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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

DUKE ENERGY CORPORATION)

Docket Nos. 50-369-LR

50-370-LR

50-413-LR

50-414-LR

(McGuire Nuclear Station,
Units 1 and 2, and
Catawba Nuclear Station,
Units 1 and 2)

RESPONSE OF DUKE ENERGY CORPORATION TO
AMENDED PETITIONS TO INTERVENE FILED BY
NUCLEAR INFORMATION AND RESOURCE SERVICE AND
BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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I. INTRODUCTION

On November 29, 2001, the Nuclear Information and Resource Service ("NIRS") and the Blue Ridge Environmental Defense League ("BREDL") (collectively, "Petitioners") each submitted proposed contentions in supplemental filings ("Amended Petitions") amending their requests for hearing and petitions for leave to intervene that Petitioners filed in this license renewal proceeding on September 14, 2001.¹ Pursuant to Nuclear Regulatory Commission ("NRC") regulations in 10 C.F.R. § 2.714(c) and the schedule established by the NRC Atomic

¹ "Contentions of Nuclear Information and Resource Service" (Nov. 29, 2001) ("NIRS Contentions"); "Blue Ridge Environmental Defense League submittal of contentions in the matter of the renewal of licenses for Duke Energy Corporation (DUKE) McGuire Nuclear Stations 1 and 2 [McGUIRE] and Catawba Nuclear Stations 1 and 2 [CATAWBA]" (Nov. 29, 2001) ("BREDL Contentions").

Safety and Licensing Board ("Licensing Board") in this proceeding by Order of November 15, 2001, Duke Energy Corporation ("Duke") hereby responds to Petitioners' amended petitions and proposed contentions. As discussed further below, Duke opposes Petitioners' requests for hearing because neither Petitioner has identified an admissible contention. Duke respectfully requests that Petitioners' requests for hearing be denied.

II. PROCEDURAL HISTORY

On June 13, 2001, Duke submitted an application to the NRC to renew the operating licenses for its McGuire Nuclear Station, Units 1 and 2 ("McGuire"), and Catawba Nuclear Station, Units 1 and 2 ("Catawba"). Notice of the NRC's receipt of Duke's application was published in the *Federal Register* on July 16, 2001.² On August 15, 2001, the NRC Staff issued a notice of its docketing of the application concurrent with an opportunity for hearing.³ Petitioners thereafter filed petitions to intervene and requests for hearing pursuant to 10 C.F.R. § 2.714 on September 14, 2001. Duke and the NRC Staff responded to these petitions, on the issue of standing only, on October 1, 2001.⁴

² See "Duke Energy Corporation, McGuire, Units 1 and 2, and Catawba, Units 1 and 2; Notice of Receipt of Application for Renewal of Facility Operating License Nos. NPF-9, NPF-17, NPF-35, and NPF-52 for an Additional 20-Year Period," 66 Fed. Reg. 37,072 (July 16, 2001).

³ See "Duke Energy Corporation, McGuire, Units 1 and 2, and Catawba, Units 1 and 2; Notice of Acceptance for Docketing of the Application and Notice of Opportunity for a Hearing Regarding Renewal of Facility Operating License Nos. NPF-9, NPF-17, NPF-35, and NPF-52 for an Additional 20-Year Period," 66 Fed. Reg. 42,893 (Aug. 15, 2001).

⁴ "Duke Energy Corporation's Response to Requests for Hearing and Petitions for Leave to Intervene" (Oct. 1, 2001) ("Duke Response"); "NRC Staff's Response to Requests for Hearing and Petitions for Leave to Intervene Filed by Nuclear Information and Resource Service and Blue Ridge Environmental Defense League" (Oct. 1, 2001) ("NRC Staff Response").

On October 4, 2001, the Commission issued an "Order Referring Petitions for Intervention and Requests for Hearing to the Atomic Safety and Licensing Board Panel."⁵ On October 16, 2001, the presiding Licensing Board in this license renewal proceeding issued an Order establishing a schedule for the filing of pleadings.⁶ Petitioners were originally scheduled to submit proposed contentions on November 6, 2001. However, at the request of NIRS, the Licensing Board extended that deadline, ultimately until November 29, 2001.⁷

Prior to the submission of proposed contentions by either Petitioner, BREDL filed a petition before the Commission to dismiss or suspend this license renewal proceeding, requesting that the NRC Staff halt its ongoing review of Duke's docketed license renewal application ("LRA") until certain issues (very similar to those described in BREDL's initial request for hearing) were resolved.⁸ Both Duke and the NRC Staff opposed this petition to dismiss,⁹ which is still pending before the Commission.

⁵ *Duke Energy Corporation* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), CLI-01-20, __ NRC __ (slip op., Oct. 4, 2001) ("Delegation Order").

⁶ *Duke Energy Corporation* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), "Order (Setting Deadlines, Schedule, and Guidance for Proceedings)," __ NRC __ (slip op., Oct. 16, 2001).

⁷ *Duke Energy Corporation* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), LBP-01-31, "Memorandum and Order (Granting Motion to Extend Time and Resetting Deadlines and Schedule for Proceedings)," __ NRC __ (slip op., Oct. 31, 2001); *Duke Energy Corporation* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), "Memorandum and Order (Granting in Part Request for Additional Extension of Time)," __ NRC __ (slip op., Nov. 15, 2001).

⁸ See "Blue Ridge Environmental Defense League Petition to Dismiss Licensing Proceeding or, in the Alternative, Hold it in Abeyance" (Oct. 23, 2001) ("BREDL Petition to Dismiss").

⁹ See "Response of Duke Energy Corporation to Blue Ridge Environmental Defense League Petition to Dismiss Licensing Proceeding or, in the Alternative, Hold It in Abeyance" (Nov. 5, 2001) ("Duke Response to Petition"); "NRC Staff's Response to Blue Ridge Environmental Defense League's Petition to Dismiss Licensing Proceeding

NIRS and BREDL filed their Amended Petitions, containing their proposed contentions, on November 29, 2001.¹⁰ While NIRS's contentions were filed in a timely manner, BREDL's were not; its Contention Five was late-filed in a separate e-mail in violation of the Licensing Board's November 15, 2001 final deadline. In addition, BREDL failed to post a hard copy of its Amended Petition, and an accompanying Exhibit No. 3, until November 30, 2001. In neither instance did BREDL even attempt to demonstrate good cause for late-filing as required by 10 C.F.R. § 2.714(a)(1). Duke therefore opposes admission of BREDL Contention Five, and Exhibit No. 3, as late-filed. However, Duke also herein responds on the issue of inadmissibility of all the proposed contentions in this license renewal proceeding.

III. PETITIONERS' STANDING

NRC requirements relating to the standing of both individuals and organizations to intervene in NRC licensing proceedings are established in 10 C.F.R. §§ 2.714(a)(2) and (d)(1), and in abundant case law. NRC and related Federal precedent on standing issues is cogently summarized in the NRC Staff's filing of October 1, 2001.¹¹

Duke stated previously that it did not contest BREDL's standing in this proceeding, but did believe that NIRS had failed to establish representational standing.¹² However, NIRS has filed, with its recent Amended Petition to Intervene, an affidavit from an individual living within twenty miles of both the McGuire and Catawba plants.¹³ Duke believes

or, in the Alternative, Hold it in Abeyance" (Nov. 8, 2001) ("NRC Staff Response to Petition").

¹⁰ See NIRS Contentions, *supra*; BREDL Contentions, *supra*.

¹¹ See NRC Staff Response at 3-7.

¹² See Duke Response at 4-7.

¹³ See "Declaration of Jesse Riley" (Nov. 12, 2001), *as attached to* "Amended Petition to Intervene — Reply to Arguments with Respect to Standing" (Nov. 29, 2001).

that this newest affidavit remedies the defects in NIRS's prior attempts to demonstrate representational standing, and therefore Duke no longer contests NIRS's standing. However, standing alone is not enough to admit a petitioner as a party to a proceeding; a petitioner must submit at least one admissible contention as well.¹⁴ As Duke demonstrates below, both NIRS and BREDL have failed in their attempts to do so.

IV. BACKGROUND: ADMISSIBILITY OF CONTENTIONS

A. NRC Requirements for Admission of Contentions

To be admissible in NRC licensing proceedings, proposed contentions must satisfy 10 C.F.R. § 2.714(b)(2), which provides that each contention "must consist of a specific statement of the issue of law or fact to be raised or controverted." Additionally, each contention must be accompanied by:

- (i) A brief explanation of the bases of the contention.
- (ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
- (iii) Sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application that the petitioner disputes and the supporting reasons for each dispute.

See 10 C.F.R. § 2.714(b)(2). These standards for admissibility of contentions are also set forth in ample Commission precedent.¹⁵

¹⁴ See 10 C.F.R. § 2.714(b)(1); see also *Duke Energy Corporation* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333 (1999); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 248 (1996).

¹⁵ See *Oconee*, CLI-99-11, 49 NRC at 333 ("A contention must specify the particular issue of law or fact the petitioner is raising, and contain: (1) a brief explanation of the bases of the contention; and (2) a concise statement of the alleged facts or expert opinion that

These contention requirements are to be interpreted strictly. If the contention and supporting material fail to satisfy Section 2.714(b)(2), the regulation provides that the presiding officer should refuse to admit the contention. *See* 10 C.F.R. § 2.714(d)(2)(i).¹⁶ A contention must also be rejected if the contention, even if proven, “would be of no consequence in the proceeding because it would not entitle petitioner to relief.” *See* 10 C.F.R. § 2.714(d)(2)(ii).¹⁷ By requiring some factual basis for an admitted contention, these NRC requirements are meant to “preclude a contention from being admitted where an intervenor has no facts to support its position” and hopes to use discovery as a “fishing expedition which might produce relevant supporting facts.”¹⁸ Licensing boards do not, at this stage, review the merits of an issue, but must nonetheless take a critical look at the basis offered for a contention to determine whether it in reality supports the petitioner’s claim.¹⁹

It is well-established that NRC standards for proposed contentions were deliberately “toughened” in the 1989 amendments to 10 C.F.R. § 2.714. The Commission raised the threshold for contention admissibility to ensure the participation of only those intervenors

support the contention and upon which the petitioner will rely in proving the contention at the hearing. The contention should refer to those specific documents or other sources of which the petitioner is aware and upon which he ‘intends to rely in establishing the validity of the contention.’ . . . A contention also must show that a ‘genuine dispute’ exists with the Applicant on a ‘material’ issue of law or fact”); *see also Yankee*, CLI-96-7, 43 NRC at 248-49.

¹⁶ *See also Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991) (*citing* 54 Fed. Reg. at 33,171).

¹⁷ *Yankee*, CLI-96-7, 43 NRC at 248-49 (footnote omitted) (*citing Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 142 (1993)).

¹⁸ *Oconee*, CLI-99-11, 49 NRC at 335 (*citing* 54 Fed. Reg. at 33,171).

¹⁹ *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989).

with “genuine and particularized concerns,” and (based upon the NRC’s past experience) to avoid litigation of contentions based on “little more than speculation.”²⁰ The resulting contention rule in Section 2.714(b)(2) reflects the NRC’s explicit direction that contentions not be admitted when unaccompanied by supporting facts — including a clear statement as to the basis for the contentions and the submission of more supporting information and references to specific documents and sources that establish the validity of the contention. *See* 54 Fed. Reg. 33,168, 33,170-33,171.²¹ Recently, the Commission reiterated that to show the existence of a “genuine dispute” with the applicant on a “material issue”²² of law or fact, the contention “should refer to those portions of the license application (including the environmental report and safety report) that the petitioner disputes and indicate supporting reasons for each dispute.”²³ The NRC’s rules on admission of contentions therefore require precision in the contention pleading process to ensure that a proposed contention is specific. In addition, the proposed contention *must have valid factual support*.²⁴

²⁰ *Oconee*, CLI-99-11, 49 NRC at 334; *Florida Power & Light Co.* (Turkey Point Nuclear Plant, Units 3 and 4), CLI-01-17, __ NRC __, slip op. at 22 (July 19, 2001). *See also* “Final Rule, Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process,” 54 Fed. Reg. 33,168 (Aug. 11, 1989).

²¹ *See also Oconee*, CLI-99-11, 49 NRC at 333-35.

²² A disputed issue is “material” if its resolution would “make a difference in the outcome of the licensing proceeding.” *Oconee*, CLI-99-11, 49 NRC at 333-34 (*citing* 54 Fed. Reg. at 33,172).

²³ *Turkey Point*, CLI-01-17, slip op. at 22; *see also Oconee*, CLI-99-11, 49 NRC at 333-34.

²⁴ In *Union of Concerned Scientists v. United States Nuclear Regulatory Com’n*, 920 F.2d 50 (D.C. Cir. 1990), the Court upheld the NRC’s 1989 revisions to 10 C.F.R. § 2.714, compared the amended Section 2.714(b) to the prior version, and concluded that “[t]he new rule perceptibly heightens th[e] pleading standard” for contentions. *Id.* at 52.

Recent Commission issuances have re-emphasized the higher threshold that a petitioner must clear to have a contention admitted in an adjudicatory proceeding. In its 1998

Statement of Policy on Conduct of Adjudicatory Proceedings, the Commission noted that:

[A Licensing B]oard may appropriately view a petitioner's support for its contention in a light that is favorable to the petitioner, but the board cannot do so by ignoring the requirements set forth in section 2.714(b)(2). *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991). The Commission re-emphasizes that licensing boards should continue to require adherence to section 2.714(b)(2), and that the burden of coming forward with admissible contentions is on their proponent. A contention's proponent, not the licensing board, is responsible for formulating the contention and providing the necessary information to satisfy the basis requirement for the admission of contentions in 10 C.F.R. § 2.714(b)(2).²⁵

As the Commission has emphasized, the NRC's strict contention rule "serves multiple interests." It "focuses the hearing process on real disputes susceptible of resolution in an adjudication," and precludes attempts to attack in a hearing "generic NRC requirements or regulations," or the expression of "generalized grievances about NRC policies." Additionally, it puts other parties on notice of the petitioners' specific claims and issues that they will have to support or oppose. Finally, the rule helps to ensure that NRC hearings are "triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions."²⁶

²⁵ *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 22 (1998). Regarding the obligation of the petitioner to formulate its own contentions, see also *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000).

²⁶ *Oconee*, CLI-99-11, 49 NRC at 334.

B. The Limited Scope of License Renewal Proceedings

Because NRC licensing boards are delegates of the Commission, they may “exercise only those powers which the Commission has given [them].”²⁷ These delegated powers are determined by the scope of the licensing proceeding, which, in turn, is described in the agency’s notice of opportunity for hearing in that proceeding, and in the subsequent Commission order referring the proceeding to the licensing board. To be cognizable, a proposed contention must be material to a matter that falls within the scope of the proceeding for which the board has been given jurisdiction.²⁸

As the Commission has stated, the scope of license renewal proceedings (such as that currently before this Board) is limited:

[U]nder the governing regulations in 10 C.F.R. Part 54, the review of license renewal applications is confined to matters relevant to the extended period of operation requested by the applicant. The safety review is limited to the plant systems, structures, and components (as delineated in 10 C.F.R. § 54.4) that will require an aging management review for the period of extended operation or are subject to an evaluation of time-limited aging analyses. See 10 C.F.R. §§ 54.21(a) and (c), 54.29, and 54.30. In addition, the review of environmental issues is limited by rule by the generic findings in NUREG-1427 [sic], “Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants.” See 10 C.F.R. §§ 55.71(d) [sic] and 51.95(c).²⁹

²⁷ *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170 (1976) (citing *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-249, 8 AEC 980, 987 (1974)).

²⁸ See *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 91 (1990); *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170 (1976); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), ALAB-739, 18 NRC 335, 339 (1983). See also 54 Fed. Reg. at 33,169-71 (revised rules on admissibility of contentions did not alter pre-existing case law).

²⁹ *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC at 22.

The Commission has reiterated its expectations on the present docket. In its Delegation Order referring NIRS's and BREDL's Petitions for Intervention and Requests for Hearing to this Licensing Board panel, the Commission demonstrated its commitment to ensuring that this license renewal proceeding, like those before it, remains appropriately limited in scope:

The scope of this proceeding is limited to discrete safety and environmental issues. *Florida Power and Light* (Turkey Point Nuclear Generating Plant Units 3 and 4), CLI-01-17, 54 NRC 3, 6-13 (2001). This encompasses a review of the plant structures and components that will require an aging management review for the period of extended operation and the plant's systems, structures and components that are subject to an evaluation of time-limited aging analyses. See 10 C.F.R. §§ 54.21(a) and (c), 54.4; *Nuclear Power Plant License Renewal; Revisions, Final Rule*, 60 Fed. Reg. 22,461 (1995). In addition, review of environmental issues is limited in accordance with 10 C.F.R. §§ 51.71(d) and 51.95(c). See NUREG-1437, "Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants;" *Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, Final Rule*, 61 Fed. Reg. 28,467 (1996), amended by 61 Fed. Reg. 66,537 (1996). The Licensing Board shall be guided by these regulations in determining whether proffered contentions meet the standard in 10 C.F.R. § 2.714(b)(2)(iii). It is the responsibility of the petitioner to provide the necessary information to satisfy the basis requirement for the admission of its contentions and to demonstrate that a genuine dispute exists within the scope of this proceeding.³⁰

The scope of admissible contentions in a license renewal proceeding is necessarily limited because, "with the exception of the detrimental effects of aging and a few other issues related to safety only during the period of extended operations, the [NRC's] existing regulatory processes are sufficient to ensure that the licensing bases of operating plants provide an acceptable level of safety to protect the public health and safety."³¹ The scope of a review

³⁰ CLI-01-20, slip op. at 2.

³¹ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 152 (2001).

under 10 C.F.R. Part 54 “is confined to the small number of issues uniquely determined by the Commission to be relevant for protecting the public health and safety during the renewal term, leaving all other issues to be addressed by the agency’s existing regulatory processes.”³² In affirming the Licensing Board’s decision, the Commission in the *Turkey Point* proceeding reiterated the limited scope of both the NRC license renewal process and any associated adjudicatory hearing. *See Turkey Point*, CLI-01-17, slip op. at 4-11 (“Adjudicatory hearings in individual license renewal proceedings will share the same scope of issues as our NRC staff review, for our hearing process (like our staff’s review) necessarily examines only the questions our safety rules make pertinent.”).

As reflected in *Turkey Point*, consideration of environmental issues in the context of license renewal proceedings is specifically limited by NRC regulations in 10 C.F.R. Part 51, by the NRC’s “Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants” (NUREG-1437) and by NRC case precedent. As discussed further below, a number of environmental issues potentially relevant to license renewal are classified in 10 C.F.R. Part 51, Subpart A, Appendix B as “Category 1” issues, which means that “the Commission resolved the[se] issues generically for all plants and those issues are not subject to further evaluation in any license renewal proceeding.”³³

The Commission provides processes in which to address new and significant environmental information. The Commission explained in *Turkey Point*:

The Commission recognizes that even generic findings sometimes need revisiting in particular contexts. Our rules thus provide a number of opportunities for individuals to alert the Commission to new and significant information that might render a generic finding invalid, either

³² *Id.* (emphasis added).

³³ *Id.* at 152-53 (emphasis added).

with respect to all nuclear power plants or for one plant in particular. In the hearing process, for example, petitioners with new information showing that a generic rule would not serve its purpose at a particular plant may seek a waiver of the rule. *See* 10 C.F.R. § 2.758 Petitioners with evidence that a generic finding is incorrect for all plants may petition the Commission to initiate a fresh rulemaking. *See* 10 C.F.R. § 2.802. Such petitioners may also use the SEIS notice-and-comment process to ask the NRC to forgo use of the suspect generic finding and to suspend license renewal proceedings, pending a rulemaking or updating of the GEIS. *See* 61 Fed. Reg. at 28,470; GEIS at 1-10 to 1-11.³⁴

Therefore, absent action by the Commission, a Category 1 environmental issue – even if based on allegedly new and significant information – does not need to be addressed in a site-specific Environmental Impact Statement (“EIS”) and cannot be adjudicated in a plant-specific license renewal proceeding.

V. ANALYSIS OF PETITIONERS’ CONTENTIONS

As demonstrated below, the proposed contentions submitted by NIRS and BREDL either lack sufficient specificity and basis as required under the Commission’s rules, do not fall within the limited scope of a license renewal proceeding, or both. Accordingly, the Amended Petitions should be denied and this matter dismissed.

A. NIRS CONTENTIONS

NIRS Contention 1.1.1

Use of MOX Fuel Will Have a Significant Impact on the Safe Operation of the McGuire and Catawba Plants During the License Renewal Period and Must be Considered in the License Renewal Application

Response to Contention

In its Contention 1.1.1, NIRS argues that Duke’s future plans to use mixed oxide (“MOX”) fuel in its McGuire and Catawba nuclear power plants will significantly impact the safe operation of those facilities, and must therefore be considered in Duke’s license renewal

³⁴ *Turkey Point*, CLI-01-17, slip op. at 12.

application. *See* NIRS Contentions at 2. NIRS states that, while Duke does not now use MOX fuel in any of its facilities, Duke currently intends to file for license amendments to load MOX fuel in at least one of the McGuire and Catawba units in 2002, and to apply for such license amendments for all four units in 2005. NIRS argues that the effects of MOX fuel use on aging reactor components should therefore be considered in the context of license renewal as an aging management issue under Part 54. NIRS Contentions at 2-4.

This proposed contention is outside the scope of this proceeding. Duke is not authorized to use MOX fuel at McGuire or Catawba and the present license renewal application does not request such approval. Duke has made similar arguments on the inadmissibility of MOX fuel-related issues in response to BREDL's October 23, 2001 Petition to Dismiss and that discussion is incorporated here by reference. *See* Duke Response to Petition at 7-12. BREDL's petition remains pending before the Commission.

In the cover letter accompanying the license renewal application to the NRC, Duke explained its possible future use of MOX fuel at McGuire and Catawba as part of an international program to reduce stockpiles of surplus weapons plutonium in the United States and Russia. However, the license renewal application assumes throughout that licensed activities are now, and will continue to be, conducted in accordance with the facilities' current licensing bases (*i.e.*, use of low enriched uranium fuel only). Any changes made to the current licensing bases of McGuire or Catawba during the NRC Staff's review of the renewal application will be made in accordance with Commission regulations.³⁵ Similarly, following issuance of the

³⁵ The Commission's regulations in 10 C.F.R. § 54.21(b) state, with regard to current licensing basis changes that occur during the NRC Staff's review of the application, that the applicant must submit "an amendment to the renewal application . . . that identifies any change to the CLB of the facility that materially affects the contents of the license renewal application, including the FSAR supplement."

renewed operating licenses, Duke will address any future changes in the current licensing bases at the time of those changes and in accordance with governing NRC regulations.³⁶

As set forth in detail below, the mere possibility of future use of MOX fuel has in no way changed the current licensing basis of either the McGuire or Catawba plants, and therefore need not be addressed in Duke's license renewal application now before the NRC Staff for review. Duke will also separately apply for all necessary NRC approvals and license amendments prior to loading any MOX fuel in its reactors. Those amendment applications will contain the required safety analyses, including required analyses of any changes in the McGuire and Catawba licensing bases related to the use of MOX fuel and any long-term impacts (including any impacts during the period of extended operation). NIRS's concern related to MOX effects therefore should be addressed in the context of any MOX-related license amendment requests Duke files with the NRC.³⁷ Duke is currently planning to submit in the spring of 2002 a license amendment request to the NRC to allow the loading of a very limited number of MOX fuel demonstration assemblies. Use of those assemblies would begin no earlier than 2004. The current schedule calls for submittal in late 2003 or early 2004 of license

³⁶ See, e.g., 10 C.F.R. § 54.37(b).

³⁷ NIRS's concern that "use of MOX will require substantial modifications to the aging management plans specified in the license renewal application as submitted" (NIRS Contentions at 2) should be raised in connection with any MOX license amendment applications. Duke has made clear that it will fully address regulatory concerns surrounding MOX fuel use in a timely fashion; however, that time does not begin until license amendment applications requesting approval of use of MOX fuel are actually filed with the NRC. An analogous position was upheld in a recent Licensing Board decision on an application to construct a MOX fuel fabrication facility, where contentions related to use of MOX fuel in commercial reactors were found to be inadmissible and to be a more appropriately raised in connection with an application to use MOX fuel. See *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, __ NRC __, slip op. at 43-44, 73-74 (Dec. 6, 2001).

amendment requests to the NRC to allow the use of MOX fuel in batch quantities, with such use planned to begin no earlier than late 2007.

The schedules for MOX fuel-related license amendment requests and for use of MOX fuel at McGuire and Catawba, and indeed even the continuation of the MOX fuel project by the governments of the United States and Russia, are dependent on various factors, including (but not necessarily limited to) the NRC reviews of license amendment applications, U.S. Department of Energy actions, the licensing of the MOX fuel fabrication facility by the NRC, international agreements, and plutonium disposition activities in Russia. Based on the number, type, and significance of external factors involved, the currently contemplated schedule is subject to change. This underscores the fact that it would be premature and inefficient to address MOX fuel issues in the present proceeding.³⁸

In sum, future use of MOX fuel at McGuire and Catawba is far from a certainty. Moreover, any future use of MOX fuel at Duke reactors — should it occur — will come only after completion of an NRC licensing action that is separate from, and independent of, the instant license renewal application. The present license renewal application does not seek approval for MOX fuel use, is in no way dependent upon the use of MOX fuel, and is of importance to Duke regardless of whether use of MOX fuel is ever authorized or initiated. The MOX fuel licensing process, should it go forward, would involve a separate NRC license amendment application, safety analysis, Technical Specification revisions, and environmental analysis. NRC regulations

³⁸

It would be inefficient to consider MOX-related issues now because, absent a MOX license amendment application, those issues would never ripen. In addition, if a MOX application is filed, the effect of addressing those issues here would be that the issues may well have to be addressed twice.

would provide an opportunity for a hearing in connection with any MOX fuel-related license amendment application.³⁹

For the above reasons, NIRS Contention 1.1.1 should be denied in its entirety as inadmissible.

NIRS Contention 1.1.2

The McGuire/Catawba License Renewal Application Fails to Analyze Potential Impacts on Plant Operation and Surrounding Communities Resulting From Possible Terrorist Attacks upon the Facilities, Including with Regard to Use of MOX Fuel, and Storage of Spent Fuel, at the Facilities

Response to Contention

NIRS's Contention 1.1.2, although divided into numerous subparts, in essence claims that the license renewal application is deficient because, in the wake of the September 11, 2001 attacks on the United States, it does not address the possibility of future terrorist attacks against either facility. As demonstrated below, this proposed contention is inadmissible in its entirety.

Most of Contention 1.1.2 is concerned with different aspects of the possibility of a terrorist attack. This includes, specifically, attacks by aircraft,⁴⁰ truck bomb,⁴¹ land,⁴² and water,⁴³ as well as attacks in general.⁴⁴ NIRS is also concerned with alleged complications posed

³⁹ This point appears to be recognized by NIRS, which admits that it "is not bringing all the contentions that we would bring on the question of using MOX fuel in these four reactors." NIRS Contentions at 4.

⁴⁰ See NIRS Contentions 1.1.2(a), (d) and (l). Duke also hereby incorporates its arguments made below with regard to NIRS Contention 3.1 in responding to Contention 1.1.2(d), which NIRS describes as "more fully outlined under [Contention 3.1] . . ." NIRS Contentions at 8.

⁴¹ See NIRS Contention 1.1.2(b).

⁴² See NIRS Contention 1.1.2(f).

⁴³ See NIRS Contention 1.1.2(c).

⁴⁴ See NIRS Contentions 1.1.2(e) and (n).

by the use of MOX fuel at the McGuire and Catawba reactors with regard to terrorist attacks,⁴⁵ the resources needed to cope with any such attacks,⁴⁶ the socioeconomic impact of closing to public use (for reasons of security) nearby lakes used by the plants for cooling purposes,⁴⁷ and the response of the NRC itself, both to terrorism concerns generally and to onsite spent fuel storage specifically.⁴⁸ NIRS Contentions at 5-12.

NIRS is seeking relief that cannot be granted by this Licensing Board, with regard to any part of Contention 1.1.2, for two reasons: (1) the security concerns involve generic issues currently under review by the Commission, and (2) the concerns in any event relate to matters outside the scope of a license renewal proceeding.⁴⁹ Additionally, the MOX-related terrorism issues are outside the scope of the proceeding for the reasons discussed in connection with NIRS Contention 1.1.1.⁵⁰

⁴⁵ See NIRS Contentions 1.1.2(h), (i) and (j).

⁴⁶ See NIRS Contention 1.1.2(k). This contention appears to challenge Duke's existing emergency plans for the McGuire and Catawba plants, and as such is inadmissible here. See *Turkey Point*, CLI-01-17, slip op. at 8 ("Emergency planning . . . is one of the safety issues that need not be re-examined within the context of license renewal").

⁴⁷ See NIRS Contention 1.1.2(g).

⁴⁸ See NIRS Contention 1.1.2(m).

⁴⁹ Although NIRS Contention 1.1.2(g) must be denied as a terrorism-related contention for reasons provided above, it should also be noted that, with regard to "socioeconomic impacts," Appendix B to Subpart A of 10 C.F.R. Part 51, Table B-1, under the heading "Socioeconomics," classifies impacts of license renewal on tourism and recreation as Category 1 environmental issues. As such, "those issues are not subject to further evaluation in any license renewal proceeding." *Turkey Point*, LBP-01-6, 53 NRC at 153. Contention 1.1.2(g) must be denied for this reason as well.

⁵⁰ As with NIRS Contention 1.1.1 above, much of Duke's argument on this proposed contention was also made in response to similar arguments by BREDL in its October 23, 2001 Petition to Dismiss, which remains pending before the Commission.

1. NIRS's Security-Related Concerns Involve Generic Issues Currently Under Review by the Commission

NIRS's security-related concerns are in reality present-day generic issues currently under review by the Commission. In the cover letter transmitting his October 16, 2001 response to questions regarding nuclear facility security posed by Congressman Edward Markey, NRC Chairman Richard Meserve stated that: "For the longer term, I, with the full support of the Commission, have directed the NRC Staff to thoroughly reevaluate the NRC's safeguards and physical security programs. This reevaluation will be a top-to-bottom analysis involving all aspects of the Agency's safeguards and physical security programs." It is therefore clear that the NRC is addressing security and terrorism matters as current generic regulatory issues. In addition, there have been a number of recent legislative proposals dealing with the possible terrorist threat to U.S. nuclear power plants,⁵¹ which could result in new mandated security requirements being placed on all nuclear facilities. Given the significance and generic nature of these security concerns, the Commission's (and Congress') assessment of NRC security requirements will apply to all (not merely some) NRC commercial reactors during both a present license term and any period of extended operation. The Commission's ongoing generic review of security issues is thus the appropriate vehicle for considering NIRS's security-related concerns. Well-established Commission precedent holds that proposed contentions concerning

⁵¹ See, e.g., H.R. 2983, 107th Cong. § 12 (2001), which was passed by the House of Representatives on November 27, 2001, and which would, *inter alia*, require a determination by the President in consultation with the NRC of which types of terrorist threats are the responsibility of the Federal government to protect against, and which are the responsibility of the plants themselves. The NRC would then be required to issue regulations ensuring that its licensees address the threats for which they are responsible. See also S. 1746 and its companion bill H.R. 3382 (proposals to federalize nuclear power plant security forces). As a further example of action in this area, see also Letter from NRC Chairman Meserve to Congressman W.J. "Billy" Tauzin, enclosing Commission legislative proposals to improve security at nuclear power plants (Nov. 29, 2001).

generic issues that are (or are about to become) the subject of rulemaking by the NRC should not be adjudicated in individual licensing proceedings.⁵²

Similarly, NIRS also repeatedly challenges the current design basis threat for the McGuire and Catawba reactors. *See, e.g.*, Contention 1.1.2(b) (“A significantly larger amount of explosive force can be delivered by a land vehicle than is postulated under the Design Basis Threat”); Contention 1.1.2(c) (“The NRC and Duke have not analyzed an attack on the McGuire and Catawba nuclear power stations via attacks of sabotage and terrorism directed by approach from the water”); 1.1.2(e) (“Impacts on outside containment structures and functions”); 1.1.2(f) (“The current Design Basis Threat unrealistically limits the applicant units [sic] station force-on-force security response capability”); 1.1.2(l) (“[T]he NRC has not adequately or reasonably evaluated the very real threat [from attack by an aircraft crash] that exists today”);⁵³ 1.1.2(m) (“Potential for terrorism and an analysis of its impacts should also be factored by the [NRC] in a generic manner”); and 1.1.2(n) (“The application has not effectively analyzed or evaluated the vulnerability of the electrical grid systems [and] station switchyards to sabotage”). NIRS Contentions at 7-12. To the extent that NIRS seeks to attack Commission security regulations such as 10 C.F.R. Part 73 and 10 C.F.R. § 50.13 in connection with this individual license renewal proceeding, such an attack is impermissible in an individual licensing proceeding.⁵⁴ *See*

⁵² *See, e.g., Oconee*, CLI-99-11, 49 NRC at 345; *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 29-30 (1993).

⁵³ This design basis threat challenge is also made more generally in Contention 1.1.2(a), which refers to the “vulnerability of the applicant units to air assaults . . .” NIRS Contentions at 7. Contention 1.1.2(a) is also inadmissible for impermissibly challenging the design basis threat for the McGuire and Catawba plants.

⁵⁴ Contention 1.1.2(m) (and, in part, Contention 1.1.2(e)) also appear to challenge the Commission’s “Waste Confidence Rule” (10 C.F.R. § 51.23(a)) with regard to possible

10 C.F.R. § 2.758(a); *see also Turkey Point*, LBP-01-6, 53 NRC at 151; *Oconee*, CLI-99-11, 49 NRC at 334; *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-456, 7 NRC 63, 65 (1978).⁵⁵ Accordingly, NIRS's security concerns should be addressed as part of the Commission's ongoing generic review and as a rulemaking matter. They do not provide a basis on which to admit contentions in this proceeding.

2. *Security Issues Are Beyond the Scope of License Renewal*

Security issues such as those raised by NIRS are also clearly beyond the scope of a license renewal proceeding. The Commission specifically acknowledged as much in its Statement of Considerations to the 1991 final rule on license renewal: "[T]he Commission concludes that a review of the adequacy of existing security plans is not necessary as part of the license renewal review process." *See* "Final Rule, Nuclear Power Plant License Renewal," 56 Fed. Reg. 64,943, 64,967 (Dec. 13, 1991).

terrorist assaults on, and subsequent releases of radioactivity from, spent fuel stored onsite. In addition to constituting an impermissible attack on the Commission's regulations, these contentions run afoul of recent Commission precedent that spent fuel issues are not to be considered in license renewal proceedings. *See, e.g., Turkey Point*, CLI-01-17, slip op. at 27; *Oconee*, CLI-99-11, 49 NRC at 344-45.

⁵⁵ Currently, the design basis security threat is addressed in 10 C.F.R. § 73.1(a)(1). Commission regulations, 10 C.F.R. § 50.13, explicitly provide that NRC reactor licensees are not required to provide for design features or other measures to protect against the effects of attacks and destructive acts, including sabotage, by an enemy of the United States (including, but not limited to, foreign governments). The NRC and Federal case law have consistently held that the responsibility for defense against such acts of war lies with the United States government. *See Siegel v. Atomic Energy Commission*, 400 F.2d 778, 783-84 (D.C. Cir. 1968) (in licensing commercial reactors, the NRC is not required to consider issues related to — or require a showing of effective protection against — the possibilities of attack or sabotage by foreign enemies); *Carolina Power & Light Company* (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 NRC 2069, 2098 (1982) (where the Licensing Board declined to admit a proposed contention addressing an external attack by terrorists commandeering a very large airplane). *See also Turkey Point*, LBP-01-6, 53 NRC at 166 (contention alleging danger of aircraft crashes into Turkey Point spent fuel facilities "impermissibly challenges the design basis for external hazards").

NIRS's attempt in passing to use 10 C.F.R. § 51.53(c)(3)(iv) as a platform to allege deficiencies in the McGuire and Catawba license renewal Environmental Reports ("ERs") also fails. The Commission was explicit in its decision not to address security in a license renewal context, and therefore it would be erroneous to conclude that these issues somehow could be construed as "new information" to be addressed in a license renewal environmental review. There is no nexus to license renewal; protection against terrorist threats is a current and continuing process and not uniquely related to license renewal. Moreover, as discussed above, re-visiting the list of Category 2 issues to be addressed in a license renewal application would require Commission action under either 10 C.F.R. § 2.758 or §2.802. In particular, NIRS has not attempted to make the showing required by 10 C.F.R. § 2.758.

It is well-established that "the subject matter of all contentions is limited to the scope of the proceeding delineated by the Commission in its hearing notice and referral order delegating to the Licensing Board the authority to conduct the proceeding."⁵⁶ In this license renewal proceeding, the Commission's referral order explicitly limits the scope of the proceeding to discrete safety and environmental issues concerning the managing of aging effects.⁵⁷ In addition, the Commission stated that the review of environmental issues was limited "in

⁵⁶ See *Turkey Point*, LBP-01-6, 53 NRC at 151 (citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985)).

⁵⁷ CLI-01-20, slip op. at 2. See also "Final Rule, Nuclear Power Plant License Renewal; Revisions," 60 Fed. Reg. 22,461, 22,463-64 (May 8, 1995). The Commission there revised its "first principle of license renewal" to clarify that, "with the possible exception of the detrimental effects of aging on the functionality of certain plant systems, structures, and components in the period of extended operation and possibly a few other issues related to safety only during extended operation, the regulatory process is adequate to ensure that the licensing bases of all currently operating plants provides and maintains [sic] an acceptable level of safety so that operation will not be inimical to public health and safety or common defense and security." *Id.* at 22,464 (emphasis added).

accordance with 10 C.F.R. §§ 51.71(d) and 51.95(c).”⁵⁸ Because security issues fall outside the scope of a license renewal safety and environmental review, this proposed contention must be rejected.

3. *Terrorism Issues Related to Use of MOX Fuel are Beyond the Scope of License Renewal*

Subparts (h), (i) and (j) of NIRS Contention 1.1.2 are concerned with the impact that MOX fuel use at the McGuire and Catawba reactors would have on the “attractiveness” of the sites as targets of terrorist attack, and on “core breach accident scenarios whether directly from attack, or as a result of Station Blackout . . .”⁵⁹ NIRS Contentions at 9. In addition to the reasons discussed above related to all security issues, issues related to possible future MOX fuel use are entirely outside the scope of this license renewal proceeding. *See Duke’s Response to NIRS Contention 1.1.1 above.* Contentions 1.1.2(h), (i) and (j) must therefore be rejected as inadmissible.

For all of the above reasons, this Board should deny admission of NIRS Contention 1.1.2 in its entirety.

NIRS Contention 1.1.3

Duke has Failed to Analyze the Potential Effects of Global Climate Change, Including Increases in Severe Weather, in its License Renewal Application

Response to Contention

NIRS Contention 1.1.3 asserts that global climate change will cause increasingly severe weather, particularly storms, plus “increased temperature with either increased or constant

⁵⁸ CLI-01-20, slip op. at 2 (citations omitted).

⁵⁹ Duke explains the inapplicability of Station Blackout (“SBO”) to this proceeding, and resulting inadmissibility of NIRS’s Station Blackout-related contentions, at length below in its responses to NIRS Contentions 1.1.4 and 1.1.5. Duke hereby incorporates those arguments with regard to NIRS Contention 1.1.2(i).

precipitation.” NIRS states that Duke has failed to analyze the impacts upon reactor operations of “accelerating changes” in weather stemming from global climate change. Petitioner more specifically contends that: “Analysis of Climate Change must include an analysis of increased potential for Station Blackout by virtue of projected increased numbers and intensity of hurricanes and tornados and other severe weather.” NIRS Contentions at 12-13. At bottom, this proposed contention reflects NIRS’s attempt to cast an alleged phenomenon of global climate change, and its possible effects on reactor operations and the potential for Station Blackout, as an issue properly within the scope of this NRC license renewal proceeding. As discussed below, this effort is unsuccessful. It is unclear whether NIRS Contention 1.1.3 faults Duke’s compliance with license renewal safety requirements in 10 C.F.R. Part 54, or the environmental review requirements of 10 C.F.R. Part 51, or both. However, whether intended as a Part 54 safety review issue or a Part 51 environmental review issue, the proposed contention raises issues outside the scope of a license renewal review and is otherwise lacking in an adequate basis under 10 C.F.R. § 2.714(b)(2).

If the petitioner is challenging Duke’s adherence to Part 54 requirements,⁶⁰ NIRS Contention 1.1.3 fails to state a valid issue for adjudication in this proceeding. The Commission has limited the scope of this license renewal proceeding to certain discrete safety issues under Part 54 relating to Duke’s “review of the plant structures and components that will require an aging management review for the period of extended operation and the plant’s systems,

⁶⁰ Several references imply that NIRS challenges Duke’s compliance with 10 C.F.R. Part 54. In paragraph 2 of the proposed contention, NIRS refers to the alleged need to analyze the impacts of climate change “on reactor operations.” Similarly, in paragraph 4 of the proposed contention, NIRS refers indirectly to the need to consider the implications of climate change “in the analysis of whether component aging will be successfully managed to meet an ever moving target called ‘current license basis.’” NIRS Contentions at 12-13.

structures and components that are subject to an evaluation of time-limited aging analyses.”⁶¹ NIRS has not suggested that the aging management reviews for McGuire and Catawba are in any way deficient. Nor has NIRS identified how climate change, and any attendant increase in severe weather, might affect any of the aging analyses within the scope of Part 54 that Duke has performed. The proposed contention does not identify any specific impacts of climate change on the plant that are uniquely relevant to the period of extended operation.⁶² Indeed, NIRS does not cite to any section of the safety analyses in the license renewal application in support of its argument.⁶³

NIRS does suggest that climate change will increase the potential for “Station Blackout.” “Station Blackout” is defined in 10 C.F.R. § 50.2, and refers to the complete loss of alternating current (“ac”) electric power to the essential and nonessential switchgear buses in a nuclear power plant. A Station Blackout involves the loss of offsite power concurrent with turbine trip and failure of the onsite emergency ac power system, but not the loss of available ac power to buses fed by station batteries or the loss of power from “alternate ac sources.” *Id.* Because many safety systems required for reactor core decay heat removal and containment heat removal are dependent on ac power, NRC regulations in 10 C.F.R. § 50.63 specifically require reactor licensees to be able to withstand for a specified duration, and to recover from, a Station

⁶¹ See CLI-01-20, slip op. at 2.

⁶² 60 Fed. Reg. at 22,463-64 (discussing limited scope of license renewal review process).

⁶³ See *Turkey Point*, CLI-01-17, slip op. at 22; see also *Oconee*, CLI-99-11, 49 NRC at 333-34.

Blackout. For the Station Blackout duration, the plant must be capable of maintaining core cooling and appropriate containment integrity.⁶⁴

If NIRS Contention 1.1.3 seeks to challenge Duke's compliance with NRC requirements in 10 C.F.R. § 50.63 relating to Station Blackout, it is inadmissible. Ongoing issues of regulatory compliance for the McGuire and Catawba facilities are outside the scope of this license renewal proceeding.⁶⁵ Therefore, Duke's adherence to Station Blackout requirements for McGuire and Catawba may not be considered here.⁶⁶ Similarly, NIRS may not challenge the adequacy of the current licensing basis for McGuire or Catawba or 10 C.F.R. § 50.63 in a license renewal proceeding.⁶⁷

NIRS Contention 1.1.3 is similarly deficient if viewed as a challenge to Duke's compliance with the license renewal environmental requirements of Part 51.⁶⁸ Review of

⁶⁴ Regulatory guidance relating to Station Blackout is provided in NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors" (Aug. 1991) (NUMARC 87-00). This guidance has been endorsed by the NRC. See NRC Regulatory Guide 1.155, "Station Blackout" (1988).

⁶⁵ See 10 C.F.R. § 54.30(b).

⁶⁶ Plant weather is one of the factors for the coping duration calculation under 10 C.F.R. § 50.63. See NUMARC 87-00, pp. 3-1 – 3-9. The plant weather data input used for NUMARC 87-00 was provided by the NRC. See NUMARC 87-00, Table 3-2 and 3-3 notations. If the climate of the planet is altered in such a way as to affect the weather data provided in NUMARC 87-00 (presently used as input into SBO coping duration calculations), these changes would affect facility compliance with Part 50 criteria, not Part 54 standards, and would be implemented under 10 C.F.R. Part 50 for operating reactors. Any such changes would then become part of the current licensing basis.

⁶⁷ See *Turkey Point*, CLI-01-17, slip op. at 17, 28.

⁶⁸ The view that this is intended as a Part 51 contention is supported by the fact that the only parts of the renewal application alleged to be deficient are the Environmental Reports. In an apparent effort to link the issue of climate change to license renewal, NIRS cites, and mischaracterizes, only a single phrase from the McGuire ER at page 8-32. The McGuire ER refers to a discussion of "global climate change" in the *Joint DOE-Electric Power Research Institute Strategic Research and Development Plan to Optimize US Nuclear Power Plants*. NIRS's assertion (NIRS Contentions at 12) that Duke here "affirms"

environmental issues is limited in accordance with 10 C.F.R. §§ 51.71(d) and 51.95(c), and the GEIS, NUREG-1437.⁶⁹ The range of Category 2 environmental issues (set forth in 10 C.F.R. § 51.53(c)(3)(ii)) that an applicant must address in a license renewal Environmental Report does not include either the impacts of global climate change on reactor operations or the ways in which this asserted phenomenon might affect the environmental impacts of continued reactor operation.⁷⁰ Climate change certainly is not a consequence of license renewal. Likewise, the assertion that climate change will alter impacts of plant operation is speculation at best, with no clear chain of causation to matters relevant to license renewal ever defined by NIRS. Nor is there any basis provided in the contention to assume that any changes in “severe weather” and risks posed to the nuclear plant would not be addressed, as they emerge, as Part 50 issues through normal, ongoing regulatory processes. The unsupported and highly speculative assertion that the Environmental Report “must include an analysis of increased potential for Station Blackout by virtue of projected increases and intensity of hurricanes and tornados and other severe weather” is insufficient to challenge the adequacy of the McGuire and Catawba ERs.

In addition to raising matters that are outside the scope of a license renewal review, NIRS Contention 1.1.3 does not satisfy the basis and specificity requirements of

NIRS’s view of the facts about global climate change in the McGuire ER is incorrect. Interestingly, NIRS does not dispute the statement in the cited report that use of nuclear power can alleviate global climate change.

⁶⁹ See CLI-01-20, slip op. at 2.

⁷⁰ To the extent NIRS may be suggesting that the effects of climate change should be considered as an additional Category 2 environmental issue for license renewal, petitioner may not raise such an issue in this forum. Rather, petitioner’s remedy would be to file a petition for rulemaking. See 10 C.F.R. § 2.802.

In this regard, we note that “global climate change” (as raised by NIRS in Contentions 1.1.3, 1.1.4, 1.1.5, 1.1.8, and 1.2.2) is inherently a generic issue that is best addressed through ongoing, generic processes. See, e.g., 10 C.F.R. § 2.802.

10 C.F.R. § 2.714(b)(2). The references provided to the alleged facts or expert opinion that support the contention and upon which NIRS intends to rely are vague at best.⁷¹ These references clearly do not provide the “concise statement” required by Section 2.714(b)(2)(ii) to support NIRS’s assertion that the effects of global climate change on reactor operations (including the effects of climate change upon the potential for Station Blackout) should be addressed in the ER. Similarly, NIRS offers no specific substantive support for the proposition that climate change will result in increased numbers and intensity of hurricanes and tornadoes, and/or affect the potential for Station Blackout.

In sum, NIRS fails in this proposed contention to provide sufficient information “to show that a genuine dispute exists with the applicant on a material issue of law or fact.” The proposed contention raises matters outside the scope of a license renewal review, lacks a basis as required by the Commission’s regulations, and does not meet the requirements of 10 C.F.R. § 2.714(b)(2)(iii). For each of these reasons, it must be rejected.

NIRS Contention 1.1.4

The McGuire/Catawba License Renewal Application Fails to Analyze the Possible Effects of Ice Condenser Use, Terrorism, Global Climate Change and MOX Fuel Use upon Station Blackout Risk

Response to Contention

NIRS Contention 1.1.4 lists four sub-issues (1.1.4(a) through 1.1.4(d)) that raise various concerns regarding the issue of Station Blackout. Each of these four sub-issues is addressed separately below. As the basis for proposed Contention 1.1.4, NIRS argues that Station Blackout “contributes the largest share of risk of severe reactor accidents,” that it is

⁷¹ Neither NIRS’s reference to the DOE-EPRI Report cited in the McGuire ER nor its generalized reference to “abundant resources on Climate Change” (see NIRS Contentions at 12 n.8) satisfies the requirements in Section 2.714(b)(2)(ii). See *Oconee*, CLI-99-11, 49 NRC at 333-34.

therefore important that “every aspect of it be considered with regards to severe accident mitigation,” and that severe accident mitigation is a Category 2 environmental license renewal issue. NIRS refers to NUREG/CR-6427⁷² (which it described as containing “new information concerning station blackout and early containment failure”), and cites an excerpt from a summary of NUREG/CR-6427 findings by Dr. Edward Lyman. NIRS Contentions at 13-14. In terms of its focus, however, it is unclear whether NIRS Contention 1.1.4 alleges deficiencies in the license renewal application’s compliance with applicable requirements in 10 C.F.R. Part 54, 10 C.F.R. Part 51, or both.

By way of background, NUREG/CR-6427, referenced by the petitioner, addresses the Direct Containment Heating (“DCH”) issue for nuclear reactor units with ice condenser containments in the United States (such as McGuire and Catawba). DCH phenomena in ice condenser plants are different in some important aspects from DCH phenomena in other pressurized water reactors (“PWRs”), in that these plants have ice beds to suppress Design Basis Accident (“DBA”) steam loads, ac-powered igniters to control hydrogen concentrations in the atmosphere, smaller containment volumes, and containment buildings with lower ultimate capacities to withstand internal pressures.⁷³ In general, NUREG/CR-6427 concluded that ice condenser plants are more vulnerable to early containment failure than PWRs with large dry or sub-atmospheric containments, but that this vulnerability is not due to DCH. In fact, the report reflected that the probability of early containment failure risk in ice condenser units was dominated by non-DCH hydrogen combustion events rather than by DCH, and would largely depend on plant-specific probabilities for Station Blackout (hydrogen igniter systems are not

⁷² NUREG/CR-6427/SAND99-2553, “Assessment of the DCH Issue for Plants with Ice Condenser Containments” (April 2000) (“NUREG/CR-6427”).

⁷³ NUREG/CR-6427, Abstract, at iii.

operable during Station Blackout events because they are ac powered).⁷⁴ Even though the ice condenser plants were determined to be vulnerable to blackout sequences, the weighted probability of early containment failure (i.e., averaged over all full power internal events) was considered to be generally within the goal for containment performance.⁷⁵

According to this NUREG:

All plants, especially McGuire, would benefit from reducing the station blackout frequency or some means of hydrogen control that is effective in station blackouts. The risk reduction was greater than an order of magnitude for all plants; however, NRC goals are generally achieved without such actions. If the igniters and air return fans are not available (e.g., SBOs), uncertainties in containment loads are dominated by uncertainties in hydrogen combustion phenomena and the amount of clad oxidized during core degradation.⁷⁶

Discussing the results of NUREG/CR-6427, the Director of the NRC's Office of Nuclear Regulatory Research commented:

As a result of this research, we now know that the threat to containment integrity posed by DCH is vastly reduced and that DCH constitutes, for the overwhelming majority of plants, no substantive risk. . . . Resolution of the DCH issue has been achieved by demonstrating that either the containment failure probability is highly unlikely based on the containment's strength alone (the case for virtually all PWRs with large dry and subatmospheric containments) or that the conditional probability of high pressure melt ejection leading to DCH, together with the containment strength, leads to acceptably small containment failure probabilities and a small probability of large early release. . . . Even though the ice condenser plants were determined to be vulnerable to

⁷⁴ NUREG/CR-6427 relies in part on the results of NRC staff reviews of Individual Plant Evaluations (IPE) that had been performed in response to Generic Letter 88-20. These reviews are documented in NUREG-1560, "Individual Plant Examination Program: Perspectives on Reactor Safety and Plant Performance" (1996), which is listed as one of the many references in NUREG/CR-6427.

⁷⁵ "Memorandum to Samuel Collins, Director, Office of Nuclear Reactor Regulation from Ashok Thadani, Director, Office of Nuclear Regulatory Research, re DCH Issue Resolution for Ice Condenser Plants" (June 22, 2000), at 1 ("Thadani Memorandum").

⁷⁶ NUREG/CR-6427, Abstract, at iv.

blackout sequences, the weighted probability of early containment failure (i.e., averaged over all full power internal events), was generally within the goal for containment performance.⁷⁷

Dr. Thadani also commented that the possible implications of higher conditional failure probabilities for ice condenser plants, as well as BWR Mark III plants, during Station Blackout sequences will be considered as part of the NRC's initiative to risk-inform 10 C.F.R. § 50.44 on an accelerated schedule.⁷⁸ Thadani Memorandum at 2.

(a) Sub-issue 1.1.4(a)

NIRS Contention 1.1.4(a) states: "Duke's license renewal application fails to mention NUREG/CR-6427, nor to provide an analysis of the findings of this report with regard to these four ice-condenser reactors." NIRS Contentions at 15. Again in this proposed contention, it is unclear whether NIRS is raising a Part 54 safety review issue or a Part 51 environmental review issue. However, in either case the proposed contention fails.

To the extent that this proposed contention is intended to assert that 10 C.F.R. Part 54 requires consideration of NUREG/CR-6427 in the license renewal application, it raises an issue that is beyond the scope of this proceeding, and must therefore be dismissed. Neither

⁷⁷ Thadani Memorandum at 1-2.

⁷⁸ On November 14, 2001, the NRC announced the availability of a draft rule concerning standards for combustible gas control systems in light-water-cooled power reactors ("LWRs"), designed to ensure that there is no loss of containment structural integrity. See 66 Fed. Reg. 57,001. This rulemaking, when complete, may impose requirements on all LWRs, and specific requirements are identified for ice condenser containments, including those at McGuire and Catawba.

The NRC Staff provided, with regard to its draft rule language, that "Deliberate ignition systems, if available, generally consume the hydrogen before it reaches concentrations that can be detrimental to containment integrity. The staff is investigating the cost effectiveness of improving the availability of these systems during Station Blackout sequences as part of GI-189." See NRC Draft Rule Language as provided at <http://ruleforum.llnl.gov>.

NRC regulations nor applicable regulatory guidance requires that license renewal applications (including renewal applications for ice condenser plants such as McGuire and Catawba) address the findings of NUREG/CR-6427. Moreover, that NUREG addresses issues that relate to the current licensing basis for ice condenser plants, and that are not uniquely related to the period of extended operation. Thus, the fact that Duke's application does not explicitly address the findings of NUREG/CR-6427 has no regulatory implications related to license renewal under Part 54, and certainly does not indicate that the renewal application is in any way deficient.

To the extent that NIRS Contention 1.1.4(a) is intended to challenge Duke's compliance with Part 51 license renewal requirements, it is still defective. Although correct in asserting that license renewal applicants are required to address the issue of severe accident mitigation alternatives ("SAMAs") in their renewal stage Environmental Reports,⁷⁹ NIRS has failed to specify, with basis, how Duke's treatment of the SAMA issue in the application is in any way deficient or what relief might be appropriate. Because the NRC had not previously considered severe accident mitigation alternatives for McGuire or Catawba, Duke included SAMA analyses for both McGuire and Catawba in its license renewal application.⁸⁰ Duke has therefore satisfied the requirements of 10 C.F.R. § 51.53(c)(3)(ii)(L). Proposed Contention 1.1.4(a) does not refer to either of the SAMA analyses that Duke included in the ERs, or provide a single specific citation to them. Rather, NIRS's sole basis for claiming that the license

⁷⁹ 10 C.F.R. § 51.53(c)(3)(ii)(L) provides that if the NRC Staff has not previously considered SAMAs for the applicant's plant in an EIS, an EIS supplement, or an EA, then "a consideration of alternatives to mitigate severe accidents must be provided."

⁸⁰ The McGuire SAMA is described in Section 4.21 of the McGuire ER, and the McGuire SAMA analysis itself is found in Attachment K to the McGuire ER. Similarly, the Catawba SAMA analysis is described in Section 4.21 of the Catawba ER, and the SAMA analysis itself is included as Attachment H to the Catawba ER.

application is deficient appears to be Duke's failure to specifically reference NUREG/CR-6427, which (as noted above) Duke is not required to do.

Petitioner's broad reliance on NUREG/CR-6427 is undermined by the fact that this NUREG, on its face, does not provide any basis to conclude that Duke's license renewal SAMA analyses are inadequate. To the contrary, those SAMA analyses address the primary substantive conclusions of NUREG/CR-6427. For example, regarding the NUREG's findings on early containment failure probability, both the McGuire and Catawba SAMA analyses evaluate early containment failure, as well as other containment failure modes.⁸¹ Thus, it is incorrect to suggest that Duke has been remiss in responding to NUREG/CR-6427 issues relating to early containment failure. Additionally, regarding NUREG/CR-6427's conclusions on the benefits of reducing the frequency of Station Blackout, especially at McGuire, Duke's SAMA analyses reflect that Duke has already taken actions to reduce the frequency of Station Blackout by taking actions to improve emergency diesel generator reliability.⁸²

In contrast, NUREG/CR-6427 only generally addresses hydrogen control in a Station Blackout and does not evaluate any specific severe accident mitigation alternative. Likewise, NUREG/CR-6427 does not acknowledge the plant changes that have occurred as a result of the initial Probabilistic Risk Assessments ("PRA") and Individual Plant Examination ("IPE") studies previously performed for McGuire and Catawba as part of prior, ongoing Part 50 regulatory initiatives. Finally, with respect to NUREG/CR-6427's finding regarding the

⁸¹ See McGuire ER, Attachment K, Table 5-1, and Catawba ER, Attachment H, Table 5-1.

⁸² Specifically, as noted in the McGuire SAMA analysis (McGuire ER, Attachment K, at 7 (Table 2-1)), an Emergency Diesel Generator System Reliability Centered Maintenance study was performed. The study made several recommendations (such as hardware modifications and changes to the maintenance program) that were implemented to enhance the reliability of the Emergency Diesel Generator System.

desirability of installing effective hydrogen control measures, several such alternatives are identified in the McGuire and Catawba SAMA analyses, including the installation of backup power to the hydrogen igniters.⁸³ In sum, waving around the NUREG while ignoring the license application materials themselves does not provide a basis for an admissible contention. NIRS has failed to articulate any relief that could be granted in this proceeding.

As a potential reference document, NUREG/CR-6427 provides no more insights on McGuire and Catawba than the plant-specific analyses previously performed by Duke that are described in Attachment K of the McGuire ER and Attachment H of the Catawba ER. Chapter 2 of each of Duke's SAMA analyses contains a brief description of the previous PRAs and IPEs that have been completed at each station, and Table 2-1 identifies the risk reduction measures implemented at each station as a result of these studies. NUREG/CR-6427 does not take into account the current design, operation, and maintenance of McGuire and Catawba, given the age of the underlying studies and data used.⁸⁴ It therefore provides no basis for a contention that the SAMA analyses are inadequate.

In sum, Contention 1.1.4(a) fails to meet the basis and specificity standards for contentions set forth in 10 C.F.R. § 2.714(b)(2). Petitioner's general citation to NUREG/CR-6427, without specific citations and without reference to the application and environmental

⁸³ See McGuire ER, Attachment K, Table 5-1; Catawba ER, Attachment H, Table 5-1.

⁸⁴ It is important to note that the data used in NUREG/CR-6427 is based in large part on evaluations and studies originally performed by Duke. An Individual Plant Examination for McGuire was submitted by Duke to the NRC in 1991; an IPE for Catawba was submitted in 1992. These Duke evaluations, along with others from the industry, were used by the NRC to prepare NUREG-1560, a 1997 review of individual IPEs prepared in response to NRC Generic Letter 88-20, "Individual Plant Evaluations for Severe Accident Vulnerabilities." In turn, NUREG-1560 comprises a primary source for NUREG/CR-6427. Significantly, however, the plant data underlying NUREG-1560 (and, in turn, NUREG/CR-6427) are now nearly ten years old.

reports, does not satisfy 10 C.F.R. §§ 2.714(b)(2)(ii) and 2.714(b)(2)(iii). NIRS has failed to provide “sufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact.” In addition, NIRS has failed to raise an issue for which relief could be granted. 10 C.F.R. § 2.714(d)(2)(ii). For each of these reasons, this contention must be dismissed.

(b) Sub-issue 1.1.4(b)

NIRS Contention 1.1.4(b) states: “The risk factors of intentional acts of terror, inadvertent acts of war in the event of armed conflict within the U.S. have not been analyzed with respect to station blackout.” NIRS Contentions at 15. As with NIRS Contention 1.1.4(a), it is not clear whether this contention alleges deficiencies in 10 C.F.R. Part 54 compliance or 10 C.F.R. Part 51 compliance. However, in either case the proposed contention fails.

With regard to the adequacy of the McGuire and Catawba license renewal ERs — and, in particular, the SAMA analyses — NIRS Contention 1.1.4(b) fails to demonstrate any deficiencies in the treatment of the Station Blackout issue in the SAMA analyses. Simply put, there is no NRC requirement that “risk factors” such as terrorism or acts of war be considered with respect to Station Blackout pursuant to 10 C.F.R. § 51.53(c)(3)(ii)(L). Nor do NRC regulations require these types of security issues to be considered elsewhere in the Environmental Reports, since they are not Category 2 environmental issues for purposes of license renewal. Because NIRS has not shown any deficiencies in Duke’s compliance with Part 51 requirements in this contention, the proposed contention must be dismissed.

Similarly, NIRS Contention 1.1.4(b) raises no valid issues under 10 C.F.R. Part 54. As discussed in connection with Contention 1.1.4(a) above, Station Blackout requirements in 10 C.F.R. § 50.63 are part of the current licensing basis for McGuire and Catawba. Duke’s ongoing compliance with NRC regulations on Station Blackout (including any implications

allegedly raised by NUREG/CR-6427) is not at issue in this proceeding.⁸⁵ *See* 10 C.F.R. § 54.30. Similarly, Duke's security design basis under 10 C.F.R. Part 73 is not at issue in a license renewal review. Significantly, this conclusion does not change merely because NIRS has overlaid its security-related concerns with a Station Blackout issue.⁸⁶ The result is the same: the issues raised in NIRS Contention 1.1.4(b) are beyond the scope of license renewal and this proposed contention is inadmissible.

Further, NIRS Contention 1.1.4(b) must be rejected because it fails to meet the NRC's standards for contentions in 10 C.F.R. § 2.714(b)(2). Contrary to Section 2.714(b)(2)(i), no basis is provided for the contention. Additionally, NIRS does not provide a "concise statement" of supporting facts or expert opinion, or references to sources and underlying documents, as required by Section 2.714(b)(2)(ii), related to "risk factors" and Station Blackout. The general reference to NUREG/CR-6427 that appears in the background discussion of Contention 1.1.4 appears to have no relationship to the security and terrorism-related "risk factors" that are the focus of Contention 1.1.4(b). Finally, contrary to § 2.714(b)(2)(iii), this proposed contention does not contain a single reference to the specific portions of the renewal application that NIRS disputes, and thus fails to provide sufficient information "to show that a genuine dispute exists with the applicant on a material issue of law or fact." Given all of these deficiencies, this proposed contention must be dismissed.

⁸⁵ *See* CLI-01-20, slip op. at 2.

⁸⁶ *See also* 10 C.F.R. § 50.13. As discussed in Duke's response to NIRS Contention 1.1.2, NIRS's security-related concerns involve generic issues currently under review by the Commission and Congress. The NRC is addressing these matters as a current regulatory issue. The generic nature of NIRS's security concerns, as well as the likelihood that these issues may be the subject of a rulemaking, makes their consideration in an individual licensing proceeding inappropriate.

(c) Sub-issue 1.1.4(c)

NIRS Contention 1.1.4(c) states: “The contribution of increased risk of station blackout from acceleration in severe weather associated with Global Climate Change has not been evaluated.” NIRS Contentions at 15. This contention is substantively indistinguishable from NIRS Contention 1.1.3, which is discussed above. In sum, Contention 1.1.3 is an attempt to inject the issue of global climate change into an NRC license renewal proceeding. NIRS does so by alleging unparticularized deficiencies in the license renewal-related Environmental Reports for McGuire and Catawba (because they do not consider climate change), and by simply asserting that any analysis of climate change “must include an analysis of increased potential for Station Blackout . . .” The fatal flaws in Contention 1.1.3 are discussed above. Sub-issue 1.1.4(c) simply draws a purported link to Station Blackout.

Like NIRS Contentions 1.1.3, 1.1.4(a) and 1.1.4(b), NIRS Contention 1.1.4(c) raises issues that are outside of the limited scope of this NRC license renewal proceeding, and that therefore cannot be considered here. Ongoing compliance with 10 C.F.R. § 50.63 is not a license renewal issue, nor may Section 50.63 be challenged in this proceeding. Likewise, the nexus that NIRS attempts to draw to the Environmental Reports lacks basis and is tenuous at best. McGuire and Catawba are designed to cope with Station Blackouts in accordance with the NRC rule; license renewal does not change this fact. There is no basis on which to conclude that there is an increased potential for a Station Blackout due to climate change or that there are some additional environmental impacts that must be addressed in a license renewal environmental review. Proposed Contention 1.1.4(c) is vague, lacks a sufficient basis, is outside scope, and therefore must be rejected.

(d) Sub-issue 1.1.4(d)

NIRS Contention 1.1.4(d)⁸⁷ states: “If MOX plutonium fuel is to be used in these reactors, the interaction of MOX and station blackout must also be analyzed, both from the perspective of increased chances of SBO due to sabotage, as well as increased likelihood of accidents and also the consequences of SBO and containment failures with MOX fuel in the core which the Department of Energy has acknowledged in their Final Supplemental EIS on Surplus Plutonium Disposition would lead to a significant increase in latent cancer fatalities compared to a LEU core, supporting the findings of Dr. Edwin Lyman at Nuclear Control Institute” (footnote omitted). NIRS Contentions at 15.

As discussed in detail in Duke’s response to NIRS Contention 1.1.1, all issues relating to the possible future use of MOX fuel at the McGuire and Catawba plants are beyond the scope of this license renewal proceeding. Thus, contentions based upon the assumption of MOX fuel use — including NIRS Contention 1.1.4.(d) — are inadmissible, given the limited scope of this hearing. Whether there is an “increased likelihood of accidents” or an increase in the consequences of a Station Blackout or “containment failure” with MOX fuel in the core, are clearly MOX issues to be addressed in a MOX application. Moreover, as discussed above in Duke’s response to NIRS Contentions 1.1.4(a), (b), and (c), the issue of Station Blackout, as presented by NIRS in Contention 1.1.4, is a current licensing basis issue outside the scope of this proceeding. Petitioner has not demonstrated that the license renewal application has failed to meet current license renewal requirements in either 10 C.F.R. Part 51 or Part 54. Thus, petitioner’s proposed contentions concerning Station Blackout are not admissible.

⁸⁷ This contention is actually numbered as “1.1.5(d)” in NIRS’s Contentions (*see* p. 15). We assume this is a typographical error, and that NIRS in fact intended to designate this contention “1.1.4(d).” Accordingly, Duke will refer to this contention as “1.1.4(d).”

The inadmissibility of MOX fuel use topics in this license renewal proceeding is not remedied by petitioner's attempts to re-characterize the issue as one involving "the interaction of MOX and station blackout." Nor is this conclusion affected by the slightly different slant presented in NIRS Contention 1.1.4(d) (e.g., the alleged "increased chances of SBO due to sabotage"). This aspect of Contention 1.1.4(d) is inadmissible because issues relating to security and safeguards are beyond the scope of this license renewal proceeding.

In sum, NIRS Contention 1.1.4(d) is beyond the scope of this licensee renewal proceeding and does not satisfy 10 C.F.R. § 2.714(b)(2)(i), (ii), or (iii). The proposed contention must be dismissed.

NIRS Contention 1.1.5

The McGuire/Catawba License Renewal Application Fails to Consider an Alternative to Mitigate Station Blackout, in Spite of the Potential Consequences Arising from Terrorism, Climate Change and MOX Fuel Use

Response to Contention

In this proposed contention, NIRS asserts that, pursuant to 10 C.F.R. § 51.53(c)(3)(ii)(L), Duke should mitigate the alleged risks of Station Blackout by providing a dedicated electrical line for both McGuire and Catawba from the dams adjacent to each reactor site. NIRS Contentions at 16. As a basis, NIRS alleges general problems with emergency diesel generator ("EDG") reliability. NIRS also argues that, in light of the conclusions in NUREG/CR-6427, the "new factors" of terrorism and climate change, and the "significantly increase[d] . . . consequences" posed by "the possibility of MOX . . . fuel use," its suggested mitigation alternative should be analyzed. *Id.* at 16-17.

NIRS Contention 1.1.5, by its terms, is a generalized challenge to the adequacy of the SAMA analyses submitted pursuant to 10 C.F.R. § 51.53(c)(3)(ii)(L) as part of the license renewal Environmental Reports. In effect, it is very similar to NIRS Contention 1.1.4 if that

proposed contention is read as a Part 51 SAMA analysis issue. Like that proposed contention, NIRS Contention 1.1.5 is inadmissible in its entirety because NIRS does not demonstrate, or even allege, that Duke's SAMA analyses fail to meet NRC license renewal requirements in Part 51 in any respect.

As discussed above, Duke prepared and submitted SAMA analyses with the license renewal application – consistent with applicable NRC regulations and regulatory guidance. *See* Section 4.21 of the McGuire and Catawba ERs and additional information in Attachment K of the McGuire report and Attachment H of the Catawba report. With respect to NIRS's concerns based on NUREG/CR-6427, the SAMA analyses included in the Environmental Reports address the significant substantive issues from that study, as discussed in connection with NIRS Contention 1.1.4(a).⁸⁸ NIRS does not acknowledge any of this discussion. NUREG/CR-6427 discusses the sensitivity of ice condenser plants to early containment failures. Both the McGuire and Catawba SAMA analyses address several containment failure modes, including early containment failures. *See* Table 5-1 in Attachments K and H. Duke's SAMA analyses also include a brief description of the previous PRAs and IPEs that have been completed, and a description of risk reduction measures previously implemented. *See* Table 2-1 in Attachments K and H. Table 5-1 also includes several potential containment performance alternatives.

NIRS contends that the SAMA analyses should consider an alternative to reliance solely on emergency diesel generators at McGuire and Catawba. As the basis for this assertion, petitioner cites in Contention 1.1.5(a) the "vulnerability" of McGuire and Catawba "as documented in NUREG/CR-6427," and the "preponderance of new factors (terrorism and

⁸⁸ *See, e.g.,* Chapter 2 of both the McGuire and the Catawba SAMA analyses (McGuire ER, at Attachment K; Catawba ER, at Attachment H).

climate change) that increase the probability of station blackout.” NIRS Contentions at 16. However, neither basis is adequate to support this proposed contention. NUREG/CR-6427 does not identify any new accident scenarios and does not otherwise undermine the existing McGuire and Catawba SAMA analyses. NIRS’s assertion that it is “vital” to consider the alternative of reliance solely on emergency diesel generators at McGuire and Catawba lacks any legal or regulatory basis. The “alternative” proposed by petitioner (providing a dedicated electrical line from the hydroelectric generating dams adjacent to each reactor site) is, in fact, not permitted by the NRC’s Station Blackout rule in 10 C.F.R. § 50.63. Thus, this proposal is not a credible alternative that should be considered in the SAMA analysis required by 10 C.F.R. § 51.53(c)(3)(ii)(L).⁸⁹

To the extent petitioner relies upon concerns about terrorism as the basis for requiring a revised SAMA analysis, as discussed above in connection with NIRS Contention 1.1.2, security issues are beyond the scope of a license renewal proceeding and cannot provide the requisite basis to support NIRS’s argument. Speculative concerns about climate change that allegedly may increase the probability of Station Blackout, and thus suggest the need for a revised SAMA analysis, are likewise outside the scope of this proceeding, and cannot provide a valid basis in support of this proposed contention, as discussed in connection with Contention 1.1.3.⁹⁰ NIRS Contention 1.1.5(a) does not raise any admissible issue under 10 C.F.R. Part 51.

⁸⁹ NIRS’s suggestion that the consideration of the stated “alternative” is facilitated by the ownership of the hydro generation units by a subsidiary of Duke Power, and the existence of switchyards adjacent to both reactor sites, is not relevant from a regulatory standpoint. A Station Blackout by definition assumes a loss of offsite power and therefore no credit is taken for the switchyard and transmission lines.

⁹⁰ As a possible challenge to Duke’s compliance with 10 C.F.R. Part 54 license renewal provisions, NIRS Contention 1.1.5 is also deficient. Petitioner has not alleged or shown any such non-compliances, and therefore has failed to raise any issues under Part 54 that could be considered in this proceeding.

NIRS Contention 1.1.5(b) argues that the “addition of more back-up power is warranted” because of the possibility of future MOX fuel use, which would supposedly “increase the consequences of a loss of containment accident.” NIRS Contentions at 17. As discussed elsewhere in this response, proposed contentions based in whole or in part on assertions concerning MOX fuel use are beyond the scope of this license renewal proceeding. To the extent required, safety and environmental issues associated with MOX fuel use will be evaluated in the context of an application actually seeking authority to use MOX fuel.

In sum, NIRS Contention 1.1.5 is beyond the scope of this license renewal proceeding and fails to meet the standards for an admissible contention in Section 2.714(b)(2)(i), (ii), and (iii). Neither sub-issue (a) nor sub-issue (b) provides an adequate basis to demonstrate a genuine dispute on a material issue of fact or law. NIRS Contention 1.1.5 must therefore be rejected in its entirety.

NIRS Contention 1.1.6

The McGuire/Catawba License Renewal Application Fails to Account for New Information with Regard to Spent Fuel Pool Fires

Response to Contention

In support of this proposed contention, NIRS provides, unedited, an affidavit of Dr. Gordon Thompson recently filed in a proceeding involving a license amendment to increase allowed spent fuel storage at the Millstone Nuclear Power Station, Unit 3. See NIRS Exhibit 1.1.6. Dr. Thompson and the intervenors in that matter argue that the licensing board should accept a new contention addressing the probability and consequences of a spent fuel pool drain-down event, such as might be precipitated by a deliberate crash of a “fuel laden aircraft” into a spent fuel pool by a terrorist. In the present case, NIRS contends that Dr. Thompson’s affidavit is new information and that the partial drain-down of the spent fuel pool leading to a fuel pool fire must be addressed in this renewal proceeding. NIRS observes that the scenario could be

caused by an act of “sabotage” or as a result of accelerating “climate change.” NIRS Contentions at 17. The proposed contention, by its very terms, specifically challenges the Commission’s generic finding in 10 C.F.R. § 51.23(a) that “spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations.”⁹¹ See NIRS Contentions at 18.

This proposed contention cannot be admitted because it represents a challenge to the NRC’s rules and because it fails to raise any matter properly within the scope of a license renewal proceeding. First, spent fuel storage issues are not within the set of environmental issues that can be addressed in a plant-specific license renewal review or hearing. The Commission has reaffirmed its “waste confidence” rule in 10 C.F.R. § 51.23(a). The rule states the Commission’s generic finding regarding the safety of onsite spent fuel storage beyond the license term. The Commission also expressly decided to address radiological and environmental effects of onsite spent fuel storage generically for license renewal.⁹² Waste storage environmental issues are a Category 1 issue. See 10 C.F.R. Part 51, Appendix B, Table B-1. Accordingly, the Commission’s rules provide that a license renewal applicant’s environmental report “need not discuss any aspect of the storage of spent fuel for the facility within the scope of [these] generic determination[s].” 10 C.F.R. § 51.53(c)(2). The proposed contention is essentially a challenge to the Commission’s rules and must be rejected. See *Oconee*, CLI-99-11,

⁹¹ At McGuire, spent fuel is currently stored at both an independent spent fuel storage facility (in dry casks) and the spent fuel pool. At Catawba, there presently is only a spent fuel pool.

⁹² See “Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed. Reg. 66,537-38 (Dec. 18, 1996).

49 NRC at 343-44.⁹³ NIRS has also not attempted to make the showing required by 10 C.F.R. § 2.758.

A proposed contention regarding spent fuel risks allegedly resulting from severe weather and aircraft crashes was specifically rejected by the Commission in the *Turkey Point* case.⁹⁴ The Commission addressed both the environmental aspects of spent fuel storage and the underlying safety question. With respect to the former, the Commission rejected the contention based on the status of spent fuel storage as a Category 1 issue. With respect to the latter, the Commission found that neither the aircraft claim nor the weather claim raised any aging issue within the scope of a Part 54 license renewal review. *Id.* at 29. Accordingly, issues related to the capacity and safety of the spent fuel pool are issues more appropriately addressed as a rulemaking matter, a current inspection and enforcement matter, or (as at Millstone) a licensing matter in the context of a specific license amendment application directly related to spent fuel storage.

NIRS Contention 1.1.6 also implicitly involves a challenge to the current licensing basis of the plants. In *Turkey Point*, the hurricanes and tornado winds and hurricane-induced flooding referred to in the proposed contention were at least within the design basis of the plant. For McGuire and Catawba, as with other nuclear plants in the United States, the licensing basis does not include a partial drain-down of the spent fuel pool.⁹⁵ Likewise, under 10

⁹³ As discussed above, allegedly “new” information on a Category 1 issue would need to be pursued with the Commission under the processes provided by 10 C.F.R. §§ 2.758 or 2.802.

⁹⁴ See *Turkey Point*, CLI-01-17, slip op. at 24-29.

⁹⁵ The design basis spent fuel pool accident is, for example, a fuel assembly drop. Dr. Thompson’s arguments related to spent fuel pool drain-down were previously made in the *Millstone* matter (minus only the postulated terrorist aircraft initiator) many months ago. Those proposed contentions were rejected as beyond the design basis and beyond

C.F.R. § 50.13, the plant security design basis does not include attacks by enemies of the United States such as suggested by Dr. Thompson. One of the Commission's fundamental principles of license renewal is that the current licensing basis is not subject to review in the license renewal context.⁹⁶ Arguments on the adequacy of the current licensing basis for spent fuel storage must be addressed using established NRC regulatory processes, such as 10 C.F.R. § 2.206, that are applicable to the current license term.⁹⁷

In sum, NIRS Contention 1.1.6 cannot be admitted. NIRS has failed to establish a genuine dispute on a material issue of law or fact. 10 C.F.R. § 2.714(b)(2)(iii). Likewise, NIRS has failed to raise an issue for which relief can be granted in this proceeding. 10 C.F.R. § 2.714(d)(2)(ii).

NIRS Contention 1.1.7

The McGuire/Catawba License Renewal Application Fails to Take Into Account New Information Regarding the Effects of Offsite Radiological Impacts

Response to Contention

In NIRS Contention 1.1.7, NIRS argues that the license renewal Environmental Reports must address “recent breakthroughs” in medicine related to the alleged health effects of “low doses” of radiation. NIRS references one report, apparently published by Dr. David Scheinberg and reported in the *New York Times* on November 16, 2001. NIRS argues that this constitutes “new and significant information” within the scope of 10 C.F.R. § 51.53(c)(3)(iv) that

the scope of the required environmental review. See *Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), LBP-00-2, 51 NRC 25, 43-46 (2000).

⁹⁶ See, e.g., 10 C.F.R. § 54.30; see also *Turkey Point*, CLI-01-17, slip op. at 7.

⁹⁷ The reference by NIRS to “climate change” in the context of spent fuel pool fires is never explained. No link is established between “climate change” and either drain-down events or license renewal.

must be included in the Environmental Reports. NIRS suggests that the expected operating releases of the nuclear plants must be reviewed in conjunction with the effects of other “projected impacts during the renewal period,” including such factors as ozone depletion, climate change, air emissions, toxic substance accumulation, and human population changes. NIRS Contentions at 18-19.

This proposed contention cannot be admitted because it fails to raise an issue within the scope of a license renewal application or proceeding. The contention involves a challenge to the NRC’s current regulations in 10 C.F.R. Part 51, to the generic determinations made in the NRC’s license renewal GEIS, and to the NRC’s regulations establishing the permissible releases from nuclear plants. NIRS has also not attempted to make the showing required by 10 C.F.R. § 2.758.

As discussed previously, the NRC divided its license renewal environmental review into generic and plant-specific components. Where, based upon the GEIS, the NRC drew a generic conclusion applicable to all nuclear plants, specific environmental issues were labeled as Category 1 issues that need not be evaluated on a site-specific basis.⁹⁸ Part 51, Appendix B, Table B-1 designates the impacts of low-level radiation as Category 1 issues. This includes radiation exposures to the public during any refurbishment; radiation exposures to the public during the license renewal term; and occupational radiation exposures during the license renewal term. Health impacts in all of these areas have been determined to be small. Based on the GEIS and the Category 1 designation, the information that NIRS asserts must be considered goes beyond the scope of information required in a license renewal environmental report.⁹⁹

⁹⁸ 10 C.F.R. § 51.53(c)(3)(i); *see generally Turkey Point*, CLI-01-17, slip op. at 10-11.

⁹⁹ *See Turkey Point*, LBP-01-6, 53 NRC at 162 (rejecting a contention on the cumulative impact of low-level radiation on the “aquatic and human environment”).

The NIRS proposed contention also does not address, engage, or even reflect an awareness of the GEIS review of radiation effects. In fact, the GEIS, in Section 3.8 (“Radiological Impacts”), provides a comprehensive summary of the NRC’s review of the issue of impacts from refurbishment, and Section 4.6 (“Radiological Impacts of Normal Operation”) extensively addresses impacts during the period of extended operation. With respect to the former, the NRC GEIS concludes that “[r]adiobiologists and epidemiologists generally agree that the collective dose to a population would have to be much larger than current doses from nuclear power plants before health effects would become a realistic concern.” NUREG-1437, Vol. 1, at 3-38. With respect to the latter, the GEIS concludes that “[t]he significance of radiation exposures to the public attributable to operation after license renewal will be small at all sites.” NUREG-1437, Vol. 1, at 4-95.

NIRS’s reference to Dr. Scheinberg’s study does not on its face provide a meaningful basis for a challenge to the conclusions of the GEIS, even if those conclusions were subject to challenge in this forum. The reference to findings regarding the impact of an atom of actinium-225 on an adjacent cancer cell says nothing regarding offsite health effects of low-level radiation and certainly does not undermine the work of radiobiologists and epidemiologists referenced in the GEIS. *See, e.g.*, NUREG-1437, Vol. 1, at 3-38 – 3-39. Beyond this, the argument in the contention that radiation impacts must be considered in conjunction with other “factors under acceleration today” is made without any basis whatsoever. To the extent NIRS argues that the GEIS must consider additional cumulative impacts, based on other risk factors, no basis at all is provided for the assertion.¹⁰⁰

¹⁰⁰ The GEIS specifically addresses the estimated cancer risk. *Id.* NIRS’s contention that some additional health risks need to be considered is made without foundation.

NIRS's reference to the requirement in 10 C.F.R. 51.53(c)(3)(iv), simply asserting that there is new information, does not save the proposed contention. Radiological impacts have been designated by rule as generic, Category 1 issues. Absent action by the Commission to suspend the Category 1 finding, an alleged generic health effect previously evaluated, cannot be reopened in this site-specific proceeding.¹⁰¹

Finally, NIRS's proposed contention alleging health effects is also, at least implicitly, a challenge to the NRC's generic requirements establishing operating release limits. Radiological release standards are established in 10 C.F.R. Part 20, 40 C.F.R. Part 190, and Appendix I to 10 C.F.R. Part 50. A license renewal proceeding is not an opportunity to litigate these generic standards.

In sum, NIRS Contention 1.1.7 must be dismissed. NIRS has failed to established a genuine dispute on a material issue of law or fact. 10 C.F.R. § 2.714(b)(2)(iii). Likewise, NIRS has failed to raise an issue for which relief can be granted in this proceeding. 10 C.F.R. § 2.714(d)(2)(ii).

NIRS Contention 1.1.8

The McGuire/Catawba License Renewal Application Fails to Take Into Account All of the Above Factors

Response to Contention

NIRS Contention 1.1.8 appears to be a "catch-all" contention, restating many of the issues and themes addressed above — such as terrorist attacks, use of MOX fuel, climate change, fuel pool fires, Station Blackout, and alleged radiation impacts. NIRS Contentions at 19-20. For the reasons previously discussed, these matters are not properly within the scope of a license renewal review. Separately, the proposed contention must be dismissed as vague and

¹⁰¹ See *Turkey Point*, CLI-01-17, slip op. at 17.

lacking in specific basis. The proposed contention does not include any specific, decipherable statement of the issue of law or fact to be raised, and therefore fails to meet the applicable standards of 10 C.F.R. 2.714(b)(2).

In its most favorable light, the contention appears to challenge the ability of the Commission to have an adequate basis on which to make the required finding of 10 C.F.R. § 51.103(a)(5).¹⁰² However, for all the reasons discussed above, NIRS's more specific proposed contentions on the same matters do not provide a valid basis for further environmental review in the plant-specific license renewal context. NIRS's assertion that 10 C.F.R. § 54.31(d) "offers the specter of eternal operation" simply misreads the rule. There is no basis in the rule or elsewhere to conclude that appropriate environmental reviews will not be conducted prior to issuing any renewed license. For each of these reasons, the proposed contention must be rejected.

NIRS Contention 1.2.1

The McGuire and Catawba Environmental Reports Fail to Consider Ozone Depletion

Response to Contention

In this proposed contention, NIRS asserts that the license renewal Environmental Reports are deficient because Duke does not address "ozone depletion." The contention is, apparently, that ozone depletion affects plants, animals, and microbes — particularly endangered and threatened species — that are also impacted by discharges of "heat, toxic substances and ionizing radiation from Duke's reactors." Ozone depletion, therefore, at least according to the contention, is "new and significant information" that must be addressed in the Environmental Reports under 10 C.F.R. § 51.53(c)(3)(iv). NIRS Contentions at 20.

¹⁰²

The finding required by Section 51.103(a)(5) reflects that issuance of a renewed license does not assure that a plant will operate in the renewed license term. Continued operation is ultimately a matter for "energy planning decisionmakers," not the NRC.

This proposed contention first fails because it is vague and lacks specific basis. The contention offers the proposition that “ozone depletion is no secret.” However, ozone depletion is never defined nor is it ever linked in any way to operation of McGuire and Catawba or to license renewal. In addition, no basis is offered for the propositions that: (1) ozone depletion impacts plants, animals, and microbes; (2) these plants, animals, and microbes are also impacted by discharges from McGuire and Catawba; or (3) there is some cumulative effect from ozone depletion and discharges from the nuclear plants. The reference to the Environmental Protection Agency (“EPA”) web-based fact sheet on ozone does not remedy this deficiency.¹⁰³ The contention as proposed is inadequate to meet 10 C.F.R. § 2.714(b)(2).

In NIRS’s initial request for hearing/petition to intervene as filed in this matter,¹⁰⁴ NIRS generally referred to its interest in pursuing the issue of chlorofluorocarbon (“CFC”) releases. And, as discussed in the EPA fact page, CFCs have been linked to changes to the atmospheric ozone layer. However, no nexus is drawn in the proposed contention between CFC releases and any specific activity at McGuire or Catawba. Suffice it to say, CFCs utilized at the stations are used in compliance with federal regulations. Any CFC compliance matter would not be an NRC license renewal issue, but one of ongoing monitoring and oversight by the relevant government agencies.¹⁰⁵

¹⁰³ A review of the web page (http://www.epa.gov/docs/ozone/science/sc_fact.html) reveals only a general discussion of ozone in the Earth’s atmosphere, the role it plays in absorption of UVB, the role of chlorofluorocarbons in ozone depletion, and governmental responses to the issue.

¹⁰⁴ NIRS Request for Hearing and Petition to Intervene (Sept. 11, 2001) at 4.

¹⁰⁵ For example, use of ozone-depleting substances is regulated under Section 608 of the Clean Air Act. *See, e.g.*, 40 C.F.R. Part 82.

The impacts of operation of a nuclear plant on the surrounding aquatic ecology, terrestrial resources, and threatened and endangered species are all addressed in the NRC's license renewal GEIS and in Duke's license renewal Environmental Reports. For McGuire and Catawba, the environmental impacts of these Category 1 issues addressed in the GEIS and Category 2 issues addressed in the ERs have been determined to be small. The proposed contention fails to address — much less provide any basis for — an argument that these small impacts must be added to some unspecified impacts from a global phenomenon such as “ozone depletion.”

In sum, NIRS Contention 1.2.1 fails for lack of specificity and basis. NIRS has not provided a specific contention with a basis as required by 10 C.F.R. §§ 2.714(b)(2)(i) and (ii), and has not demonstrated that a genuine dispute exists with respect to a material issue of law or fact. 10 C.F.R. § 2.714(b)(2)(iii).

NIRS Contention 1.2.2

The McGuire and Catawba Environmental Reports do not Adequately Consider the Effects of Climate Change on Nearby Plants and Wildlife

Response to Contention

NIRS Contention 1.2.2 asserts that the Environmental Reports for Catawba and McGuire are deficient in that they fail to analyze sufficiently the impacts of climate change. NIRS Contentions at 20-21. In brief, this contention addresses speculative impacts of “climate change” on the region surrounding the plant. In particular, NIRS argues that, in connection with impending climate change, Duke should analyze the impacts of speculative temperature and precipitation changes upon species distribution and habitat factors, and the entrainment of fish, impingement of fish, and heat shock. *Id.* at 20-21. NIRS's supposition is that these impacts would somehow alter the license renewal-related environmental impacts described in the McGuire and Catawba ERs, and that this constitutes “new and significant information” that must

be addressed in the ERs under 10 C.F.R. § 51.53(c)(3)(iv). However, NIRS has not attempted to make a showing under 10 C.F.R. § 2.758.

This proposed contention is deficient for a number of reasons. First, it is vague and lacks the specific basis required by 10 C.F.R. § 2.714(b)(2)(i). NIRS does not provide a definition of, or any information concerning, “climate change,” except for the sole reference to one phrase in a DOE-EPRI report cited in the ERs.¹⁰⁶ Moreover, no basis is offered in support of the generalized assertion that climate change may affect species distribution, species habitat, fish entrainment, fish impingement, or heat shock. Additionally, NIRS does not in any way link this potential generic environmental effect to the operation of McGuire or Catawba during the renewal term, or provide any basis for the contention that the impacts of plant operation will be changed. Finally, the proposed contention does not satisfy Section 2.714(d)(2)(ii) because, even if proven, it “would be of no consequence in the proceeding because it would not entitle petitioner to relief.”

Regarding NIRS’s observation that the “evaluation of aquatic impacts” from the operation of McGuire lacks consideration of climate change, we note that Duke has analyzed the environmental impacts of license renewal upon the surrounding aquatic ecology,¹⁰⁷ and upon

¹⁰⁶ See McGuire ER at 8-32; Catawba ER at 8-29. NIRS cites this same phrase (found once in the portions of the DOE-EPRI Report cited in the Environmental Reports) to support its Contention 1.1.3.

¹⁰⁷ NRC requirements to evaluate the environmental impacts of entrainment and impingement of aquatic organisms, and heat shock, are found in Section 51.53(c)(3)(ii)(B). Duke has provided the information required by this regulation in both of the ERs. See McGuire ER Section 4.2 (at 4-12 - 4-13) and Catawba ER Section 4.2 (at 4-18) re entrainment of fish; McGuire ER Section 4.3 (at 4-14 – 4-16) and Catawba ER Section 4.3 (at 4-19) re impingement of fish; and McGuire ER Section 4.4 (at 4-17 and 4-18) and Catawba ER Section 4.4 (at 4-20) re heat shock. The McGuire ER classifies the impacts of impingement and entrainment of aquatic organisms, and the impacts of heat shock, as small. Since Catawba does not use once-through cooling or cooling pond heat dissipation systems, these issues do not apply to Catawba.

threatened or endangered species,¹⁰⁸ to the extent required by NRC license renewal regulations in 10 C.F.R. Part 51. These impacts have been determined to be small or inapplicable to McGuire and Catawba. Duke has met existing Commission requirements in these areas. Consideration of “climate change” in connection with these environmental analyses is not required.

Duke has not conducted the additional areas of environmental analysis proposed in NIRS Contention 1.2.2 because there is no requirement that license renewal applicants do so. Contrary to NIRS’s suggestion, mere speculation concerning the potential future impacts of climate change does not rise to the level of current “new and significant information” that must be addressed in the Environmental Reports under 10 C.F.R. § 51.53(c)(3)(iv). To the extent circumstances change in the future, related to climate change or otherwise, either during the current license term or in the period of extended operation, those circumstances would be addressed through normal, ongoing regulatory processes. Thus, the concern raised by this contention is not admissible in this proceeding.

¹⁰⁸

The NRC requirement to evaluate the environmental impact of license renewal upon threatened or endangered species is found in Section 51.53(c)(3)(ii)(E). Duke has provided the information required by this provision in both of the Environmental Reports. *See* McGuire ER Section 4.10 (at 4-26 - 4-27) and Catawba ER Section 4.10 (at 4-32 - 4-33). Duke found that no major refurbishment activities will be required for license renewal at either McGuire or Catawba, and that there will accordingly be no impacts to threatened or endangered species from refurbishment. Further, surveys found no federally listed threatened or endangered species at either reactor site. Thus, there will be no impact from the continued operation of McGuire or Catawba to such species.

NIRS Contention 1.2.3

The McGuire and Catawba Environmental Reports Do not Consider the Effects of License Renewal upon the Georgia Aster or Schweinitz's Sunflower

Response to Contention

In NIRS Contention 1.2.3, NIRS argues that Duke's Environmental Reports should consider the effects of license renewal upon flower species Schweinitz's Sunflower and the Georgia Aster, and contends that a "complete analysis" in this regard should consider "the synergisms that will result from the combination of reactor releases and discharges, ozone depletion and stresses associated with Climate Change." NIRS Contentions at 21. NIRS bases this contention on a letter from the U.S. Fish and Wildlife Service ("FWS") to the NRC on this subject.¹⁰⁹ See NIRS Exhibit 1.2.3.

This proposed contention reflects the petitioner's unfamiliarity with the license renewal application that it is challenging. NIRS Contention 1.2.3 is premised on the misconception that Duke failed to include the Georgia Aster and Schweinitz's Sunflower in the relevant environmental analysis conducted in connection with the renewal of the McGuire and Catawba operating licenses. In fact, consistent with Part 51 license renewal requirements in Section 51.53(c)(3)(ii)(E),¹¹⁰ Duke did assess the impact of McGuire and Catawba license

¹⁰⁹ The letter from the U.S. Fish and Wildlife Service to the NRC (NIRS Exhibit 1.2.3) that forms the basis for this contention refers only to the McGuire plant. However, Duke has assumed for the purposes of this response that NIRS intended to challenge the sufficiency of the 10 C.F.R. § 51.53(c)(3)(ii)(E) study for Catawba as well as for McGuire.

¹¹⁰ 10 C.F.R. § 51.53(c)(3)(ii)(E) requires license renewal applicants to "assess the impact of refurbishment and other license-renewal-related construction activities on important plant and animal habitats. Additionally, the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with the Endangered Species Act."

renewal upon threatened or endangered species.¹¹¹ In doing so, Duke satisfied its regulatory obligation to address this Category 2 environmental issue in connection with its license renewal application. NIRS has not shown otherwise. Moreover, contrary to NIRS's suggestion, the biological assessments on threatened and endangered species provided as part of Duke's license renewal Environmental Reports did, in fact, evaluate the impact of license renewal upon the Schweinitz's Sunflower and the Georgia Aster.

For McGuire, the Section 51.53(c)(3)(ii)(E) biological assessment consisted of field surveys of the project area by a professional consultant in June 2000 and in the Autumn of 2000. The "project area" in this case consisted of the McGuire Exclusion Area and the McGuire transmission lines (totalling approximately 2.8 miles in length). The study specifically discusses federally listed species known from Mecklenburg and Lincoln Counties. See McGuire ER, Attachment D at 10-11. A list of threatened and endangered species known to occur in or near the project area was obtained prior to initiation of the field survey from the FWS; that list included Schweinitz's Sunflower and the Georgia Aster. Duke's survey subsequently found no federally listed threatened and/or endangered species of plants or animals, and, further, found no critical habitat for such species.¹¹² Overall, the McGuire ER concludes on this issue that: "A

¹¹¹ For McGuire, the information provided in response to Section 51.53(c)(3)(ii)(E) is discussed in Section 4.10 of the McGuire ER (at 4-26 – 4-27), and the 2001 biological assessment for endangered and threatened species is included as Attachment D to the McGuire ER. For Catawba, the information provided in response to Section 51.53(c)(3)(ii)(E) is discussed in Section 4.10 of the Catawba ER (at 4-32 – 4-33), and the 2001 biological assessment for endangered and threatened species is included as Attachment A to the Catawba ER.

¹¹² The McGuire assessment noted that the Schweinitz's Sunflower is listed as endangered, that it is also found on Iredell and Mecklenberg soils on roadside and in barren glades, and that there is a population of the Sunflower a few miles south of McGuire on a transmission line right-of-way. The study also noted that *no habitat or plants of this species were seen within the McGuire project area*. Regarding the Georgia Aster, the McGuire study noted that this flower is a "candidate" species for listing by the FWS, that

survey of the plant site and the associated transmission line corridors found that no federal listed threatened and endangered species of plants or animals were found on the site. Therefore, there will be no impact from the continued operation of McGuire to threatened and endangered species.” McGuire ER, at 4-27.

For Catawba, the Section 51.53(c)(3)(ii)(E) assessment similarly consisted of field surveys of the project area (the Catawba Exclusion Area and 42.4 miles of transmission line rights-of-way associated with Catawba), in June 2000 and the Autumn of 2000. A list of species known to occur in or near the project area was obtained from FWS prior to initiation of the field survey. Again, this list included Schweinitz’s Sunflower and the Georgia Aster. The Catawba survey subsequently found that there were no federally listed threatened and endangered species of plants or animals present. Further, this survey found no critical habitat for such species. The Catawba ER, Attachment A, at 10-11, specifically discusses federally listed species known from York and Cherokee Counties.¹¹³ Overall, the Catawba ER concludes

the flower is known from the Piedmont of North Carolina and South Carolina on Iredell, Mecklenburg and other basic and circumneutral soils, and that it is found in openings and in disturbed areas. The assessment stated that *although marginal habitat for the species exists within the McGuire project area, no plants of this species were seen.* See McGuire ER, Attachment D, at 10-11.

¹¹³ The Catawba assessment noted that the Schweinitz’s Sunflower is listed as endangered. It stated that this species is found in glade-like woods or in nonforested areas over magnesium- and calcium-rich soils such as the Iredell type. No Iredell soils are found at the Catawba site itself within the Exclusion Area. However, there are several populations of the Sunflower 3.0 miles (4.8 km) south of the Catawba site. An inventory of transmission lines near known populations of the plant revealed that no Schweinitz’s Sunflowers were growing within the transmission line rights-of-way. (Catawba ER, Attachment A, at 10). Regarding the Georgia Aster, Duke noted it is a “candidate” species for listing by the FWS, and that it is known from the Piedmont of South Carolina on Iredell and other basic and circumneutral soils in openings and in disturbed areas. In York County, however, it occurs in the western portion of the county on more acidic soils associated with the Kings Mountain geological belt. Although several populations of the Aster are found north of the Allison Creek Tap to Ripp Switching transmission in

that: “A survey of the plant site and the associated transmission line corridors found that no federal listed threatened and endangered species of plants or animals were found on the site. Therefore, there will be no impact from the continued operation of Catawba to threatened and endangered species.” Catawba ER at 4-33.

The letter from the U. S. Fish and Wildlife Service to the NRC on this subject regarding McGuire (*see* NIRS Exhibit 1.2.3) does not provide any basis for a challenge to the adequacy of Duke’s endangered species analysis. Nor does it contain “new and significant information” within the meaning of Section 51.53(c)(3)(iv). In response to a routine inquiry from the NRC, FWS provided “comments relative to endangered and threatened species and the subject project,” as required by federal statutes. Significantly, the FWS letter to the NRC provides that FWS does “not have records of any listed species from the footprint of the project as depicted on [the NRC’s] map.” FWS further comments: “We do have records of Schweinitz’s sunflower . . . and Georgia aster Both of these plants occur in areas that are likely to be affected, directly and indirectly, by this project.” NIRS Exhibit 1.2.3 at 1. FWS does not state that either species is necessarily present in the project footprint area; that they would be affected by license renewal; or that Duke’s surveys were inadequate or insensitive to these two varieties. FWS apparently wishes to call to the attention of the NRC (and the applicant) the possible occurrence of these plant species.

The FWS letter cited by petitioner — on its face — provides no basis for asserting that Duke’s Environmental Reports (and the underlying analyses) are incomplete,

Cherokee County, no plants of this species were found along the actual rights-of-way or within the Catawba Exclusion Area.

inaccurate or defective in any way.¹¹⁴ Nor does this letter support NIRS's suggestion that Duke has failed to consider the Schweinitz's Sunflower and the Georgia Aster. Indeed, a review of the biological assessments provided as part of the ERs confirms that these assessments did consider whether or not these species were present. See the discussion above and footnotes 112 and 113.

In sum, in this proposed contention NIRS has failed to demonstrate the existence of a "genuine dispute" with the applicant on a "material issue of law or fact." NIRS Contention 1.2.3 does not meet any of the mandatory standards for contentions set forth in Section 2.714(b)(2)(i), (ii), or (iii) of the Commission's regulations, and must therefore be dismissed.

NIRS Contention 1.2.4

The McGuire and Catawba Environmental Reports do not Consider the Effects of Future MOX Fuel Use with Regard to License Renewal

Response to Contention

NIRS Contention 1.2.4 argues that because MOX fuel use would result in an increase in plutonium and actinides during the fuel cycle and in discharges from the reactor, and could also affect thermal discharges, the McGuire and Catawba ERs should analyze the use of MOX fuel in those reactors. NIRS Contentions at 21-22.

As explained in detail above with regard to NIRS Contention 1.1.1, the question of possible future MOX fuel use in the McGuire and Catawba reactors is entirely outside the scope of this license renewal proceeding. If and when Duke requests NRC license amendments to permit MOX fuel use in its reactors, such amendments will not be granted without a full NRC Staff and licensee review of all applicable regulatory issues. Authorization to use MOX fuel would be based on a conclusion by the NRC that MOX fuel use poses no threat to public health

¹¹⁴ See *Vermont Yankee*, ALAB-919, 30 NRC at 48 (licensing board must do more than uncritically accept a document offered, and must determine whether the document in fact says what is claimed and supports a contention).

and safety. Furthermore, no license amendments will be granted without an opportunity for hearing like that offered in the instant proceeding. For these reasons, and as provided with regard to NIRS Contention 1.1.1, the Licensing Board should deny this contention in its entirety as inadmissible.¹¹⁵

NIRS Contention 2.1.1

The McGuire/Catawba License Renewal Application Fails to Analyze the Aging Management of Stud Bolts

Response to Contention

In this proposed contention, NIRS asserts that the license renewal application is inadequate because “[n]o reference is made to the bolts that attach the closure head dome to the reactor vessel.” NIRS contends that this “most heavily stressed part of the reactor vessel will be increasingly subject to failure with continued operation” and that these stud bolts are “exposed to metal fatigue” and “stress corrosion cracking.” Accordingly, NIRS sees the alleged “failure” to address stud bolts in the application as — given the “essential role of stud bolts” — a significant deficiency in the application. NIRS Contentions at 22-25. However, this proposed contention cannot be admitted because it lacks a legitimate basis. The core assumption is that stud bolts are not addressed in Duke’s application (citing, on pages 22-23, numerous references to the application where stud bolts supposedly are not addressed). However, NIRS has simply misread the application and failed to engage the information that is presented.

In preparing the license renewal application, Duke first identified systems, structures, and components within the scope of the license renewal rule (10 C.F.R. § 54.4) and subject to an aging management review (10 C.F.R. § 54.21(a)(1)). The results of this review are

¹¹⁵ The proposed contention is also, in any event, inadmissible for failure to meet the specificity and basis requirements of 10 C.F.R. § 2.714(b)(2).

presented in the tables in Chapter 3 of the license renewal application, specifically Columns 1, 2 and 3. The second step of the process required by the rule involved identifying the aging effects for the components subject to an aging management review. Aging effects manifest themselves when component materials are exposed to certain environmental conditions. The environments to which components are exposed are shown in Column 4 of the Chapter 3 tables and aging effects are documented in Column 5. The third step of the process was to identify programs to manage the aging effects (10 C.F.R. § 54.21(a)(3)). The programs are listed in Column 6 of the Chapter 3 table for each component type. The program attributes are captured in Appendix B of the application.

Following this format in the application, it can be found that reactor vessel closure studs (“stud bolts”) are part of the Reactor Coolant System, a Class 1 system under the American Society of Mechanical Engineers (“ASME”) Boiler and Pressure Vessel Code, Section III, Division 1 and Section XI, Division 1. For Class 1 systems and components, the ASME Code requirements for design, fabrication, construction, testing, and inspections apply. *See generally* 10 C.F.R. § 50.55a. Because they are part of a Class 1 system, the reactor vessel closure studs are subject to ASME Code requirements for Class 1 systems and components. Contrary to the proposed contention, reactor vessel closure stud bolts are listed in the license renewal application in Table 3.1-1, Column 1, on page 3.1-5, as in-scope and subject to aging management. The aging management programs that will manage the aging effects are the Inservice Inspection Plan¹¹⁶ and the Reactor Coolant System Operational Leakage Monitoring

¹¹⁶ ASME Section XI, Subsection IWB provides the requirements for Class 1 components, including bolted enclosures. Bolt studs are inspected visually and volumetrically at least on the frequency specified by the ASME Code.

Program. LRA Table 3.1-1, Column 6, at 3.1-5. *See also* LRA, Appendix B, Sections B.3.20 and B.3.25.

As emphasized in *Turkey Point*, CLI-01-17, slip op. at 22, a “contention should refer to those portions of the license application . . . that the petitioner disputes and indicate supporting reasons for each dispute.” Here, the proposed contention only makes references to alleged omissions, but actually fails to identify, address or otherwise engage the material in the application directly relevant to the proposed contention. The proposed contention is fundamentally flawed because the assertion that “no reference” is made in this application to stud bolts is simply wrong. The contention is without a valid foundation; the basis offered “fails to establish the validity of the contention.” *See Palo Verde*, CLI-91-12, 34 NRC at 155-56. Accordingly, the proposed contention must be rejected.

In the basis for the proposed contention, NIRS also argues that stud bolts are “exposed to metal fatigue, due to repetitive loading and unloading resulting from internal pressure changes . . .” NIRS Contentions at 25. However, again the petitioner ignores directly relevant information in the application. Fatigue of Class 1 components (which, again, include the reactor vessel closure studs) is managed by the Thermal Fatigue Management Program described in Section 4.3 of the license renewal application. No deficiency in that program is ever described in the proposed contention, much less with any meaningful basis.¹¹⁷

¹¹⁷ The Commission’s expectation that a petitioner demonstrate some familiarity with the application was recently reiterated. *See Dominion Nuclear Connecticut* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, ___ NRC ___, slip op. at 17-19 (Dec. 5, 2001). In the present case the depth of the petitioner’s review is betrayed by the discussions on page 23 of its submitted contentions. The petitioner assumes that the vessel operates at 1000 psi and about 550° F. Per standard tables, the boiling point of water at this pressure is 544° F. The petitioner has therefore incorrectly assumed that McGuire and Catawba are Boiling Water Reactors.

In sum, NIRS Contention 2.1.1 is based on a faulty premise that reactor vessel closure studs are not included in the aging management programs addressed in the license renewal application. NIRS, while providing a rambling discourse, fails to set forth a genuine issue of material fact focused upon the discussion in the license renewal application. No specific deficiency in the aging management program is identified, and no basis is provided for concluding that such a deficiency exists. The proposed contention fails to meet the standards of 10 C.F.R. § 2.714(b)(2) and must be denied.¹¹⁸

NIRS Contention 2.1.2

The McGuire/Catawba License Renewal Application Fails to Analyze the Aging Management of Reactor Lid Penetration Nozzles and Stud Bolts

Response to Contention

In this proposed contention, NIRS broadly challenges the materials condition at McGuire and Catawba and argues that Duke has not adequately “factored unforeseen aging” effects. More specifically, NIRS cites as a basis for the contention the “condition of the reactor lid penetration nozzles at two Oconee reactors.” NIRS Contentions at 25-27. However, despite this reference to Oconee experience, the proposed contention seems focused on other “major uncertainties” and “as yet unencountered failure mechanisms” that might lead to a major

¹¹⁸ It should be noted that the alleged risk of stud bolt failure has been raised repeatedly over the years with regard to the McGuire and Catawba facilities, to no avail. In *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-82-107A, 16 NRC 1791 (1982), the Licensing Board rejected such a contention (positing stud bolt failure, followed by an “unzippering” of the reactor head and the reactor head then penetrating containment), noting that nearly identical contentions had been unsuccessfully proffered in the licensing proceedings for both McGuire and Catawba. *Id.* at 1808 (citing *Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), LBP-73-7, 6 AEC 92, 106-08 (1973); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-75-34, 1 NRC 626, 642-46 (1975)). The Licensing Board, displaying its impatience with the resurrected issue, agreed with Duke “that yet another relitigation of this particular scenario is barred by the doctrines of *res judicata* and *collateral estoppel*.” *Id.*

accident. The proposed contention lacks any focus on any particular aging effect; no specific deficiency is cited in the McGuire and Catawba license renewal application or in the referenced aging management programs. The contention therefore must be rejected.

This proposed contention first must be rejected for lack of required specificity. NRC requirements as set forth in 10 C.F.R. § 2.714(b)(2) provide that a contention set forth “a specific statement of the issue of law or fact to be raised or controverted.” In promulgating its revised pleading requirement, the Commission emphasized that it requires the intervenor “to read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, [and] state the applicant’s position and the petitioner’s opposing view.” 54 Fed. Reg. at 33,170. If the petitioner’s position is that the application does not address a relevant issue, the petitioner must “explain why the application is deficient.” *Id.*; see also *Palo Verde*, CLI-91-12, 34 NRC at 155-56. It is unclear exactly what NIRS asserts to be inadequate in the McGuire and Catawba application and what NIRS would litigate. Indeed, the issue seems to be that Duke has not addressed things that are presently unknown or unforeseen — a proposition that by its very nature lacks specificity. A contention asking that Duke prove a negative, *i.e.*, that there are no “unforeseen aging effects,” cannot be admitted.

Furthermore, the proposed contention lacks basis. Under 10 C.F.R. § 2.714(b)(2) a proposed contention must include a “concise statement of the alleged facts or expert opinion” that support the contention, and “sufficient information . . . to show that a genuine dispute exists.” Here, NIRS provides only the most cursory references to the issues at Oconee related to “circumferential stress corrosion cracking through the entire thickness of the nozzle wall;” to postulated failure of “reactor vessel stud bolts;” and to questions about “weakening the weld metal in the reactor vessel.” The balance of the proposed contention is devoted to ruminations regarding “catastrophic” accidents. NIRS Contentions at 26. These non-specific references to

operating experience at Oconee and other hypothetical issues do not support a contention that the license renewal application is deficient because the application does not address some future unforeseen and unspecified aging effect. As recognized by the Commission in promulgating the license renewal rule, McGuire and Catawba will remain, throughout the terms of their licenses, subject to the existing NRC regulatory process, and the existing “regulatory process is adequate to ensure that the licensing bases of all currently operating plants provides and maintains [sic] an acceptable level of safety so that operation will not be inimical to public health and safety. . . .” 60 Fed. Reg. at 22,464. The existing regulatory processes include reviews of operating experience and emerging issues.

If NIRS Contention 2.1.2 is intended to be a contention directed at aging of the reactor vessel head penetration nozzles based on the Oconee experience (that is, of course, not how the contention is drafted), the contention still lacks sufficient specificity and basis to demonstrate a genuine issue. No connection is ever made to McGuire and Catawba. In fact, reactor vessel head penetrations and nozzles are part of the Reactor Coolant System and, as such, are specifically addressed in the license renewal application. *See* LRA, Table 3.1-1, Column 1, at 3.1-11—3.1-13. This equipment is in-scope with respect to the license renewal rule and is subject to an aging management review. (Loss of material and cracking are identified as aging effects that must be managed.) Two of the programs credited are the Alloy 600 Aging Management Review and Control Rod Drive Mechanism and Other Vessel Closure Penetration Inspection Program. *Id.* at Column 6. Moreover, the Oconee experience, specifically noted in NIRS Exhibits 2.1.1A and 2.1.1B, has been included in the “Operating Experience” portion of the description of the Control Rod Drive Mechanism Nozzle and Other Vessel Closure Penetrations Inspection Program. LRA at Appendix B, B.3.9-3. Nowhere in the proposed contention is any inadequacy in any of the referenced programs ever stated and nowhere is any

basis ever provided. A similar deficiency applies with respect to the off-hand references to “stud bolts” and “weakening the weld material in the reactor vessel.”

In sum, this proposed contention must be rejected. NIRS has failed to define an issue with adequate clarity and has failed to provide any valid basis for such a contention. 10 C.F.R. § 2.714(b)(2)(ii) and (iii). The proposed contention, broadly addressing the “unforeseen,” also fails because it raises a matter for which there could be no relief in this proceeding. 10 C.F.R. § 2.714(d)(2)(ii).

NIRS Contention 3.1

The McGuire/Catawba License Renewal Application Fails to Adequately Analyze Fire Barrier Penetration Seals and Utilizes Inadequate Qualification Tests

Response to Contention

NIRS Contention 3.1, related to the performance of fire barrier penetration seals, has four parts. To summarize, the four proposed issues are:

- (a) As-built and installed “Firewall 50” fire penetration seals have not been adequately qualified to demonstrate one-hour and/or three-hour fire endurance capability.
- (b) Fire barrier penetration seals that have been replaced using Dow Corning RTV silicone foam materials have not been adequately evaluated with respect to “how RTV silicone foam material performs after installation into penetrations previously using unanalyzed and unevaluated ‘Firewall 50’ materials.”
- (c) The three-hour fire test at Omega Point Laboratories utilized an inadequate hose stream test.
- (d) RTV silicone foam penetration sealant material is inadequate to meet NRC requirements because it is “combustible” and because “increased positive pressure on these combustible penetration seals will accelerate burn through times.”

NIRS Contentions at 27-32.

None of these four issues is an equipment aging issue within the scope of Part 54. All four issues relate to the performance of fire barrier penetration seal materials and their

ability, today, to meet applicable one-hour or three-hour 10 C.F.R. Part 50 regulatory standards. These issues relate to present compliance of fire barriers and penetrations based upon alleged testing and qualification inadequacies. As such, they are beyond the scope of a license renewal review and beyond the scope of this proceeding.

As discussed in the Commission's Delegation Order in this matter, "[t]he scope of this proceeding is limited to discrete safety and environmental issues." CLI-01-20, slip op. at 2. As discussed in *Turkey Point*, LBP-01-6, 53 NRC at 152, the set of safety issues is limited to "the detrimental effects of aging and a few other issues related to safety only during the period of extended operations." Similarly, in promulgating Part 54, the Commission was very clear that existing regulatory processes are sufficient to ensure that the licensing bases of operating plants provide an acceptable level of safety to protect the public health and safety. 60 Fed. Reg. at 22,464. Present-day issues and concerns related to compliance with NRC fire protection requirements fall within the scope of the NRC's current inspection and monitoring programs and are not within the scope of license renewal under Part 54. The petitioner's issues are better suited to a petition for action under 10 C.F.R. § 2.206.

A careful review of the proposed contention demonstrates that the issues, as drafted, are generic present-day equipment performance concerns (based upon alleged deficiencies in testing and analysis). They are not aging issues and are not linked to McGuire or Catawba or to the license renewal application.

Sub-issue (a) directly challenges the use and qualification of "Firewall 50." NIRS Contentions at 27-29. Clearly, NIRS is challenging the adequacy of the original qualification of the fire barrier penetration seals installed in the plant, rather than aging. However, in this case NIRS is simply shooting blind. "Firewall 50" is not currently used as a fire barrier penetration seal at either McGuire or Catawba.

Sub-issue (b) also questions the adequacy of the qualification of fire barrier seals that have been replaced using Dow Corning RTV silicone foam materials. NIRS Contentions at 29-30. This contention also does not define any specific aging concern. In referencing field installed replacements, this issue could relate only to two pipe trenches (one for each unit) at McGuire where "Firewall 50" was initially installed. Subsequently, silicone foam penetration seals were installed in the trench adjacent to the "Firewall 50." The silicone foam is the fire barrier penetration seal.¹¹⁹ The contention does not in any way address the aging of these foam materials.

In sub-issue (c), the focus is again quite obviously on the adequacy of qualification tests rather than any issues related to aging. NIRS Contentions at 30. The contention describes some experimental tests conducted in 2000 at Omega Point Laboratories. No relevance to license renewal is ever established. The qualification tests for the fire barrier penetration seals presently installed at McGuire and Catawba were conducted at Southwest Research Institute from 1978-1981. These tests are part of the current licensing basis and are not subject to review in this proceeding.

Finally, in sub-issue (d), the petitioners question the "combustibility" of the RTV silicone foam in what is clearly a present compliance matter. The issue also addresses the adequacy of Duke's current fire analysis to qualify and bound combustible fire penetration seals and the pressure of a beyond-design-basis explosion and fire as might result from a jet airliner crash. NIRS Contentions at 30-32. These again are issues beyond the scope of the present application.

¹¹⁹ "Firewall 50" was never installed at Catawba.

Fire barrier penetration seals have been evaluated for extended operation and are specifically addressed in Duke's license renewal application. Fire barrier penetration seals are included within the scope of equipment subject to an aging management review for license renewal in Table 3.5.2 (page 3.5-16) of the license renewal application. The Fire Protection Program is credited for managing the aging of fire barrier penetration seals. The Fire Protection Program is discussed in Section B.3.12 of Appendix B of the application. Fire barrier inspections are specifically credited and required as Selected Licensee Commitment ("SLC") 16.9.5. LRA, Appendix B, at B.3.12.-1.¹²⁰ A proposed contention cannot be admitted where the petitioner has failed to engage the application by stating a specific deficiency in the approach discussed in the application and by providing a basis for that assertion of a deficiency. However, perhaps in a gesture to the Part 54 requirements, the petitioner does include two off-hand references, with respect to sub-issue (a), to equipment aging concerns. NIRS Contentions at 28. NIRS contends that Duke has failed to analyze or provide the "life expectancy of Firewall 50 fire barrier penetration seals," and asserts that these penetrations are in an "unanalyzed aged-condition." However, no further specificity or basis is provided with respect to aging of this material and no inadequacy in Duke's aging management/inspection program is identified. Moreover, as discussed above, "Firewall 50" barriers are not currently used at McGuire and Catawba. In *Oconee*, CLI-99-11, 49 NRC at 338, the Commission emphasized that "[i]t is reasonable to expect a person or organization seeking to participate in a proceeding to study the portions of the application addressing the issues of concern and identify exactly what these concerns are." The generalized reference to aging in this case fails to meet this standard by any measure.

¹²⁰ SLCs are ultimately incorporated into the plant Updated Final Safety Analysis Report, making them subject to the change control process of 10 C.F.R. § 50.59.

In sum, this proposed contention, in all its subparts, must be rejected. It raises matters beyond the scope of Part 54 and otherwise lacks specificity and basis as required by 10 C.F.R. § 2.714(b)(2).

NIRS Contention 4.1

The License Renewal Application Inadequately Analyzes the Socioeconomic Impact of License Renewal, with Regard to Population Growth Around the Plant Sites and Emergency Planning

Response to Contention

NIRS Contention 4.1 comments on the increase in population density around the McGuire and Catawba plants during the past twenty years. NIRS Contentions at 32-33. To the extent that the text under this heading is intended to set forth any specific contention, rather than serving as background, the proposed contention must be rejected. Contention 4.1 does not challenge Duke's compliance with any license renewal requirements in 10 C.F.R. Part 54 or Part 51, does not allege that the license renewal application is otherwise deficient, and thus raises no matters within the scope of this proceeding. Moreover, the contention is utterly lacking in specificity and basis, and does not satisfy NRC requirements for contentions. Accordingly, Contention 4.1 — if meant to stand alone — must be dismissed.

(a) Sub-issue 4.1.1:

NIRS Contention 4.1.1 appears to be a challenge to the adequacy of the renewal application (in the areas of “security, aging, severe accident mitigation and plutonium fuel use”), based on Duke's alleged failure to consider the effect of a certain population segment (“new communities” around the McGuire and Catawba sites). NIRS Contentions at 33. Both a valid foundation and the necessary specificity are missing from this proposed contention. NIRS provides no details or citations to clarify what aspects of the license renewal application are supposedly “inadequate” for their supposed failure to consider any “new communities.”

Petitioner also neglects to specify the nature of such “inadequacies,” or how they result in deficiencies in the application’s compliance with 10 C.F.R. Part 54 or Part 51 provisions. For example, with regard to NIRS’s stated concerns about “aging,” the only subject area mentioned in Contention 4.1.1 that is within the scope of Part 54, NIRS provides no explanation as to how the application’s consideration of aging effects is purportedly compromised by an alleged failure to consider sufficiently the “new communities.”¹²¹ Because the proposed contention fails to include necessary information concerning how the application is deficient, and exactly what issues NIRS would litigate were the proposed contention admitted, NIRS Contention 4.1.1 does not satisfy 10 C.F.R. § 2.714(b)(2), and must be dismissed.

To the extent NIRS Contention 4.1.1 is intended as an attack on any of the existing “socioeconomic impact analyses” in the Environmental Reports (which is suggested by the title of Contention 4.1, but not supported by any statements in Contention 4.1.1), this proposed contention also fails to state an admissible contention. First, because NIRS provides no references to any particular analyses, it is unclear what NIRS contends is deficient. Absent such specificity or allegations of particular deficiencies, Contention 4.1.1 must be rejected.¹²² Moreover, NIRS has not shown that the ERs fail to comply with Part 51 requirements. Some “Socioeconomics” impacts associated with license renewal are classified as Category 1 generic impacts, and NIRS may not challenge in this renewal proceeding the impact of license renewal on any such socioeconomic impacts.¹²³ Other socioeconomic impacts associated with license

¹²¹ Nor does petitioner explain the significance, if any, of its assertion that Duke “has actively created” these new communities.

¹²² See 54 Fed. Reg. at 33,170; *Palo Verde*, CLI-91-12, 34 NRC at 155-56.

¹²³ 10 C.F.R. Part 51, Appendix B, Table B-1, “Socioeconomics,” classifies the impacts of license renewal upon tourism and recreation as Category 1 environmental issues, which

renewal are treated as Category 2, site-specific issues. While Duke's treatment of these Category 2 socioeconomic issues is subject to challenge in this proceeding, NIRS has not raised such a challenge in Contention 4.1.1¹²⁴ because, here again, NIRS does not indicate which (if any) Category 2 assessments involving socioeconomic factors it considers deficient, or why.¹²⁵ Furthermore, although petitioner notes its concerns relating to severe accident mitigation, it does not identify how socioeconomics are relevant to the SAMA analyses nor does it identify any particular deficiencies in the analyses in the ERs, submitted in accordance with requirements in Section 51.53(c)(3)(ii)(L).

Finally, petitioner's broad reference to concerns relating to security and possible future MOX fuel use do not support the admissibility of this proposed contention, because these subjects are outside the scope of this license renewal proceeding. *See* Duke Response to NIRS Contentions 1.1.1 and 1.1.2 above.

are not subject to further evaluation in any license renewal proceeding. *See Turkey Point*, LBP-01-6, 53 NRC at 153.

¹²⁴ On this point, Duke does not agree that any of the existing analyses in the environmental reports conducted pursuant to Part 51 requirements are deficient, or fail to meet applicable NRC requirements.

¹²⁵ Areas in which applicants must address socioeconomic impacts as a Category 2 issue include the "impact of the proposed action on housing availability, land-use, and public schools (impacts from refurbishment activities only) within the vicinity of the plant;" and the "impact of population increases attributable to the proposed project on the public water supply." *See* Section 51.53(c)(3)(ii)(I). Applicants must also assess the impact of highway traffic from the proposed project on the level of service of local highways, during refurbishment periods (if any) and during the renewal term, pursuant to Section 51.53(c)(3)(ii)(J). Additionally, applicants must assess whether "any historic or archaeological properties will be affected by" license renewal. Section 51.53(c)(3)(ii)(K). NIRS does not appear to challenge any of these areas of assessment in Duke's ERs.

(b) Sub-Issues 4.1.2 and 4.1.4

NIRS Contentions 4.1.2 and 4.1.4 both challenge the existing emergency plans for the McGuire and Catawba nuclear plants, and are an attempt to inject emergency planning issues into this license renewal proceeding. As the Commission has recently ruled in another license renewal case, contentions that raise emergency planning issues are inadmissible in NRC license renewal proceedings. "Emergency planning . . . is one of the safety issues that need not be re-examined within the context of license renewal."¹²⁶ The basis for this policy is that emergency planning for commercial nuclear reactors is already the focus of ongoing NRC regulatory processes, and thus is not included within the NRC's safety review at the renewal stage.¹²⁷ Thus, with respect to Contentions 4.1.2 and 4.1.4, NIRS has failed to raise issues properly within the scope of this license renewal proceeding, and these contentions must both be rejected.

(c) Sub-Issue 4.1.3

NIRS Contention 4.1.3 asserts that the potential socioeconomic impacts associated with the "closure" of Lake Norman and Lake Wylie for security reasons should be assessed as part of the McGuire/Catawba license renewal application. Here again, NIRS has not presented an admissible contention. As discussed elsewhere in this response, proposed contentions based upon security concerns are beyond the scope of this proceeding, and the

¹²⁶ *Turkey Point*, CLI-01-17, slip op. at 8-9; see also *Turkey Point*, LBP-01-6, 53 NRC at 159-60. On this point, the Turkey Point Licensing Board decision cited the discussion accompanying promulgation of the 1991 license renewal rule, where the NRC Staff observed: "Through its standards and required exercises, the Commission ensures that existing plans are adequate throughout the life of any plant even in the face of changing demographics and other site-related factors. Thus these drills, performance criteria and independent evaluations provide a process to ensure continued adequacy of emergency preparedness in light of changes in site characteristics that may occur during the term of the existing operating license, such as transportation systems and demographics." *Id.*, 53 NRC at 160, citing 56 Fed. Reg. at 64,966-67.

¹²⁷ *Turkey Point*, LBP-01-6, 53 NRC at 159-60.

contention should be rejected for this reason alone. *See* Duke Response to NIRS Contention 1.1.2 above. Nor is there any NRC requirement that a license renewal applicant prepare such an assessment as part of its obligations under 10 C.F.R. Part 51; thus, this proposed contention lacks a valid basis. Aside from these infirmities, NIRS Contention 4.1.3 also fails to meet the mandatory requirements for contentions set forth in 10 C.F.R. § 2.714(b)(2) – including the requirement for a “concise statement” of supporting facts or expert opinion, references to underlying sources and/or documents, and specific references to the license application to show the existence of a “genuine dispute” of a material issue of fact or law.

In sum, NIRS Contention 4.1, in all of its subparts, must be rejected. The proposed contention seeks to raise matters that are outside the scope of this license renewal proceeding, and otherwise lacks the specificity and basis required for contentions by 10 C.F.R. § 2.714(b)(2).

NIRS Contention 5.1

*The Nuclear Regulatory Commission's Regulatory Assumptions Regarding
Eventual Availability of a High-Level Waste Repository are Flawed*

Response to Contention

NIRS Contention 5.1 consists of quoted language from 10 C.F.R. § 51.23(a), along with allegations by the petitioner that there is “no basis in fact” for the generic findings reflected in Section 51.23 of the Commission’s regulations. Additionally, NIRS comments that the site selection, licensability, and operations schedule for the proposed Yucca Mountain radioactive waste repository are “far from assured,” and suggests that technical difficulties and/or terrorist concerns will likely cause the high-level waste (“HLW”) disposal program to “fail under the weight of one or more accidents or unaccounted expenses.” NIRS Contentions at 33-34. Petitioner provides no authority to support any of these statements. This contention is

quite clearly a direct challenge to the validity of NRC regulation 10 C.F.R. § 51.23(a), the “waste confidence” rule. As such, it is not admissible.

Because it alleges deficiencies in 10 C.F.R. § 51.23 (and not any aspect of the license renewal application), NIRS Contention 5.1 constitutes an improper challenge to an existing NRC regulation.¹²⁸ Such a challenge is precluded by 10 C.F.R. § 2.758(a), which provides that Commission rules and regulations are not subject to attack in NRC adjudicatory proceedings involving initial or renewal licensing. In addition, Commission case law holds that petitioners are precluded from litigating generic determinations established by NRC rulemakings.¹²⁹ Nor has petitioner offered any showing of “special circumstances” pursuant to Section 2.758(b).

NIRS further states that Section 51.23(a) “assumes that the waste generated by any reactor may well reside at the reactor site for up to 30 years after the reactor ceases operation,” and that this assumption “should be factored into any analysis of a terrorist strike to the site.” NIRS Contentions at 34. However, this raises a plant security issue that is beyond the scope of a license renewal review.

NIRS Contention 5.1 is also inadmissible because it does not contest any aspect of Duke’s aging management review for McGuire or Catawba, or Duke’s evaluation of the systems,

¹²⁸ In this regard, note petitioner’s explicit assertion that “NRC should provide a basis for their assumptions [in 10 C.F.R. § 51.23] and consider a revision to this section of the regulations.” NIRS Contentions at 34.

¹²⁹ “[A] petitioner in an individual adjudication cannot challenge generic decisions made by the Commission in rulemakings.” *North Atlantic Energy Service Corporation* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 217 n.8 (1999). See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 29-30 (1993); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-729, 17 NRC 814, 889-90 (1983), *rev’d in part on other grounds*, CLI-84-11, 20 NRC 1 (1984). See also *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998).

structures and components subject to time-aging analysis. Thus, the proposed contention does not identify any issue encompassed by the NRC's Part 54 safety review for license renewal.¹³⁰ Similarly, with respect to Duke's compliance with 10 C.F.R. Part 51 provisions, we note that all issues relating to the uranium fuel cycle and radioactive waste management are classified as Category 1 (generic) issues in the GEIS. Thus, applicants for renewed operating licenses are not required to furnish environmental information regarding the on-site storage of spent nuclear fuel ("SNF") or high-level radioactive waste disposal, low-level radioactive waste storage and disposal, or mixed waste storage and disposal. *See* 10 C.F.R. §§ 51.53(c)(2), 51.53(c)(3)(i), 51.95(c)(2); Part 51, Appendix B, Table B-1; *see also Oconee*, CLI-99-11, 49 NRC at 343-44.¹³¹ Because Part 51 and the GEIS cover these environmental issues generically, these issues are not subject to site-specific review, and are not subject to litigation in this proceeding.¹³² Nor may petitioner raise for consideration any issues relating to the future of the Yucca Mountain proposed radioactive waste repository site, since those issues are clearly beyond the scope of this license renewal proceeding.

For each of the reasons discussed above, NIRS Contention 5.1 must be dismissed.

¹³⁰ *See Turkey Point*, CLI-01-17, slip op. at 17.

¹³¹ The GEIS provides the background analysis and justification for the generic finding. NUREG-1437, vol. 1 at 6-36 to 6-86. For example, the GEIS finds "ample basis to conclude that continued storage of existing spent fuel and storage of spent fuel generated during the license renewal period can be accomplished safely and without significant environmental impacts." *Id.* at 6-85.

¹³² *See Turkey Point*, CLI-01-17, slip op. at 27. As the Commission pointed out in its decision, the "waste confidence rule" in 10 C.F.R. § 51.23(a) applies only to the storage of spent fuel after a reactor ceases operation. It is Part 51 and its underlying GEIS that precludes consideration of spent fuel storage issues during the reactor's operating life. *Id.* at 27 n.14.

B. BREDL CONTENTIONS

BREDL Contention 1

Offsite Radiological Impacts Must be Analyzed as a Category 2 Issue in the McGuire and Catawba Environmental Reports

Response to Contention

BREDL Contention 1, like NIRS Contention 1.1.7, is a direct challenge to the Commission's regulations and the GEIS on license renewal. As reflected in BREDL's specific statement of the issue of law or fact to be litigated, the Commission's regulations in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, designate radiation exposures to the public during refurbishment and radiation exposures to the public during the license renewal term as Category 1 environmental issues. BREDL, however, contends that these offsite impacts must be analyzed on a plant-specific basis as Category 2 issues. BREDL would have the analysis include not only the risks of cancer from radiation, but the risk of potential birth defects, infant mortality, infant cancer incidence, and neurological effects as well. BREDL Contentions at 3.

As discussed above in connection with NIRS Contention 1.1.7, this proposed contention is specifically barred by the Commission's regulations and precedent. Category 1 environmental issues do not need to be addressed in a specific license renewal application. 10 C.F.R. § 51.53(c)(3)(i). A contention very similar to BREDL's current contention was proposed in *Turkey Point* and specifically rejected by the licensing board in that case. *Turkey Point*, LBP-01-6, 53 NRC at 162.

In its Part 51 proposed rulemaking to address license renewal, the Commission clearly intended to resolve environmental issues generically to eliminate any need to address those issues in individual license renewal proceedings. The Commission stated:

Those impacts that cannot be evaluated generically will have to be evaluated for each plant before its license is renewed. However, the

environmental impacts that can be generically evaluated will not have to be evaluated for each plant.

“Proposed Rule, Environmental Review for Renewal of Operating Licenses,” 56 Fed. Reg. 47,016 (Sept. 17, 1991). Accordingly, the GEIS fully evaluated the generic issue of radiological impacts during refurbishment and the period of extended operation. The NRC GEIS discussed the fact that health impacts on humans are the focus of NRC regulations limiting radiological doses. *See* NUREG-1437, Vol. 1, at 3-27 and 4-84.¹³³ Given the limited doses, the NRC concluded that “[r]adiobiologists and epidemiologists generally agree that the collective dose to a population would have to be much larger than current doses from nuclear power plants before health effects would become a realistic concern.” *Id.* at 3-38 (emphasis added). Although the GEIS goes on to address the low cancer risks, the conclusion regarding “health effects” is not in any way limited. Notwithstanding the “studies” offered by BREDL, these generic conclusions are not appropriately re-visited in this proceeding.

BREDL claims that the reports and studies of Dr. Joseph Mangano, Jay Gould, Ernest Sternglass, and others, including a study from the area near Chernobyl, constitute the “emergence of new information since the Commission [Part 51] rulemaking and the GEIS,” justifying litigation in this proceeding. BREDL Contentions at 3-13. However, all of the information presented is generic; none relates specifically to McGuire or Catawba. The issue remains a challenge to the Commission’s rules (including both Part 51 and the regulations defining permissible low-level radiological releases). Such matters — even if based on allegedly “new” information — must be pursued through waiver or rulemaking. *See* 10 C.F.R. §§ 2.758, 2.802. As emphasized by the Commission in *Turkey Point*, absent Commission action, the scope

¹³³ These conclusions are reflected in NRC license renewal regulations at 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, “Uranium Fuel Cycle and Waste Management.”

of review as defined by the present rules determines the scope of admissible contentions in a license renewal hearing. *Turkey Point*, CLI-01-17, slip op. at 9, 12. The generic information offered by BREDL falls outside that scope.

In sum, this BREDL Contention 1 must be rejected as beyond the scope of this proceeding and as an impermissible challenge to Commission regulations.

BREDL Contention 2

The McGuire/Catawba License Renewal Application Fails to Provide a Human Reliability Assessment that Analyzes the Impacts of Workforce Aging, Critical Skills Retention and Availability, the Impacts of Advanced Technology on Human Reliability, and the Ability of the Future Workforce to Adequately Implement Aging Programs, Prevent Severe Accidents and Economic Accidents, and Mitigate the Effects of Accidents

Response to Contention

BREDL Contention 2 asserts that Duke's license renewal application is deficient because it fails to include a Human Reliability Assessment ("HRA") analyzing the impacts of workforce aging, critical skills retention and availability, advanced technology on human reliability, and a future workforce's ability to implement aging programs and react effectively to accidents. BREDL Contentions at 14. This proposed contention must be denied as inadmissible, since it is outside the scope of license renewal, impermissibly challenges the current licensing bases of McGuire and Catawba, and ignores that ongoing operational issues are addressed by normal ongoing regulatory processes.

As stated above, the Commission has directed that the scope of this license renewal proceeding be "limited to discrete safety and environmental issues" (emphasis added). As such, it "encompasses a review of the plant structures and components that will require an aging management review for the period of extended operation and the plant's systems, structures and components that are subject to an evaluation of time-limited aging analyses." CLI-01-20, slip op. at 2 (emphasis added). Nowhere in its regulations does the Commission

require, or even intimate, that a "Human Reliability Assessment" be included in the license renewal application and, accordingly, such an assessment is not a matter to be addressed in this proceeding.¹³⁴ Thus, BREDL Contention 2 should be deemed inadmissible by this Board, pursuant to 10 C.F.R. § 2.714(b)(2)(iii), for failure to demonstrate "that a genuine dispute exists with the applicant on a material issue of law or fact" and pursuant to 10 C.F.R. § 2.714(d)(2)(ii) because it raises a matter for which there could be no relief in this proceeding.

BREDL cites the license renewal regulations of 10 C.F.R. §§ 54.4, 54.21(a) and (c), in an effort to prove that an HRA is required. BREDL Contentions at 14-17. However, BREDL does not point to any language in those provisions describing such a requirement, and of course none exists. In fact, the Commission deliberately chose to exclude issues of human reliability and performance from the scope of license renewal, as they are part of all plants' current licensing bases. In its Statement of Considerations to the 1995 final rule on license renewal, the Commission explained that it "does not contend that all reactors are in compliance with their respective CLBs on a continuous basis. Rather, . . . the regulatory process provides reasonable assurance that there is compliance with the CLB. The NRC conducts its inspection and enforcement activities under the presumption that non-compliances will occur." 60 Fed. Reg. at 22,473-74.

Similarly, the Commission noted:

"the regulatory process continuously evaluates the safety status of licensed plants and modifies licensing bases as necessary to ensure . . . public health and safety. . . . [T]he Commission's inspection program obtains sufficient information on licensee performance, through direct observation and verification of licensee activities, to determine whether the facility is being operated safely and whether the licensee management control program is effective . . . Thus,

¹³⁴ Indeed, nowhere does BREDL even show where such an assessment is defined or required anywhere in the NRC's regulations.

the Commission continuously analyzes conditions, acts, and practices that could affect safe operation of plants and takes appropriate action.”

Id. at 22,485 (emphasis added).¹³⁵ See also *Turkey Point*, CLI-01-17, slip op. at 8 (citing 60 Fed. Reg. 22,473) (“[T]he regulatory process commonly is ‘the means by which the Commission continually assesses the adequacy of and compliance with’ the current licensing basis”). Accordingly, ongoing aspects of reactor operation such as human performance, training and qualifications, and “human reliability” are outside the scope of the license renewal process, because they are relevant to all operating reactors at all times, and are not the focus of special attention during license renewal.

In its 1995 Statement of Considerations clarifying the scope of matters under review in license renewal, the Commission wrote:

“[T]he portion of the CLB that can be impacted by the detrimental effects of aging is limited to the design-bases aspects of the CLB. All other aspects of the CLB, *e.g.*, quality assurance, physical protection (security), and radiation protection requirements, are not subject to physical aging processes that may cause noncompliance with those aspects of the CLB.”

60 Fed. Reg. at 22,475. The Commission’s limited definition of aging-related issues subject to the license renewal process directly contradicts that suggested by BREDL in this contention, where Petitioner’s reasons for demanding an HRA include the need to “prevent or mitigate off-site radiation exposures” (which are themselves a Category 1 environmental review issue) and

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The 1995 final rule revised in part the Commission’s previous license renewal rule, much of which remains valid. See “Final Rule, Nuclear Power Plant License Renewal,” 56 Fed. Reg. 64,943 (Dec. 13, 1991). In issuing that earlier rule, the Commission stated that, with regard to plant operators, the requirements contained in 10 C.F.R. Part 55, governing operator licensing, “as well as normal NRC review of plant operations, are adequate to ensure that operators are aware of any license renewal development that may affect their duties.” *Id.* at 64,967. BREDL’s citation of, *inter alia*, Part 55 in support of its claim that an HRA is required must fail for this reason as well. See BREDL Contentions at 16.

the fact that “fire brigades and environmental technicians . . . must follow rigorous quality assurance programs.” BREDL Contentions at 16-17. As the Commission stated in its most recent ruling on license renewal, “Issues . . . which already are the focus of ongoing regulatory processes [] do not come within the NRC’s safety review at the license renewal stage[.]” *Turkey Point*, CLI-01-17, slip op. at 8.

BREDL attempts to bolster Contention 2 by repeated assertions that Duke’s discussion of “severe accident mitigation alternatives,” which BREDL acknowledges are analyzed in the McGuire and Catawba ERs, frequently cite human reliability as a basis. BREDL Contentions at 16. Once again, however, BREDL’s analysis is flawed. As demonstrated above, the current licensing bases of the McGuire and Catawba (and indeed all) reactors are intimately bound up with issues of continuing performance by reactor operators and other employees. These performance-related issues are thus dealt with by the ongoing “regulatory process,” not by a unique review during license renewal. It is true that many power reactor functions rely in part or in their entirety on successful performance by individuals. However, that is merely a truism — the same can be said with regard to all plants, and indeed anything at all that involves human activity. Such an expansive interpretation of the license renewal regulations cannot be squared with the limited scope of license renewal as explained in the Commission’s rulemaking and subsequent decisions.

For each of these reasons, BREDL Contention 2 must be rejected in its entirety.

BREDL Contention 3

The Aging Management Program for Steam Generators and Associated Components Such as Steam Generator Tubes is Insufficient and Incomplete, and does not Assure Safe Operations that Prevent Design Basis and Severe Catastrophic Accidents. In Addition, the DBA Frequency for Steam Generator Tube Rupture is Grossly Underestimated.

Response to Contention

In support of its assertion that Duke's aging management programs for steam generators and associated components, such as steam generator tubes, are "insufficient and incomplete," BREDL Contention 3 states that "[d]eficiencies exist in at least three of the program descriptions in the application as they pertain to steam generators, and these deficiencies are primarily errors of omission." BREDL Contentions at 34. Simply put, however, the "errors of omission" described by BREDL do not reflect cognizable deficiencies under 10 C.F.R. Part 54. To a large extent, BREDL's asserted basis for Contention 3 (e.g., missing information) is unfounded, because the information in question is, in fact, in the license renewal application. To the extent other information sought by BREDL has not been included, it is because there is no NRC license renewal regulation that requires the applicant to do so. Contrary to petitioner's contention, there is no valid basis presented for a contention that the application is either "insufficient" or "incomplete."¹³⁶

¹³⁶

BREDL does not allege or show any nexus between its references to the Indian Point 2 tube rupture, NRC Generic Letter 95-03, the 1996 draft of the Generic Aging Lessons Learned ("GALL") Report, the differing professional opinion prepared by Dr. Hopfenfeld, excerpts from ACRS transcripts, or Mr. Lochbaum's testimony, on the one hand, and any particular deficiencies in the license renewal application, on the other hand. BREDL also cites "NUREG-1750" as the source of some of the quotations on pp. 29-30 of its contentions; however, no page citations are provided and footnote 30 is blank. The title of NUREG-1750 is "Assessment of Soil Amplification of Earthquake Ground Motion Using the 'CARES' Code Version 1.2" (Sept. 2001); the NUREG does not appear to be related to steam generators.

(a) *Alleged Deficiencies in the Steam Generator Surveillance Program*

BREDL's first sub-issue under Contention 3 relates to the Steam Generator Surveillance Program. BREDL asserts that the description of the program in the license renewal application (at Appendix B, B.3.31-1 – B.3.31-3) is "simplistic, overly brief, and contains numerous discrepancies and omissions," resulting in a failure to meet 10 C.F.R. §§ 54.13 and 54.21(a). BREDL Contentions at 25, 34-35.

First, BREDL quibbles with the statement in the application that the steam generator surveillance program is "equivalent to"—as opposed to "equal to"—the program described in NUREG-1723.¹³⁷ BREDL Contentions at 34. Duke believes that this is a distinction without a difference. The use of the term "equivalent" conveys that the program is equal to and/or has an identical effect to the program described in NUREG-1723. In any event, BREDL does not explain how this semantic difference (which, we submit, is neither a discrepancy nor an omission) renders the description of this aging management program in the application deficient, or triggers any inconsistency with 10 C.F.R. §§ 54.13 or 54.21.

BREDL next contends that certain "generic issues" (p. 35, sub-issues i. through iv.) were improperly omitted from the application in Table 3.1-1 and in Appendix B, Section B.3.31. BREDL Contentions at 34-35.¹³⁸ As discussed below, BREDL has failed to provide a valid basis for these sub-issues.

¹³⁷ Although BREDL does not so state, NUREG-1723 is the NRC's "Safety Evaluation Report Related to the License Renewal of Oconee Nuclear Station, Units 1, 2 and 3" (June 1999) (NUREG-1723).

¹³⁸ BREDL does not have the cites correct in its proposed contention, but we are addressing the correct citations here. Table 3.1-1 in the application summarizes Aging Management Review Results for the Reactor Coolant System. Appendix B, at B.3.31, is the description of the Steam Generator Surveillance Program which is an applicable aging management program.

Sub-issue i: BREDL states that generic information regarding “an aging management program applicable to either the existing steam generator or the replacement steam generator in Catawba 2” is missing from the license renewal application. This statement, however, is unfounded. The italicized note immediately following the Chapter 3.3 heading in the application (*see* page 3.3-1) indicates that entries are generically applicable to both plants unless otherwise noted. Additionally, note 3 of Table 3.1-1 (on page 3.1-26 of the application) further explains the applicability of Table 3.1-1 entries. In addition, the aging management program description in Appendix B (*see* page B.3.31-1) includes a note that the program applies to both McGuire and Catawba unless stated otherwise. Therefore, there is no valid basis for the sub-issue.

Sub-issue ii: Petitioner states that generic information concerning “aging of steam generator tube materials due to ‘deformation due to corrosion at tube support plate intersections,’ which was identified by the NRC in the SRP,” is not addressed by Duke. Duke acknowledges, first, that the license renewal application was filed before issuance of the “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,” NUREG-1800 (July 2001) (“SRP”). Thus, the application does not necessarily address all topics in the form in which those topics are identified in the SRP. However, this fact – in and of itself – does not indicate that the application is in any way deficient.

The SRP does call out “deformation due to corrosion at tube support plates.” However, the substance of the SRP and BREDL’s concern is in fact addressed in the license renewal application, at page 3.1-22, under the topic of “cracking.” Steam generator tube “deformation” is generally caused by the corrosion of a carbon steel support structure. Deformation can increase local stresses and can lead to primary water stress corrosion cracking and intergranular stress corrosion cracking, which is the aging effect within the scope of license

renewal. Therefore, cracking must be managed for license renewal; this aging effect and the programs that manage it are addressed in the application.

In sum, under this sub-issue BREDL does not identify any specific deficiency in the Steam Generator Surveillance Program with respect to managing aging effects, regardless of cause. The proposed contention fails to raise a genuine issue.

Sub-issue iii: BREDL next asserts that generic information on “the various cracking initiation mechanisms in steam generator tubes, *i.e.* stress corrosion cracking within the broader category of ‘cracking,’” has not been included in the application and that this is a deficiency. However, again, based on a cursory review of the license renewal application itself, there is no basis for such a conclusion.

Section 54.21(a)(3) requires a demonstration that *the effects of aging* will be adequately managed. The renewal application does not need to identify aging mechanisms, only aging effects. *See, e.g.,* 10 C.F.R. § 54.21(a)(3); *see also* 60 Fed. Reg. at 22,463. Inspections designed to look for cracking will identify “cracking” regardless of the initiation mechanism.

In sum, NRC regulations do not require the inclusion of information on mechanisms for the initiation of aging effects; thus, the application is not deficient in this respect, and there is no basis for a contention.

Sub-issue iv: BREDL’s statement that the application fails to address “[f]urther evaluation of Alloy 600 steam generator tubes, repair sleeves and plugs; steam generator shell assembly, and other steam generator components as recommended by the NRC in Table 3.3-1 of the SRP” is also not correct and again simply misreads the license renewal application.

In the SRP, the “Further Evaluation Recommended” column of Table 3.1-2 for the line item “(Alloy 600) Steam Generator tubes, repair sleeves, and plugs” states that: “Yes. [further evaluation recommended for] effectiveness of a proposed [aging management program]

is to be evaluated (See Subsection 3.1.2.2.11).” SRP Subsection 3.1.2.2.11 in turn states, in part, that “The GALL Report recommends that an [aging management program] based on the recommendations of staff-approved NEI 97-06 guidelines, or other alternate regulatory basis for [Steam Generator] degradation management, should be developed to ensure that this aging effect is adequately managed.”

If one looks at Duke’s license renewal application, one would find that, similar to the SRP, the application (*see* Table 3.1-1 (at page 3.1-22)) specifically provides for aging management review of steam generator plugs, and credits the Steam Generator Surveillance Program to manage the effects of aging. Duke’s application commits Duke to follow the recommendations of NEI 97-06, fully consistent with the SRP sub-section cited by BREDL. *See* LRA, Appendix B, B.3.31. BREDL does not address this material; its contention incorrectly presumes a void.

In sum, BREDL’s assertion seems to be no more than a formatting issue based on a difference between the SRP and the license renewal application. BREDL does not provide any valid basis for a contention on the adequacy of the Steam Generator Surveillance Program. The sub-issue fails to meet 10 C.F.R. § 2.714(b)(2) and must be rejected.

(b) Alleged Deficiencies in the Alloy 600 Aging Management Review

In support of its assertion that the Alloy 600 Aging Management Review description in the license renewal application is deficient (*see* BREDL Contentions at 25, 35), BREDL contends that this program cannot satisfy 10 C.F.R. § 54.21 because Duke’s review of this activity will not be completed until the end of the initial 40-year period of operation. However, there is no valid basis for a contention that this activity must be completed earlier than the end of the current license term.

The purpose of the Alloy 600¹³⁹ Aging Management Review, which includes the Steam Generators and other components, is to assess existing programs used to manage nickel-based alloy locations and to determine whether the existing programs require enhancement. The nickel-based alloy components are listed in the license renewal application in Table 3.3-1. The programs that manage these components are listed with each item. In many cases, the existing programs may prove to be sufficient. The Alloy 600 Aging Management Review is intended to evaluate those programs in a timely fashion to determine whether any enhancements are indicated prior to the period of extended operation. The timing of that review (prior to the end of the current 40 year license) meets the intent of the NRC requirement in 10 C.F.R. § 54.29 (a)(1) to manage the effects of aging *during the period of extended operation*. It does so by assessing current programmatic oversight and by assuring that enhancements are made prior to the extended period of operation, which begins at year 40. See LRA, Appendix B, at B.3.1-1.

In sum, contrary to BREDL's assertion, the description of the Alloy 600 aging management review in the license renewal application meets applicable NRC regulations, and BREDL provides no basis for a contention that the program is deficient.

(c) Alleged Deficiencies in the Chemistry Control Program

BREDL also contends that the Chemistry Control Program description in the application is deficient because the application fails to identify "past problems with chemistry control prevalent throughout the industry and the efforts required to prevent recurrence." BREDL Contentions at 35. Contrary to NRC requirements in 10 C.F.R. § 2.714(b)(2)(ii) and (iii), this vague allegation is sufficiently non-specific to preclude its use in support of a

¹³⁹ Alloy 600 is one of the nickel-based alloys. The Alloy 600 Aging Management Review actually encompasses many nickel-based alloy materials, as listed in the activity description in the application, at Appendix B.

contention. BREDL points to no specific deficiencies in the program itself. Absent such a showing, this unfocused assertion does not provide a valid basis to support an admissible contention.

Moreover, BREDL's statements are misleading.¹⁴⁰ As petitioner acknowledges, the Chemistry Control Programs at McGuire and Catawba are described in the application as mitigation programs. The programs do not prevent aging from occurring, but maintain the least corrosive environment possible to slow the aging process. By their very nature, these programs help "to prevent recurrence" of past problems. Also, these programs do incorporate industry experience by adopting industry guidelines.¹⁴¹ BREDL does not challenge the substantive sufficiency of any of this. BREDL's formalistic view that "past problems" must be identified in the application fails to raise any genuine or material dispute.

(d) Other Issues regarding Operating Experience

BREDL next asserts in BREDL Contention 3 that "deficiencies" in Duke's operating experience — and, in particular, in the application's discussion of the steam

¹⁴⁰ BREDL states: "The *Chemistry Control Program* is for managing 'loss of material and/or cracking of components exposed to borated water, closed cooling water, fuel oil, and treated oil environments' and is described as a mitigation program." The phrase "treated oil" in the above quote from the application should be "treated water." The application is correct. See LRA, Appendix B, at B.3.6-1.

¹⁴¹ The Chemistry Control Program has evolved over many years, based on operating experience from fossil plants, nuclear plants, and other industries where chemistry control is necessary. This operating experience is compiled in a set of industry guidelines that describe an acceptable chemistry program used by the nuclear industry. Duke's Chemistry Control Program is consistent with these industry guidelines from the Electric Power Research Institute ("EPRI"), including: (1) *PWR Primary Water Chemistry Guidelines: Revision 4*, EPRI TR-105714-V1R4, (2) *PWR Secondary Water Chemistry Guidelines-Revision 5*, EPRI TR-102134-R5, and (3) *Closed Cooling Water Chemistry Guideline*, EPRI TR-107396. Minor deviations from these guidelines are taken based on the chemistry requirements found in the plant's Technical Specifications, UFSAR, and vendor documents.

generators' operational history — "warrant further scrutiny of the steam generator aging program." BREDL Contentions at 35-36. However, BREDL has failed to demonstrate any nexus to any license renewal requirement or to any specific aspect of the programs used to manage aging effects applicable to the steam generators.

As discussed in the license renewal application, at page B.3.31-1, Duke has committed to follow the guidance of NEI 97-06, *Steam Generator Program Guidelines*, which represent the most current industry guidelines regarding steam generator surveillance programs. The guidance, based on relevant industry operating experience, is intended to bring greater consistency to the management of steam generator programs. BREDL does not identify any specific deficiency in this surveillance program that is specifically discussed in the license renewal application.

Regarding points a. and b. (BREDL Contentions at 36), BREDL cites only two random items related to operating experience prior to replacement of the McGuire steam generators.¹⁴² No connection is drawn to any particular weakness in the aging management programs as they exist today for the replacement steam generators. Suffice it to say, knowledge from inspections and experience gained while operating the original steam generators was incorporated into the design of the replacement generators to preclude the occurrence of similar problems.¹⁴³ Again, as discussed in the application, Duke has committed to the steam generator

¹⁴² The McGuire and Catawba steam generators were replaced in three out of the four units due to the condition of the steam generator tubes. Management of the steam generators includes both inspection and preventive measures. The inspection program requires that tubes that do not meet acceptance criteria be plugged in order to ensure the integrity of the reactor coolant pressure boundary. When too many steam generator tubes are plugged, the steam generators are unable to transfer sufficient heat from the primary to secondary water for the units to operate at 100% power, leading to a decision to replace.

¹⁴³ Regarding BREDL's statements a. and b., at page 36, we note that, according to NUREG/CR-6365, *Steam Generator Tube Failures*, there was a single tube rupture

surveillance guidelines of NEI 97-06, which by their very nature reflect industry operating experience. No basis is provided by BREDL, save speculations, that there is a current deficiency in the program actually referenced in the license renewal application.

In point c., BREDL relies on the mere fact that steam generators have been replaced to somehow suggest that the renewal application is deficient. However, there is no requirement that renewal applicants include a detailed analysis of the operating history of components, such as steam generators, that have since been replaced. For the purposes of license renewal, the focus is on aging management programs going forward. This BREDL issue is little more than an unfounded assertion that, because there were aging effects, the old programs must have been inadequate. In fact, the aging management programs at McGuire and Catawba did identify the aging effects that led to the replacement of the steam generators.¹⁴⁴

In point d., BREDL appears to propose a contention challenging Duke's "practice" of seeking relief from pre-service inspection requirements for "certain numerous steam generator subcomponents." The contention appears to be that this practice has resulted in "the failure to develop a baseline for monitoring aging of these parts." BREDL Contentions at 26, 36.¹⁴⁵ However, the relief request process is an ongoing regulatory process allowed by the

transient at McGuire 1 in 1989. An additional tube leak ("incipient" tube rupture is the terminology applied in table heading) occurred at McGuire 1 in 1992. This leak rate, at 10 gallons per hour, is a small fraction of the normal charging capacity and would not be classified as a tube rupture.

¹⁴⁴ The Chemistry Control Program provides an environment that minimizes damage to the steam generator tubing. The Steam Generator Surveillance Program inspects the tubes and removes them from service when necessary to ensure that the integrity of the reactor coolant pressure boundary is maintained. The Steam Generator Surveillance Program effectively found tube degradation and the resulting high number of plugged tubes resulted in the decision to replace the steam generators.

¹⁴⁵ BREDL identifies a document dated June 4, 2000. However, in fact there is no Duke document of June 4, 2000 making a relief request matching BREDL's description. Duke

Commission's rules. The Inservice Inspection ("ISI") program of the ASME Boiler and Pressure Vessel Code Class 1, Class 2, and Class 3 components is to be performed in accordance with the applicable edition of Section XI of the ASME Code and Addenda, as required by 10 C.F.R. § 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 C.F.R. § 50.55a(g)(6)(i). The mere fact of a relief request is not indicative of an inadequate program and BREDL fails to provide any basis for its assertion that such requests impair the development of "baseline" data. This issue is inaccurate and cannot provide an adequate foundation for a contention. Contrary to petitioner's statement, there is no indication that Duke's relief request was inconsistent with NRC requirements or has in any way precluded the development of "baseline" data.

(e) Other Issues

Regarding BREDL's additional statement in the contention (BREDL Contentions at 24) that "the DBA frequency for steam generator tube rupture is grossly underestimated," petitioner does not provide any additional basis or specificity regarding this statement, contrary to the requirements in 10 C.F.R. § 2.714(b)(2). Indeed, BREDL does not discuss this aspect of BREDL Contention 3 further, except for general references to the topic in the cited excerpts from

did submit a relief request for a portion of the steam generator pre-service examinations for Catawba Unit 1 and McGuire Units 1 and 2 determined to be impractical, by a letter dated May 4, 2000 and supplemented on July 20, 2000. Duke requested that the NRC grant relief from certain ASME Boiler and Pressure Vessel Code pre-service inspection requirements on certain *welds and inner nozzle radii* in the replacement steam generators for McGuire Units 1 and 2 and Catawba Unit 1. Specifically, relief was requested from the requirement to examine essentially 100% of the steam generator primary inlet and outlet inside radius sections, the steam generator primary inlet and outlet nozzle to safe end butt welds, the steam generator auxiliary feedwater circumferential welds, and the steam generator feedwater nozzle inside radius sections, because the required examination volume could not be obtained. Accessible portions of the welds were examined. This relief request was approved by the NRC in a letter dated April 23, 2001. This is a current licensing basis issue that has been resolved.

the testimony of Mr. David Lochbaum that are not presented as a basis for the contention.¹⁴⁶ *Id.* at 31-33. Such unparticularized references do not suffice to support a contention.

BREDL further argues in BREDL Contention 3 that the McGuire and Catawba steam generator aging management program fails to meet NRC requirements for completeness and accuracy in 10 C.F.R. § 54.13. BREDL Contentions at 24. This assertion is without merit. BREDL has not demonstrated that any of the aging management program descriptions referenced in Contention 3 are either incomplete (that is, deficient by omission) or inaccurate. Thus, petitioner has not demonstrated any violation of Section 54.13(a). Similarly, BREDL has not shown that the scope of the existing discussion in the application on the steam generator aging management program does not comply with 10 C.F.R. § 54.13(b). Section 54.13(b) requires Duke to notify the NRC of information “identified by the applicant as having, for the regulated activity, a significant implication for public health and safety or common defense and security.” Accordingly, to the extent it disputes Duke’s compliance with the requirements of 10 C.F.R. § 54.13, BREDL Contention 3 should also be dismissed for lack of a basis.

In sum, for each of the reasons discussed above, BREDL Contention 3 fails to demonstrate that the license renewal application is in any way “insufficient” or is otherwise inconsistent with NRC requirements in Part 54. The proposed contention must therefore be rejected.

¹⁴⁶ A petitioner is responsible for any misunderstanding of its claims. *See Turkey Point*, CLI-01-17, slip op. at 16-17. It is not the obligation of the other parties to this proceeding to sift through BREDL’s lengthy contention and accompanying discussion in an effort to discern any relevant statements. As noted previously, contentions must be based on the license application and the environmental reports, which petitioners have an “ironclad obligation” to examine. *Id.*, slip op. at 30; *citing Oconee*, 49 NRC at 338 and sources cited therein.

BREDL Contention 4

The Aging Management Programs Associated with the Catawba and McGuire Ice Condenser Systems are Insufficient to Assure Safe Operations and Prevent Design Basis and Severe Accidents

Response to Contention

BREDL Contention 4 argues that Duke's aging management programs associated with the McGuire and Catawba plants' ice condensers are insufficient to assure safe operations and prevent design-basis or severe accidents, because they are "incomplete and inaccurate." BREDL Contentions at 37-38. The basis statement also alleges that the SAMA analysis is "incomplete" because it does not address "ice condenser vulnerabilities," and because the operating experience description was "incomplete and inaccurate." *Id.* at 38. This proposed contention must be denied admission in its entirety, because it lacks support and fails to identify any specific omission, inaccuracy or other deficiency in Duke's license renewal application.

First, contrary to the basic thrust of the proposed contention, relevant aging management programs are discussed in the license renewal application. The ice condenser and containment structure are included within license renewal scope and are addressed in Sections 2.4 and 3.5 of the license renewal application. Table 3.5-1 of the application identifies the components of the ice condensers and containment, the aging effects for those components, and the programs that are credited for managing the aging. Specifically, the Containment Inservice Inspection Plan — IWE and the Containment Leak Rate Testing Program are credited with managing the aging of the containment. Ice Condenser Inspections are credited with managing the aging of ice condenser components.¹⁴⁷ The details in the application provide the basis to

¹⁴⁷ BREDL's footnote 36 is simply in error. The AC powered igniters, containment buildings, ice beds, containment spray system, and ice condenser refrigeration are not programs; they are systems and structures. Chemistry Control and Fluid Leak Management are the only programs listed in the footnote; no specific relevance is

conclude that implementation of the programs will allow these systems to perform their intended function — fully consistent with the requirements of 10 C.F.R. § 54.21(a). The application also includes a discussion of relevant experience, including that related to past issues such as missing ice basket screws. *See* LRA at Appendix B, Section B.3.18.¹⁴⁸

Ignoring this information, BREDL begins its statement of “all appropriate facts and expert opinion to support contention” with a brief excerpt from an NRC Advisory Committee on Reactor Safeguards (“ACRS”) meeting transcript, in which two ACRS members appear to be exchanging banter on the topic of ice condensers. BREDL Contentions at 38. While undoubtedly bringing a smile to the members of BREDL, this excerpt in no way fulfills the requirement in Section 2.714(b)(2)(iii) that the intervenor provide “sufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact.” This offhand remark also does not purport to reflect the views of the ACRS. In any event, broad issues related to the ice condenser system itself would represent a challenge to the CLB outside the scope of a license renewal review.

BREDL next attempts to support Contention 4 by citing the NRC-sponsored study on ice condensers (NUREG/CR-6427) discussed previously in connection with NIRS Contentions 1.1.4. and 1.1.5. BREDL Contentions at 38-40. BREDL excerpts two brief segments the “voluminous” report prepared for the NRC, claims that Duke “failed to even

provided by BREDL and no specific deficiencies in these programs are ever identified. Systems and structures in scope that prevent a release to the environment include those described in Sections 2.3 and 2.4 of the application. The aging management review of components within these systems and structures is provided in Sections 3.1-3.5 of the application. Aging management programs are described in Appendix B.

¹⁴⁸ The deficiencies associated with missing screws were attributed to ice basket maintenance and were not related to aging of the components. LRA, Appendix B, at B.3.18-2.

reference this landmark report” in its application, and asks that NUREG/CR-6427 be introduced “as a central point of dispute in this proceeding.” *Id.* However, the “central point of dispute” based on the report is never further specified. This bald reference, therefore, also fails utterly to meet the Section 2.714(b)(2)(iii) criteria for admissible contentions. Moreover, as stated above, challenges to the CLB are not within the scope of this proceeding. 10 C.F.R. § 54.30.

BREDL next attempts to focus its questions regarding ice condenser systems by citing the views of Dr. Edwin Lyman on “vulnerabilities” of these systems. BREDL Contentions at 40-44. However, this dissertation is addressed entirely to perceived current risks associated with reliance on ice condenser systems (including an alleged vulnerability related to a Station Blackout event). These risk issues are not in any way associated by Dr. Lyman or BREDL to an equipment aging issue or any other issue unique to the period of extended operation. Therefore, this issue remains outside the scope of this proceeding.¹⁴⁹

BREDL does make a reference to ice condenser vulnerabilities in the context of an assertion that Duke’s SAMA analyses are incomplete. BREDL Contentions at 38-40. However, BREDL does not point to any regulatory requirement that Duke specifically reference either NUREG/CR-6427 or Dr. Lyman’s generic views in the SAMA analyses for McGuire and Catawba and, indeed, no such requirement exists. Framed in a similar fashion, NUREG/CR-6427 was also referenced as a basis for NIRS Contentions 1.1.4 and 1.1.5. For the reasons

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BREDL does provide a portion of the NRC Chairman’s response to Dr. Lyman’s report. Interestingly, the Chairman therein does not mention license renewal, but instead states that an appropriate evaluation of the issue should be done “through the [NRC’s] generic safety issue program.” BREDL Contentions at 44. It is thus logical to conclude that the Commission views ice condenser issues such as those raised by BREDL as appropriately resolved through ongoing inspections and other agency contacts with facilities, rather than through the license renewal process. As discussed in connection with NIRS Contention 1.1.4, the NRC is addressing these issues as a generic issue and through rulemaking.

addressed previously, there is no basis for a SAMA contention based on these documents because Duke's analyses have already addressed the substantive issues of those reports and BREDL has not identified any specific deficiency in Duke's SAMA analysis. Moreover, as discussed above, NUREG/CR-6427 is based upon IPEs performed in the early 1990's and, in today's context, does not identify any new severe accident scenario, nor does it identify any specific SAMA to reduce the consequences. In any event, as discussed in connection with NIRS Contention 1.1.4, the NRC is addressing combustible gas control systems and the issues of NUREG/CR-6427 as a generic matter (*see* 66 Fed. Reg. 57,001).

Finally, BREDL alleges "[d]eficiencies in the licensee's operating experience" that "warrant further scrutiny of the ice condenser system aging [management] program(s)." BREDL Contentions at 44. However, BREDL here does no more than recycle a portion of its earlier Petition to Dismiss (which remains pending before the Commission) characterizing the supposed 1998 findings of an NRC Allegation Review Board (ARB) as an ostensible "failure" by Duke to facilitate the exchange of operating information among its nuclear plants. As in its previous filing, BREDL totally mischaracterizes the NRC's position on this issue.¹⁵⁰ There is no valid basis for a contention here.

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As Duke explained in its November 5, 2001 Response to BREDL's Petition to Dismiss, a June 22, 1998 NRC memorandum from Oscar De Miranda to Jean Lee, Office of Nuclear Reactor Regulation, enclosed the results of an NRC Region II review of the transcript of a Department of Labor (DOL) case involving another NRC licensee. The review was conducted to identify any potential issues that might have been raised related to ice condensers. The purpose was to determine whether or not any technical issues would need to be addressed by other plants (such as Duke's) with ice condensers. Attachment I to that memorandum is a copy of the June 19, 1998 meeting minutes of the Region II ARB, providing the ARB's determination of the results of the NRC Staff's review of the DOL transcript. The *concern by an unknown alleger* was that "problems with D.C. Cook ice condenser containment such as configuration and testing and ice basket bay doors and components were known but not reported by D.C. Cook, Watts Bar, McGuire, and Westinghouse." This statement does not in any way reflect the finding of the ARB. Rather, the action recommended by the Region II ARB was to "forward allegation along

In sum, BREDL has failed to demonstrate any deficiency whatsoever in Duke's aging management programs or SAMA analyses for the ice condenser system as presented in Duke's license renewal application. There are no citations to any specific portions of the application (apart from an inaccurate listing of "programs cited in the application") that are deficient. Merely referring to a number of documents to demonstrate an application's deficiency, without explaining which portions of the application lack detail or accuracy, is insufficient to produce an admissible contention, or basis, suitable for litigation.¹⁵¹ As the Commission stated in its Delegation Order referring this proceeding to this Board, "It is the responsibility of the petitioner to provide the necessary information to satisfy the basis requirement for the admission of its contentions and to demonstrate that a genuine dispute exists within the scope of this proceeding." CLI-01-20, slip op. at 2 (emphasis added). Accordingly, BREDL's assertion that Duke's application is incomplete "because it fails to incorporate new and extensive information regarding ice condenser vulnerabilities" must be rejected for lack of nexus between the alleged "new and extensive information" and a license renewal review.¹⁵² BREDL Contentions at 38.

with the matrix which delineates the ARB determination to NRR OAC and close [the] case." BREDL has made no showing in Contention 4 to contradict Duke's position on this matter.

¹⁵¹ See 10 C.F.R. § 2.714(b)(2)(iii); see also *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-20, 21 NRC 1732, 1741 (1985), *rev'd and remanded on other grounds*, CLI-86-8, 23 NRC 241 (1986).

¹⁵² Similarly, BREDL's subsequent assertion that "In its 'analysis of potential containment-related SAMAs,' the licensee failed to even identify potentially dominant failure modes for a severe accident[]" also fails to explain why such identifications are allegedly required, or even how such "failure modes" are defined, and is thus insufficient to constitute an admissible contention or its basis. See *Rancho Seco*, LBP-93-23, 38 NRC at 246 ("A contention that simply alleges that some matter ought to be considered does not provide the basis for an admissible contention" (footnote omitted)).

For each of these reasons, BREDL Contention 4 must be denied in its entirety.

BREDL Contention 5

The Assessment of Reactor Vessel Integrity with Regard to Embrittlement and Metal Fatigue is Insufficient and Incomplete

Response to Contention

BREDL Contention 5 was included in an e-mail that was not received until after the 5:00 p.m. deadline of November 29, 2001, without any showing of good cause pursuant to 10 C.F.R. § 2.714(a)(1). A petitioner must show that untimely conditions meet these standards and a failure to do so is grounds to reject the contention.¹⁵³

The proposed contention, in any event, is presented in somewhat sketchy form and is otherwise inadmissible. BREDL suggests that Duke's application is insufficient in assessing reactor vessel integrity with regard to embrittlement and metal fatigue. The explanation of basis merely provides a general dissertation on the "well-known phenomenon" of embrittlement of reactor parts. The statement of facts and expert opinion then quotes from a letter from Jesse Riley (with no identified credentials) to the NRC, arguing that coupon tests addressing embrittlement issues are inadequate because, "unlike the reactor vessel, the coupons have not been exposed to another weakening factor, stress fatigue." Mr. Riley's quote continues:

The coupon test provides no information as to the effect of the fatigue on the reactor vessel which cycles between high load and no load. To the best of my knowledge this matter has not been examined in a licensing proceeding. It was not considered in the licensing of the McGuire and Catawba plants.

BREDL Contention 5 is very similar to NIRS Contention 2.1. Like that contention, it is inadmissible because it challenges the NRC's regulations on reactor vessel

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Baltimore Gas & Electric Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 347 (1998).

embrittlement, lacks any specificity with respect to the aging management programs described in Duke's license renewal application, and in any event is not supported by an adequate basis. The contention must be rejected for reasons similar to those cited by the licensing board in the *Turkey Point* case with respect to a contention challenging the applicant's materials surveillance program. *Turkey Point*, LBP-01-6, 53 NRC at 157-58.

As discussed above in connection with NIRS Contention 2.1, reactor vessel irradiation embrittlement is discussed in the McGuire and Catawba license renewal application. For example, Section 4.2.2 of the license renewal application contains the evaluation of pressurized thermal shock for the McGuire and Catawba reactor vessels, based on the NRC's fracture toughness requirements for protection against pressurized thermal shock in 10 C.F.R. § 50.61. The RT_{PTS} values have been projected to the end of the period of extended operation using the methods of Section 50.61. The results meet the requirements of 10 C.F.R. § 54.21(c)(ii). BREDL Contention 5 does not address or challenge this conclusion, choosing instead to generally challenge the adequacy of a coupon test to "account for stress fatigue."

The Thermal Fatigue Management Program credited for McGuire and Catawba is also described in Section 4.3 of the license renewal application. This program specifically includes thermal fatigue of Class 1 components, which addresses "stress fatigue." LRA at 4.3-1. The contention does not acknowledge the program or claim any specific deficiency. The basis for the contention is therefore inadequate to meet the threshold showing required by 10 C.F.R. § 2.714(b)(2). See *Millstone*, CLI-01-24, slip op. at 18-19. Similarly, BREDL does not acknowledge or address the assessment of pressure temperature operating limits in Section 4.2.3

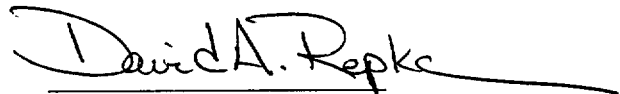
of the application or the discussion of the Reactor Vessel Integrity Program in Appendix B, Section B.3.26 of the application.¹⁵⁴

For each of the reasons set forth above, BREDL Contention 5 cannot be admitted.

VI. CONCLUSION

For the above reasons, the amended petitions and proposed contentions filed by NIRS and BREDL must be denied in their entirety, and this proceeding dismissed.

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ATTORNEYS FOR DUKE ENERGY
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Dated in Washington, D.C.
this 13th day of December 2001

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BREDL includes in its basis statement one reference to an event that occurred on March 17, 2001 during a McGuire Unit 1 system cooldown. The Thermal Fatigue Management Program specifically evaluates such operating experience to compare the results with allowable thermal transients. The event on its face was considered by the NRC to have "very low safety significance." In any event, BREDL draws no connection between this event and any inadequacy in the hardware, operating limits, or aging management programs at McGuire or Catawba.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	
DUKE ENERGY CORPORATION)	Docket Nos. 50-369-LR
)	50-370-LR
(McGuire Nuclear Station,)	50-413-LR
Units 1 and 2, and)	50-414-LR
Catawba Nuclear Station,)	
Units 1 and 2))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "RESPONSE OF DUKE ENERGY CORPORATION TO AMENDED PETITIONS TO INTERVENE FILED BY NUCLEAR INFORMATION AND RESOURCE SERVICE AND BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE" in the captioned proceeding have been served on the following by deposit in the United States mail, first class, this 13th day of December 2001. Additional e-mail service has been made this same day as shown below.

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