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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

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In the Matter of )  
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DUKE ENERGY CORPORATION )  
 )  
(Catawba Nuclear Station, )  
Units 1 and 2) )  
\_\_\_\_\_ )

Docket Nos. 50-413-OLA, 50-414-OLA

CLI-04-21

**MEMORANDUM AND ORDER**

This proceeding arises from the application of Duke Energy Corporation to amend its operating license to allow the use of four mixed oxide (MOX) lead test assemblies at its Catawba Nuclear Station. The Commission holds that the Licensing Board did not abuse its discretion by ruling that the intervenor, Blue Ridge Environmental Defense League (“BREDL”), presented sufficient information to qualify a witness as an expert in the area of nuclear security.

**I. BACKGROUND**

The background of this proceeding is described at length in earlier orders we issued in this docket.<sup>1</sup> Today’s order responds to the NRC Staff’s petition for interlocutory review of a Licensing Board ruling accepting Dr. Edwin Lyman as an expert witness. BREDL had selected

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<sup>1</sup> 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).

Dr. Lyman as an expert in nuclear security. The NRC Staff, asserting that BREDL had not established Dr. Lyman as an expert on security matters, refused to undertake a “need-to-know” determination regarding safeguards documents BREDL requested during discovery. According to the Staff, Dr. Lyman lacked adequate expert credentials, and the Staff objected to producing any safeguards documents to him.<sup>2</sup>

The Board heard oral argument on the issue of Dr. Lyman’s credentials, permitted *voir dire* as to his nuclear security-related qualifications, and found him qualified to testify as an expert:

We have considered all your arguments and we appreciate Dr. Lyman’s testimony. We find that he has been very straightforward in telling us what he does know and what experience he does have, what experience and knowledge he does not have and we find that he has demonstrated sufficient knowledge, skill, experience, training and education to be able to ask the probing questions and do the evaluations on behalf of the Intervenor that would assist and aid us in making our determinations in this case.

We find that he has shown skill and ability to understand, analyze and utilize the sort of specific information that would be relevant in such a way that it would aid us in our determinations and so while we will be issuing something in writing later to confirm our ruling today, we are going to go ahead and make that ruling today, verbally on the record now, so that we won’t hold up the Staff in going ahead and making your need-to-know determination on the necessity and indispensability aspects of the need issue.<sup>3</sup>

On June 30, the NRC Staff filed its petition for review and sought a stay of the Board’s order.<sup>4</sup> We entered a “housekeeping stay”<sup>5</sup> on July 1, 2004, and established dates for Duke

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<sup>2</sup>The Staff divided its need-to-know determination into two parts, the proffered expert’s qualifications and the indispensability of the information to the requester. At the time of the Licensing Board hearing, the Staff had not made the second part of its “need-to-know” determination; specifically, it had not examined the documents to determine whether it was necessary for a qualified expert to know their contents in order to assist the intervenors in this proceeding.

<sup>3</sup>June 25 transcript at 2029-2030. The transcript, designated “safeguards,” is not available to the public.

<sup>4</sup>See “NRC Staff’s Petition for Review of the Licensing Board’s Ruling Related to  
(continued...)

and BREDL to submit responses to both Staff pleadings. On July 2, 2004, the Board issued a written order confirming its earlier bench ruling.<sup>6</sup>

## **II. DISCUSSION**

### **A. Interlocutory Review**

The NRC Staff cites 10 C.F.R. § 2.786 (b)(4) and bases its petition for interlocutory review on an assertion that the disputed Board ruling presents a substantial question regarding a legal conclusion that is contrary to established law and requires a prompt decision by the Commission.<sup>7</sup> The cited standard, however, applies to review of a full or partial initial decision, not to an interlocutory Board ruling on a discovery dispute.

Although the Commission disfavors interlocutory review, we will take review if an appeal meets one of two criteria in 10 C.F.R. § 2.786(g) -- irreparable harm or pervasive or unusual

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<sup>4</sup>(...continued)

BREDL's Proffered Security Expert" (June 30, 2004) and "NRC Staff's Motions for Temporary Stay to Preserve the Status Quo and for Stay Pending Interlocutory Review of the Licensing Board's June 25, 2004 Finding Regarding Dr. Edwin Lyman's Expertise" (June 30, 2004). The NRC Staff also submitted a "Motion for Leave to Reply to BREDL's Opposition to NRC Staff's Petition for Review Regarding BREDL's Security Expert" (July 19, 2004). We grant the Staff's motion.

<sup>5</sup>See *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), unpublished Order (Jan. 30, 2004); *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), 1966 WL 627, 640 (N.R.C.) (Oct. 2, 1996).

<sup>6</sup>See "Memorandum and Order (Confirming June 25, 2004, Bench Ruling Regarding Expertise of Dr. Edwin S. Lyman)" (July 2, 2004), re-served as LBP-04-13, 60 NRC \_\_\_ (July 8, 2004) ("Qualifications Order").

<sup>7</sup>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 do not apply to this proceeding.

effect on the basic structure of the proceeding.<sup>8</sup> And we sometimes take interlocutory review as an exercise of our inherent supervisory authority over agency adjudicatory proceedings.<sup>9</sup>

The NRC Staff's petition for review is presumably founded on the (unstated) threat of serious and irreparable harm resulting from the alleged misapplication of need-to-know standards. Because dissemination of safeguards information can lead to irreparable harm, we have already visited this case once on interlocutory appeal.<sup>10</sup> That appeal concerned BREDL's need to know (and access to) safeguards information at the contention formulation stage of the proceeding. The current appeal does not involve access to information directly. It involves expert witness qualifications in a security context. In today's environment, we anticipate that questions about expert witnesses on security may arise frequently in adjudications. We will therefore exercise our discretion to undertake interlocutory appellate review, and we will examine the Board's decision finding Dr. Lyman a qualified expert witness.<sup>11</sup>

## **B. Standard for Review**

As an initial matter, we note that a Licensing Board normally has considerable discretion in making evidentiary rulings, such as deciding whether a witness is qualified to serve as an

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<sup>8</sup>See, e.g., *Catawba*, CLI-04-06, 59 NRC at 70-71; *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-07, 55 NRC 205, 214 n.15 (2002).

<sup>9</sup>See, e.g., *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-07, 55 NRC 205, 214, n.15 (2002); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 29 (2000).

<sup>10</sup>See CLI-04-06, 59 NRC 62.

<sup>11</sup>In CLI-04-06, 59 NRC at 74-75, we offered general guidance to licensing boards for their "need to know" determinations. Our earlier focus was on judging which information was indispensable to intervenors in presenting their cases. We did, however, also state that Boards should restrict access to safeguards information to "qualified, 'cleared' representatives of intervenors." *Id.* at 75 (emphasis added). In this order we address the "qualified" issue.

expert. For our part, the Commission's standard for review of a Board evidentiary ruling is abuse of discretion.<sup>12</sup>

Our precedents, drawing on guidance from the Federal Rules of Evidence, place the burden of demonstrating that a witness is qualified to serve as an expert on the party who offers the witness.<sup>13</sup> A witness may qualify as an expert by "knowledge, skill, experience, training, or education' to testify '[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue.'"<sup>14</sup> This standard, of course, is not rigid or self-defining. Rather, it gives room to our boards to decide whether the expert witness will be of assistance. Like our judicial counterparts, we are reluctant to overturn a Licensing Board's decision about the suitability or qualifications of a witness a party offers as an expert.<sup>15</sup> Here, we see no sound reason to overturn the Board's decision to grant Dr. Lyman expert status.

To begin with, the Board made a careful inquiry into Dr. Lyman's qualifications in the security arena. After hearing *voir dire* and the parties' arguments, the Board specifically found that Dr. Lyman had the knowledge, skill, experience, training, and education to assist the Board

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<sup>12</sup>See *Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 475 (1982).

<sup>13</sup>See *McGuire*, 15 NRC at 475; *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 250 (2001).

<sup>14</sup>*McGuire*, ALAB-669, 15 NRC at 475, quoting Federal Rule of Evidence 702. In judicial counterparts of administrative adjudications, the trial judge must ensure that scientific testimony admitted is not only relevant, but reliable. See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993). The trial court thus functions as a "gatekeeper." *Id.* Whether a witness is sufficiently qualified as an expert is a matter within the discretion of the trial court, and the trial court "must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable." *Kumho Tire Co. Ltd. v. Carmichael*, 526 U.S. 137, 152 (1999). Moreover, the trial court's discretion will not ordinarily be disturbed on appeal unless there is an abuse of that discretion. See *General Electric Co. v. Joiner*, 522 U.S. 136, 141 (1997).

<sup>15</sup>See *McGuire*, 15 NRC at 473-77.

in making its determinations in this case. The Board was made aware, and acknowledged, that Dr. Lyman lacked knowledge of “certain particular detailed tactical information.”<sup>16</sup> The Board nonetheless found that he had “extensive knowledge and experience at the conceptual and strategic level.”<sup>17</sup>

This was a reasonable finding, given various factors catalogued by the Board.<sup>18</sup> For example, Dr. Lyman holds three degrees in physics and did post-doctoral work researching issues associated with security and safety of nuclear materials and nuclear weapons, including physical protection for plutonium and MOX fuel. During his tenure at the Nuclear Control Institute, he focused on nuclear nonproliferation, including the physical protection of special nuclear materials and nuclear facilities against sabotage. He has presented papers regularly on physical protection issues; has briefed a Congressional committee on security issues relating to nuclear terrorism; has participated in meetings with NRC Staff and the nuclear industry on nuclear power plant security, force-on-force exercises, and the revised rulemaking on 10 C.F.R. Part 73; has been invited to be a member of panels on NRC safeguards policy at the NRC Regulatory Information Conference; has counseled Lawrence Livermore Laboratory scientists on a security issue; has published articles in scientific journals, including a double-blind peer-reviewed journal; and is currently employed as a Senior Staff Scientist with the Union of Concerned Scientists.

Given these credentials, we cannot say that the Board abused its discretion in finding that Dr. Lyman’s testimony will aid the Board in deciding security issues in this case. It is true, as the NRC Staff stresses, that in the area of reactor security plans Dr. Lyman’s expertise is

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<sup>16</sup>Qualifications Order, slip op. at 3.

<sup>17</sup>*Id.* at 6.

<sup>18</sup>*Id.*

general rather than specific. But “broad, general experience” may be useful.<sup>19</sup> Gaps in specific knowledge may go to the “weight” of the expert testimony rather than to its admissibility.<sup>20</sup>

As BREDL points out in its brief, Dr. Lyman is already -- without NRC Staff or Duke objection -- privy to some safeguards information in this case:

The Staff does not explain why, after making five separate need-to-know determinations granting Dr. Lyman access to safeguards documents, it has decided at this late juncture that it would be generally harmful to the public interest to grant Dr. Lyman access to such documents. It is simply far too late now to make such a claim.<sup>21</sup>

Dr. Lyman acquired the safeguards documents in his asserted capacity as BREDL’s expert on security. We agree with BREDL that, under the specific circumstances of this case, it is too late to decide now that Dr. Lyman does not qualify as a security expert.

One last point. Our decision today, standing alone, goes only to the question of Dr. Lyman’s qualifications as an expert witness; thus, it does not directly result in the release of any safeguards documents. The Staff should forthwith complete the “indispensability” portion of its need-to-know determinations regarding the documents BREDL has requested.<sup>22</sup>

### **C. Expert Witness Qualifications in a Security Context**

Security considerations, of course, require us to take special care that safeguards information ends up in as few hands as possible, whether in adjudications or otherwise. Accordingly, we take this opportunity to provide guidance on how to fortify our standard

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<sup>19</sup>*Huval v. Offshore Pipelines, Inc.*, 86 F.3d 454, 457-58 (5<sup>th</sup> Cir. 1996). *But cf. McGuire*, 15 NRC at 475.

<sup>20</sup>*Id.* See also *First Tennessee Bank Nat’l Ass’n v. Barreto*, 268 F.3d 319, 333 (6<sup>th</sup> Cir. 2001); *Shearon Harris*, 53 NRC at 251.

<sup>21</sup>“Blue Ridge Environmental Defense League’s Opposition to NRC Staff Petition for Review of ASLB Ruling on BREDL Security Expert Qualifications and Opposition to Motion for Stay” at 7 (July 9, 2004).

<sup>22</sup>Both BREDL and Duke have informed us that, based on our ruling in 60 NRC \_\_ (July 7, 2004), BREDL has withdrawn the bulk of its earlier document request.

approach to expert witnesses with additional precautions needed in the safeguards/security arena.

Our decision today notwithstanding, we fully agree with the NRC Staff's general view that, to gain access to safeguards information, a witness must possess the technical expertise to evaluate the information requested. Our adjudicatory rules limit the disclosure of safeguards information during litigation to witnesses who are *qualified*.<sup>23</sup> Thus, the Staff properly treated the qualifications of the witness as one part of a two-part test for releasing the safeguards information BREDL requested during discovery.

None of our recent adjudicatory decisions addresses expert witness qualifications in the security arena. In a 1979 case, however, the Appeal Board emphasized that, before any witness may be shown any portion of a security plan, the witness's sponsor must demonstrate to the Licensing Board's satisfaction that the witness possesses the *technical competence* necessary to evaluate it.<sup>24</sup> Declining to review that decision, the Commission recognized -- as do we -- the difficulty of the issue. The Commission endorsed the Appeal Board's view:

[T]he prospect of even limited disclosure of physical security plans for nuclear facilities poses serious and difficult questions. . . . Nonetheless, our responsibilities require the Commission to make certain findings and determinations before issuing an operating license for a nuclear power reactor, and the sufficiency of an applicant's proposed safeguards plans and procedures are relevant to those findings and determinations. The extent to which . . . the facts of this case require disclosure beyond the general outlines and criteria of the applicant's security plan is a matter for the Licensing Board to decide in the first instance and under the guidelines of ALAB-410 . . . .<sup>25</sup>

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<sup>23</sup>See 10 C.F.R. § 2.744(e). Under our new adjudicatory rules, most proceedings will be less formal than previously. Instead of discovery, the NRC Staff will compile a hearing file. See 10 C.F.R. § 2.1203. Nonetheless, we anticipate that numerous disputes, including those over witness qualifications, will arise regarding the need to know safeguards information.

<sup>24</sup>*Pacific Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-410, 5 NRC 1398, 1404, *review den.* CLI-77-23, 6 NRC 455 (1977).

<sup>25</sup>CLI-77-23, 6 NRC at 456.

The Licensing Board in *Diablo Canyon* later stated:

We believe that “technical competence” to evaluate the components of a security plan *ideally* requires practical knowledge flowing from working with [the security system]. . . . We recognize that the Board must make a subjective determination here, but . . . we believe that the burden will not have been met unless there exists evidence of actual practical knowledge *or its equivalent*.<sup>26</sup>

We endorse that guidance today.

The Staff in its current petition, however, appears to have lost sight of the italicized words. Duke agrees with the Staff and maintains that the Board confused “Dr. Lyman’s experience in broad nuclear energy policymaking issues with specific expertise in the development, implementation, and analysis of nuclear plant security plans.”<sup>27</sup> But practical, “hands-on” experience, while desirable, is not indispensable in all cases. Unwarranted and inflexible barriers, such as too great an insistence on “specific” knowledge in selected aspects of the subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field.<sup>28</sup> On the other hand, boards must assure themselves that a purported security “expert” has authentic credentials or experience in security. In the security arena, boards ought not tolerate “fishing expeditions” by untutored lay persons. Boards, like the Commission itself, must keep in mind “the delicate balance between

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<sup>26</sup>*Pacific Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-78-36, 8 NRC 567, 569 (1978) (emphasis added).

<sup>27</sup>“Duke Energy Corporation’s Response to the NRC Staff’s Appeal of the Licensing Board’s Finding that Dr. Edwin S. Lyman is an Expert in Nuclear Power Plant Security” (July 9, 2004).

<sup>28</sup>See *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 155 (3d Cir. 1999) (“[E]ach stage [of the expert’s testimony] must be evaluated practically and flexibly without bright-line exclusionary (or inclusionary) rules.”)

fulfilling our mission to protect the public and providing the public enough information to help us discharge that mission.”<sup>29</sup>

For our part, the Commission’s will continue to review safeguards-related cases closely. But the Board has not abused its discretion in this case. Thus, we will not disturb the ruling of the Board.

### III. CONCLUSION

We accept review of the Staff’s petition and affirm the Board’s evidentiary ruling because it was not an abuse of the Board’s discretion. We direct the NRC Staff to complete outstanding need-to-know determinations in this case forthwith. We also terminate the housekeeping stay that we entered in this case on July 1, 2004.

IT IS SO ORDERED.

For the Commission

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Annette L. Vietti-Cook  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 29<sup>th</sup> day of July, 2004

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<sup>29</sup>CLI-04-06, 59 NRC at 73.