] *See* CLI-04-06, 59 NRC at 72-73. "We see no reason why BREDL cannot evaluate Duke's proposed incremental changes to its security plan related to the presence of MOX fuel assemblies and decide whether to challenge Duke's proposed security arrangements as inadequate to accommodate the use of MOX fuel at Catawba." *Id.*

III. CONCLUSION

For the foregoing reasons, we hold that BREDL's Security Contention I is inadmissible. Further, we decline to reconsider CLI-04-06.

IT IS SO ORDERED.

For the Commission

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 7th day of July, 2004.