

May 21, 2012

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket Nos. 50-483-LR
UNION ELECTRIC CO.	)	
	)	ASLBP No. 12-919-06-LR-BD01
(Callaway Plant, Unit 1)	)	

**AMEREN’S ANSWER OPPOSING THE MISSOURI COALITION FOR THE ENVIRONMENT’S HEARING REQUEST AND PETITION TO INTERVENE**

**I. INTRODUCTION**

Union Electric Company, dba Ameren Missouri (“Ameren”), hereby answers and opposes the “Missouri Coalition for the Environment’s Hearing Request and Petition to Intervene in License Renewal Proceeding for Callaway Nuclear Power Plant,” dated April 24, 2012 (“Petition” or “Pet.”).<sup>1</sup> The Petition should be denied because none of the contentions proposed by the Missouri Coalition for the Environment (“MCE”) meets the NRC standards for admissibility. Of MCE’s three proposed contentions, two seek to litigate the Commission’s post-Fukushima orders and information requests, which are clearly beyond the scope of this proceeding. The third, which alleges inadequate discussion of a wind energy alternative, is inadmissible because it fails to present any genuine dispute with the analysis of this alternative in Ameren’s Application, fails to make any showing that this alternative is capable of providing baseload power, and fails to allege any environmental benefit material to the NRC’s decision-making.

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<sup>1</sup> On May 7, 2012, MCE filed Errata to Hearing Request and Petition to Intervene, along with a corrected copy of the Petition incorporating the changes.

## II. PROCEDURAL BACKGROUND

By Application submitted on December 19, 2011, Ameren requested renewal of Operating License No. NPF-30 for the Callaway Plant, Unit 1 (the “Application”).<sup>2</sup> On February 24, 2012, the Nuclear Regulatory Commission (“NRC” or “Commission”) published a notice of docketing and opportunity for hearing (“Notice”) regarding this Application. 77 Fed. Reg. 11,173 (Feb. 24, 2012). The Notice permitted any person whose interest may be affected to file a request for hearing and petition for leave to intervene within 60 days of the Notice. Id. at 11,174.

The Notice directed that any petition must set forth with particularity the interest of the petitioner and how that interest may be affected (i.e., standing),<sup>3</sup> as well as the specific contentions sought to be litigated. Id. The Notice stated:

Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the requestor/petitioner shall provide a brief explanation of the bases of each contention and a concise statement of the alleged facts or the expert opinion that supports the contention on which the requestor/petitioner intends to rely in proving the contention at the hearing. The requestor/petitioner must also provide references to those specific sources and documents of which the requestor/petitioner is aware and on which the requestor/petitioner intends to rely to establish those facts or expert opinion. The requestor/petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the action under consideration. The contention must be one that, if proven, would entitle the requestor/petitioner to relief. A requestor/petitioner who fails to satisfy these requirements with respect to at least one contention will not be permitted to participate as a party.

Id. (footnote omitted).

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<sup>2</sup> The Application is available in the NRC’s Agency-wide Documents Access and Management System (ADAMS) at Accession No. ML113530374. The Application includes Applicant’s Environmental Report, Operating License Renewal Stage (“ER”), available at ADAMS Accession Nos. ML113540349, ML113540352, and ML113540354.

<sup>3</sup> Ameren does not dispute MCE’s standing.

### III. PETITIONERS' CONTENTIONS DO NOT MEET THE COMMISSION'S STANDARDS FOR ADMISSIBILITY

In order to be admitted to a proceeding, a petitioner must plead at least one admissible contention. 10 C.F.R. § 2.309(a). For the reasons set forth below, MCE has not done so, and therefore the Petition must be denied.

#### A. Standards for Contentions

##### 1. Contentions Must Be Within the Scope of the Proceeding and May Not Challenge NRC's Rules

As a fundamental requirement, a contention is only admissible if it addresses matters within the scope of the proceeding and does not seek to attack the NRC's regulations governing the proceeding. This fundamental limitation is particularly important in a license renewal proceeding because the Commission has conducted extensive rulemaking to define the technical and environmental showing that an applicant must make. As discussed later in this Answer, two of MCE's three contentions are beyond the scope of this proceeding.

10 C.F.R. Part 54 governs the health and safety matters that must be considered in a license renewal proceeding. The Commission has specifically limited this safety review to the matters specified in 10 C.F.R. §§ 54.21 and 54.29(a),<sup>4</sup> which focus on the management of aging of certain systems, structures and components, and the review of time-limited aging evaluations. See Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 N.R.C. 3, 7-8 (2001); Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2), CLI-02-26, 56 N.R.C. 358, 363 (2002). Thus, the potential effect of aging on systems, structures and components is the issue that defines the scope of the safety review in license renewal

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<sup>4</sup> The Commission has stated that the scope of review under its rules determines the scope of admissible issues in a license renewal hearing. 60 Fed. Reg. 22,461, 22,482 n.2 (May 8, 1995). "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." Turkey Point, CLI-01-17, 54 N.R.C. at 10.

proceedings. Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 N.R.C. 631, 637 (2004).

The rules in 10 C.F.R. Part 54 are intended to make license renewal a stable and predictable process. 60 Fed. Reg. at 22,461, 22,462, 22,463, 22,485. As the Commission has explained, “[w]e sought to develop a process that would be both efficient, avoiding duplicative assessments where possible, and effective, allowing the NRC Staff to focus its resources on the most significant safety concerns at issue during the renewal term.” Turkey Point, CLI-01-17, 54 N.R.C. at 7 (2001).

To require a full reassessment of [safety issues that are routinely monitored and assessed by ongoing agency oversight and agency-mandated licensee programs] at the license renewal stage, the Commission found, would be both unnecessary and wasteful. Accordingly, the NRC’s license renewal review focuses on those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs. License renewal reviews are not intended to “duplicate the Commission’s ongoing reviews of operating reactors.”

Id. (emphasis added; citation omitted).

To this end, the Commission has confined 10 C.F.R. Part 54 to those issues uniquely determined to be relevant to the public health and safety during the period of extended operation, leaving all other safety issues to be addressed by the existing regulatory processes. 60 Fed. Reg. at 22,463. This scope is based on the principle established in the rulemaking proceedings that, with the exception of the detrimental effects of aging and a few other issues related to safety only during the period of extended operation, the existing regulatory processes are adequate to ensure that the licensing bases of currently operating plants provide and maintain an adequate level of safety. 60 Fed. Reg. at 22,464, 22,481-82. Consequently, license renewal does not focus on operational issues, because these issues “are effectively addressed and maintained by ongoing agency oversight, review, and enforcement.” Millstone, CLI-04-36, 60 N.R.C. at 638 (footnote

omitted). “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, 54 N.R.C. at 10 (quoting 56 Fed. Reg. 64,943, 64,945 (Dec. 13, 1991)) (emphasis added).<sup>5</sup>

The NRC rules governing environmental matters – which are contained in 10 C.F.R. §§ 51.53(c), 51.95(c), and Appendix B to Part 51 – are similarly intended to produce a more focused and, therefore, more effective review. 61 Fed. Reg. 28,467 (June 5, 1996); Turkey Point, CLI-01-17, 54 N.R.C. at 11. To accomplish this objective, the NRC prepared a comprehensive Generic Environmental Impact Statement for License Renewal of Nuclear Plants (1996) (“GEIS”), NUREG-1437, and made generic findings in the GEIS, which it then codified in Appendix B to 10 C.F.R. Part 51. Those issues that could be resolved generically for all plants are designated as Category 1 issues and are not evaluated further in a license renewal proceeding (absent waiver or suspension of the rule by the Commission based on new and significant information). 61 Fed. Reg. at 28,468, 28,470, 28,474; Turkey Point, CLI-01-17, 54 N.R.C. at 12. The remaining (i.e., Category 2) issues that must be addressed in an applicant’s environmental report are defined specifically in 10 C.F.R. § 51.53(c). See generally, Turkey Point, CLI-01-17, 54 N.R.C. at 11-12.

10 C.F.R. § 2.309(f)(1)(iii)-(iv) requires that a petitioner demonstrate that the issue raised by each of its contentions is within the scope of the proceeding and material to the findings that the NRC must make. Licensing boards “are delegates of the Commission” and, as such, they may “exercise only those powers which the Commission has given [them].” Public Service Co.

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<sup>5</sup> The Commission recently affirmed that, especially with regard to license renewal, “[t]he NRC’s ongoing regulatory and oversight processes provide reasonable assurance that each facility complies with its ‘current licensing basis,’ which can be adjusted by future Commission order or by modification to the facility’s operating license outside the renewal proceeding (perhaps even in parallel with the ongoing license renewal review).” Union Electric Co. d/b/a Ameren Missouri (Callaway Plant, Unit 2), CLI-11-05, 74 N.R.C. \_\_\_, slip op. at 26 (Sept. 9, 2011) (emphasis added) (footnote omitted).

of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 N.R.C. 167, 170 (1976) (footnote omitted); accord Portland General Electric Co. (Trojan Nuclear Plant), ALAB-534, 9 N.R.C. 287, 289-90 & n.6 (1979). Accordingly, it is well established that a contention is not cognizable unless it is material to a matter that falls within the scope of the proceeding for which the licensing board has been delegated jurisdiction. Marble Hill, ALAB-316, 3 N.R.C. at 170-71; see also Commonwealth Edison Co. (Zion Station, Units 1 and 2), ALAB-616, 12 N.R.C. 419, 426-27 (1980); Commonwealth Edison Co. (Carroll County Site), ALAB-601, 12 N.R.C. 18, 24 (1980).

It is also well established that a petitioner is not entitled to an adjudicatory hearing to attack generic NRC requirements or regulations. Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 and 3), CLI-99-11, 49 N.R.C. 328, 334 (1999). “[A] licensing proceeding . . . is plainly not the proper forum for an attack on applicable statutory requirements or for challenges to the basic structure of the Commission’s regulatory process.” Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 A.E.C. 13, 20, aff’d in part on other grounds, CLI-74-32, 8 A.E.C. 217 (1974) (footnote omitted). Thus, a contention which collaterally attacks a Commission rule or regulation is not appropriate for litigation and must be rejected. 10 C.F.R. § 2.335; Potomac Electric Power Co. (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 A.E.C. 79, 89 (1974). A contention which “advocate[s] stricter requirements than those imposed by the regulations” is “an impermissible collateral attack on the Commission’s rules” and must be rejected. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-82-106, 16 N.R.C. 1649, 1656 (1982); see also Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-19, 33 N.R.C. 397, 410, aff’d in part and rev’d in part on other grounds, CLI-91-12, 34 N.R.C. 149

(1991). Likewise, a contention that seeks to litigate a generic determination established by Commission rulemaking is “barred as a matter of law.” Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 N.R.C. 5, 29-30 (1993).

These limitations are controlling in this proceeding in that the scope of admissible environmental contentions is constrained by 10 C.F.R. §§ 51.53(c), 51.95(c), and Appendix B to Part 51; and the scope of technical contentions is constrained by 10 C.F.R. Part 54. See Turkey Point, CLI-01-17, 54 N.R.C. at 11-13; see also Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 N.R.C. 327, 329 (2000); Baltimore Gas & Electric Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 N.R.C. 39, 41, motion to vacate denied, CLI-98-15, 48 N.R.C. 45, 56 (1998); Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2 and 3), CLI-98-17, 48 N.R.C. 123, 125 (1998).

2. Contentions Must Be Specific and Supported By a Basis Demonstrating a Genuine, Material Dispute

In addition to the requirement to address issues within the scope of the proceeding, a contention is admissible only if it provides:

- a “specific statement of the issue of law or fact to be raised or controverted;”
- a “brief explanation of the basis for the contention;”
- a “concise statement of the alleged facts or expert opinions” supporting the contention together with references to “specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue;” and
- “[s]ufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact,” which showing must include “references to specific portions of the application (including the applicant’s environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner’s belief.”

10 C.F.R. § 2.309(f)(1)(i), (ii), (v) and (vi). The failure of a contention to comply with any one of these requirements is sufficient grounds for dismissing the contention. Palo Verde, CLI-91-12, 34 N.R.C. at 155-56.

These pleading standards governing the admissibility of contentions are the result of a 1989 amendment to 10 C.F.R. § 2.714, now § 2.309, which was intended “to raise the threshold for the admission of contentions.” 54 Fed. Reg. 33,168 (Aug. 11, 1989); see also Oconee, CLI-99-11, 49 N.R.C. at 334; Palo Verde, CLI-91-12, 34 N.R.C. at 155-56. The Commission has stated that the “contention rule is strict by design,” having been “toughened . . . in 1989 because in prior years ‘licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation.’” Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 N.R.C. 349, 358 (2001) (citation omitted). The pleading standards are to be enforced rigorously. “If any one . . . is not met, a contention must be rejected.” Palo Verde, CLI-91-12, 34 N.R.C. at 155 (citation omitted). A licensing board is not to overlook a deficiency in a contention or assume the existence of missing information. Id.

The Commission has explained that this “strict contention rule” serves multiple purposes, which include putting other parties on notice of the specific grievances and assuring that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions. Oconee, CLI-99-11, 49 N.R.C. at 334. By raising the threshold for admission of contentions, the NRC intended to obviate lengthy hearing delays caused in the past by poorly defined or supported contentions. Id. As the Commission reiterated in incorporating these same standards into the new Part 2 rules, “[t]he threshold standard is necessary to ensure that hearings cover only genuine and pertinent issues of concern

and that issues are framed and supported concisely enough at the outset to ensure that the proceedings are effective and focused on real, concrete issues.” 69 Fed. Reg. 2,182, 2,189-90 (Jan. 14, 2004).

Under these standards, a petitioner is obligated “to provide the [technical] analyses and expert opinion” or other information “showing why its bases support its contention.” Georgia Institute of Technology (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 N.R.C. 281, 305, vacated in part and remanded on other grounds, CLI-95-10, 42 N.R.C. 1, aff’d in part, CLI-95-12, 42 N.R.C. 191 (1995). Where a petitioner has failed to do so, “the [Licensing] Board may not make factual inferences on [the] petitioner’s behalf.” Id., citing Palo Verde, CLI-91-12, 34 N.R.C. 149. See also Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, 180 (1998) (a “bald assertion that a matter ought to be considered or that a factual dispute exists . . . is not sufficient”; rather “a petitioner must provide documents or other factual information or expert opinion” to support a contention’s “proffered bases”) (citations omitted).

Further, admissible contentions “must explain, with specificity, particular safety or legal reasons requiring rejection of the contested [application].” Millstone, CLI-01-24, 54 N.R.C. at 359-60. In particular, this explanation must demonstrate that the contention is “material” to the NRC’s findings and that a genuine dispute on a material issue of law or fact exists. 10 C.F.R. § 2.309(f)(1)(iv), (vi). The Commission has defined a “material” issue as meaning one where “resolution of the dispute would make a difference in the outcome of the licensing proceeding.” 54 Fed. Reg. at 33,172 (emphasis added).

As observed by the Commission, this threshold requirement is consistent with judicial decisions, such as Conn. Bankers Ass'n v. Bd. of Governors, 627 F.2d 245, 251 (D.C. Cir. 1980), which held that:

[A] protestant does not become entitled to an evidentiary hearing merely on request, or on a bald or conclusory allegation that . . . a dispute exists. The protestant must make a minimal showing that material facts are in dispute, thereby demonstrating that an "inquiry in depth" is appropriate.

Id. (footnote omitted); see also Calvert Cliffs, CLI-98-14, 48 N.R.C. at 41 ("It is the responsibility of the Petitioner to provide the necessary information to satisfy the basis requirement for the admission of its contentions . . ."). A contention, therefore, is not to be admitted "where an intervenor has no facts to support its position and where the intervenor contemplates using discovery or cross-examination as a fishing expedition which might produce relevant supporting facts." 54 Fed. Reg. at 33,171.<sup>6</sup> As the Commission has emphasized, the contention rule bars contentions where petitioners have what amounts only to generalized suspicions, hoping to substantiate them later, or simply a desire for more time and more information in order to identify a genuine material dispute for litigation. Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2), CLI-03-17, 58 N.R.C. 419, 424 (2003).

Therefore, under the Rules of Practice, a statement "that simply alleges that some matter ought to be considered" does not provide a sufficient basis for a contention. Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 N.R.C. 200, 246 (1993), review declined, CLI-94-2, 39 N.R.C. 91 (1994). Similarly, a mere reference to

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<sup>6</sup> See also Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 N.R.C. 460, 468 (1982), vacated in part on other grounds, CLI-83-19, 17 N.R.C. 1041 (1983) ("[A]n intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable [the petitioner] to uncover any information that could serve as the foundation for a specific contention. Stated otherwise, neither Section 189a. of the Act nor Section 2.714 [now 2.309] of the Rules of Practice permits the filing of a vague, unparticularized contention, followed by an endeavor to flesh it out through discovery against the applicant or staff.").

documents does not provide an adequate basis for a contention. Baltimore Gas & Electric Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 N.R.C. 325, 348 (1998).

Rather, NRC's pleading standards require a petitioner to read the pertinent portions of the license application, including the safety analysis report and the environmental report, state the applicant's position and the petitioner's opposing view, and explain why it has a disagreement with the applicant. 54 Fed. Reg. at 33,170; Millstone, CLI-01-24, 54 N.R.C. at 358. If the petitioner does not believe these materials address a relevant issue, the petitioner is "to explain why the application is deficient." 54 Fed. Reg. at 33,171; Palo Verde, CLI-91-12, 34 N.R.C. at 156. A contention that does not directly controvert a position taken by the applicant in the license application is subject to dismissal. See Texas Utilities Electric Co. (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 N.R.C. 370, 384 (1992), appeal dismissed, CLI-93-10, 37 N.R.C. 192, stay denied, CLI-93-11, 37 N.R.C. 251 (1993). Furthermore, an allegation that some aspect of a license application is "inadequate" or "unacceptable" does not give rise to a genuine dispute unless it is supported by facts and a reasoned statement of why the application is unacceptable in some material respect. Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-90-16, 31 N.R.C. 509, 521 & n.12 (1990).

#### B. MCE's Contentions Are Inadmissible

As explained below, none of MCE's proposed contentions meet the applicable standards for the admission of contentions in NRC licensing proceedings.

##### 1. Contention 1 (Information in Environmental Report Regarding Modifications in Response to Order EA-12-049) Is Inadmissible

Contention 1, which alleges that the Environmental Report fails to satisfy 10 C.F.R. § 51.53(c)(2) because it does not include information about Ameren's plans to modify the Callaway facility in response to the Commission's post-Fukushima enforcement order EA-12-

049<sup>7</sup> including an array of alternatives (Pet. at 2-3), is inadmissible because it raises issues outside the scope of the proceeding, contrary to 10 C.F.R. § 2.309(f)(1)(iii), and seeks to raise issues not material to the finding that the NRC must make, contrary to 10 C.F.R. §§ 2.309(f)(1)(iv). Further, Contention 1 does not demonstrate any genuine dispute with the Application, in contravention of 10 C.F.R. § 2.309(f)(1) (vi). Finally, Contention 1 is not supported by any relevant facts or expert opinion, thus failing to satisfy 10 C.F.R. § 2.309(f)(1)(v).

a. Contention 1 Is Outside the Scope of this Proceeding and Seeks to Raise Issues Not Material to the Findings that the NRC Must Make

Contention 1 attempts to litigate issues related to a generic post-Fukushima enforcement order, matters which are outside the scope of a license renewal proceeding. In raising such issues, MCE misconstrues the purpose of license renewal review. As noted previously, the scope of admissible environmental contentions in license renewal proceedings is constrained by 10 C.F.R. §§ 51.53(c), 51.95(c), and Appendix B to Part 51. An applicant’s environmental report must contain “an analysis of the environmental impacts of renewing a license, the environmental impacts of alternatives, and mitigation alternatives.” NUREG-1437 at 1.7.2 (emphasis added). “The environmental report need not discuss other issues not related to the environmental effects of the proposed action and the alternatives.” 10 C.F.R. § 51.53(c)(2) (emphasis added). Thus, the scope of an environmental report, and contentions alleging deficiencies in it, are limited to the environmental impacts of the proposed action, i.e., renewing the applicant’s license. Consistent with the Commission’s requirement that contentions in this proceeding be “limited to matters within the scope of the action under consideration” (77 Fed. Reg. at 11,174), it would

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<sup>7</sup> Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Effective Immediately) (Mar. 12, 2012), 77 Fed. Reg. 16,091 (Mar. 19, 2012). Order EA-12-049 requires all holders of Part 50 operating licenses to comply with certain requirements to provide greater mitigation capability for beyond-design-basis external events. 77 Fed. Reg. at 16,093.

impermissibly broaden the scope of the proceeding to introduce the causally unrelated issue of possible environmental impacts flowing from the Commission’s issuance of Order EA-12-049 as it pertains to all power reactor licensees and holders of construction permits, requires actions irrespective of license renewal, and for Callaway (whose license does not expire until October 18, 2024)<sup>8</sup> requires actions long before the period of extended operation.<sup>9</sup> Indeed, to allow such an expansion to encompass a generically applicable requirement for all reactor licensees would undermine the regulatory efficiency and focused environmental review that the Commission’s license renewal regulations are designed to achieve. See 61 Fed. Reg. at 28,467.

Contrary to MCE’s claim, 10 C.F.R. § 51.53(c)(2) does not require a license renewal applicant to describe plans for modifying a facility in response to EA-12-049. 10 C.F.R. § 51.52(c)(2) requires the applicant’s environmental report to describe “the proposed action.” As that section indicates, the proposed action includes the applicant’s plans to modify the facility and its administrative control procedures “as described in accordance with § 54.21 of this chapter” – meaning those changes those modifications and procedure changes that are being made to manage the effects of aging as required by 10 C.F.R. Part 54.<sup>10</sup>

This plain reading of the rules is consistent with the NRC guidance in Supplement 1 to Regulatory Guide 4.2, Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses (Sept. 2000). That guidance provides:

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<sup>8</sup> See 77 Fed. Reg. at 11,173.

<sup>9</sup> As MCE acknowledges, each individual licensee’s proposed compliance plan is due in 2013 (Pet. at 4-5), with the requirements ultimately “scheduled to be implemented within the next four years” (*id.* at 6). See 77 Fed. Reg. at 16,093.

<sup>10</sup> Indeed, when the language in 10 C.F.R. § 51.53(c)(2) was first proposed, it referred to plans to modify the facility or its administrative control procedures as described in 10 C.F.R. § 54.21(e). See 56 Fed. Reg. 47,016, 47,027 (Sept. 17, 1991). At this time, proposed section 54.21(e) provided that the license renewal application should include “[a] description of any proposed modifications to the facility or its administrative control procedures necessary to assure that age-related degradation is adequately managed during the renewal term.” SECY-91-138, Final Rule on Nuclear Power Plant License Renewal (May 15, 1991), Encl. 1 at R-17 (emphasis added). Therefore, the intent of this provision is clear.

The proposed action is renewal of an operating license and continued operation of the plant during the renewal term, including all attendant activities. In addition to continuing operation and maintenance activities, attendant activities may include refurbishment to allow for extended plant operation and changes to surveillance, on-line monitoring, inspections, testing, trending, and recordkeeping (SMITTR).

Id. at 4.2-S-9 (emphasis added).<sup>11</sup>

This plain reading of the rules is also consistent with NEPA, which only requires analysis of impacts causally related to the proposed action. NEPA requires consideration of “the environmental impact of the proposed action” (42 U.S.C. § 4332(C)(i)), and this provision has been interpreted as requiring a close causal connection between the proposed action and an alleged effect before that effect need be considered. See Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 773-74 (1983); Department of Transportation v. Public Citizen, 541 U.S. 752, 767 (2004). The CEQ regulations also define the effects that must be considered in an EIS as those “which are caused by the action.” 40 C.F.R. § 1508.8. Consequently, NEPA does not require evaluation of effects unrelated to the proposal. DOT v. Public Citizen, 541 U.S. 752, 767-68 (2004); Burbank Anti-Noise Group v. Goldschmidt, 623 F.2d 115, 116-17 (9th Cir. 1980), cert. denied, 450 U.S. 965 (1981).

Further, in seeking to require Ameren to assess the facility-specific environmental impacts of a generic enforcement order unrelated to license renewal, MCE ignores 10 C.F.R. § 51.10(d), which provides that Commission enforcement orders under Subpart B of Part 2 are “not subject to Section 102(2) of NEPA.” 10 C.F.R. § 51.10(d). Contention 1 thus constitutes a

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<sup>11</sup> Consistent with 10 C.F.R. § 54.21, Ameren conducted an integrated plant assessment (“IPA”) for Callaway that identified the systems, structures and components subject to an aging management review, and described the programs and inspections for managing aging effects at Callaway. ER at 3.2, 3.3. As explained in the ER, the IPA did not identify a need to undertake any major refurbishment or replacement actions, nor any other facility modifications associated with license renewal that would affect the environment or plant effluents. Id. at 3.2.

collateral attack on the Commission's rules, which is not permissible in this or any other proceeding. 10 C.F.R. § 2.335.

In sum, to grant MCE's request to require a NEPA analysis for enforcement orders unrelated to license renewal would undercut the NRC's regulatory oversight process and would expand the scope of license renewal proceedings beyond the Commission's intentions.

Accordingly, Contention 1 is neither within the scope of the proceeding nor material to the findings that the NRC must make.

b. Contention 1 Does Not Demonstrate Any Genuine Dispute of Material Fact or Law with the Application

Contention 1 does not demonstrate any genuine material dispute with the Application, as required by 10 C.F.R. § 2.309(f)(1)(vi). Apart from its misinterpretation of 10 C.F.R. § 51.52(c)(2), MCE's only argument appears to be that the new measures required by Order EA-12-049 "may affect the degree to which the environment is protected against the impacts of beyond-design-basis accidents during the license renewal term." Pet. at 6. But here, the Callaway ER includes Ameren's analysis of severe accident mitigation alternatives ("SAMA"), as required by 10 C.F.R. § 51.53(c)(3)(ii)(L),<sup>12</sup> which MCE nowhere challenges. See ER at 4.20, Att. F. MCE does not identify any deficiency in this analysis. MCE does not identify any potentially cost-beneficial SAMA that has been omitted from this analysis, identify any error in that analysis, or provide any explanation how Order EA-12-049 could change whether any

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<sup>12</sup> As the Commission has explained,

Mitigation alternatives, or "SAMAs," refer to potential safety enhancements intended to reduce the risk of severe accidents. The NRC's current Generic Environmental Impact Statement for license renewal provides a generic and bounding analysis of potential severe accident impacts, encompassing all existing plants. The SAMA analysis is a site-specific analysis focusing on potential additional mitigation measures that could be implemented to *further* reduce severe accident risk (probability or consequences). The analysis by practice has been a cost-benefit analysis, examining whether particular hardware or procedural changes may be cost-beneficial to implement, given the degree of risk reduction that reasonably could be expected from the change.

NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), CLI-12-05, 75 N.R.C. \_\_\_, slip op. at 27 (Mar. 8, 2012) (emphasis in original) (footnote omitted).

SAMA is considered cost-beneficial. Contention 1 does not even mention the SAMA analysis in Ameren's ER and thus fails to present any genuine dispute with the Application. Further, the fact that the NRC is requiring certain activities outside of license renewal to improve safety (and without regard to cost) will only reduce severe accident risk, and such a reduction in baseline risk would not make any additional SAMAs cost beneficial. Because "the goal [of SAMA analysis] is only to determine what safety enhancements are cost-effective to implement,"<sup>13</sup> Order EA-12-049 is immaterial to the analysis.

Further, to the extent that MCE may perhaps be suggesting that Order EA-12-049 must be addressed just because it is relevant to severe accident impacts during the renewal term (see Pet. at 6), its contention impermissibly challenges the NRC's generic conclusion in the GEIS that severe accident risk is small for all plants.

. . . NRC SAMA analyses are not a substitute for, and do not represent, the NRC NEPA analysis of potential impacts of severe accidents. The NRC's GEIS for license renewal provides a generic evaluation of severe accident impacts and the technical basis for the NRC's conclusion that "the probability-weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts from severe accidents are small for all plants." . . . Because the GEIS provides a severe accident impacts analysis that envelops the potential impacts at *all* existing plants, the environmental impacts of severe accidents during the license renewal term already have been addressed generically in bounding fashion."

Pilgrim, CLI-10-11, 71 N.R.C. at 316 (emphasis in original) (footnote omitted).

c. Contention 1 Lacks Factual or Expert Support

MCE vaguely asserts that that "[t]he facts supporting this contention are found in the Environmental Report and Order EA-12-049 and are described above." Pet. at 6. However, neither the ER nor Order EA-12-049 support Contention 1 or the relief MCE seeks, and do not provide the "expert opinions" required to satisfy 10 C.F.R. § 2.309(f)(1)(v). A mere reference to

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<sup>13</sup> Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station), CLI-10-11, 71 N.R.C. 287, 317 (2010).

documents, absent further specification of their support for the contention, does not provide an adequate basis for a contention. Baltimore Gas & Electric Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 N.R.C. 325, 348 (1998). MCE does not identify any expert opinion, document, reference, or other source supporting any claimed deficiency in the ER. MCE thus fails to provide the requisite factual or expert support for Contention 1.

Moreover, even if Order EA-12-049 were somehow within the scope of this proceeding (which it is not), MCE's assumption that the Order will result in modifications to the facility causing environmental impacts during the period of extended operation is, at this juncture, nothing more than unsupported speculation. As previously noted, each individual licensee's proposed compliance plan is not due until 2013, and preparation of any compliance plan will depend largely on the "acceptable approach" to be identified in the NRC's final Interim Staff Guidance, which is scheduled to be issued in August 2012. 77 Fed. Reg. at 16,092. Further, while the activities eventually proposed can be expected to reduce severe accident risk (a topic already generically determined to be small for all plants), there is no reasonable expectation that these activities would result in any further environmental impacts during the period of extended operation.

2. Contention 2 (Status of Compliance with Post-Fukushima Orders) Is Inadmissible

Similar to Contention 1, Contention 2, which alleges that the ER violates 10 C.F.R. § 51.45(d) by failing to describe the status of Ameren's compliance with NRC post-Fukushima orders and requests for additional information (Pet. at 7-8), should not be admitted because it raises issues outside the scope of the proceeding, contrary to 10 C.F.R. § 2.309(f)(1)(iii). Further, Contention 2 does not demonstrate any genuine dispute with the Application on any material issue of fact or law, or raise any issue material to the findings that the NRC must make,

in contravention of 10 C.F.R. § 2.309(f)(1)(iv), (vi). Finally, Contention 2 is not supported by any relevant facts or expert opinion, thus failing to satisfy 10 C.F.R. § 2.309(f)(1)(v). The contention is therefore inadmissible.

a. Contention 2 Is Outside the Scope of the Proceeding

Like Contention 1, Contention 2 rests entirely on a misinterpretation of the Commission's license renewal and environmental regulations and falls squarely outside the permissible scope of this proceeding. 10 C.F.R. § 51.45(d) provides that:

The environmental report shall list all Federal permits, licenses, approvals and other entitlements which must be obtained in connection with the proposed action and shall describe the status of compliance with these requirements. The environmental report shall also include a discussion of the status of compliance with applicable environmental quality standards and requirements including, but not limited to, applicable zoning and land-use regulations, and thermal and other water pollution limitations or requirements which have been imposed by Federal, State, regional and local agencies having responsibility for environmental protection. The discussion of alternatives in the report shall include a discussion of whether the alternatives will comply with such applicable environmental quality standards and requirements.

10 C.F.R. § 51.45(d) (emphasis added). None of the post-Fukushima orders or information requests can be characterized as approvals that must be obtained “in connection with the proposed action.”

Nor is there even the slightest validity to MCE's argument that because the post-Fukushima orders and RFI are mandatory and “necessary to provide adequate protection to public health,” “they constitute federal requirements that must be identified in the Environmental Report,” and “the Environmental Report must discuss the status of Ameren's compliance with these requirements” as well as any modifications proposed in response to the RFI. Pet. at 9. This assertion fallaciously attempts to link the generically applicable requirements of the post-Fukushima enforcement orders with the ER's required discussion of compliance with federal

approvals related to the proposed Callaway license renewal. The requirement that an applicant include in the ER the status of compliance with federal approvals to be obtained “in connection with the proposed action” (10 C.F.R. § 51.45(d)) refers only to the proposed renewal of the applicant’s license. The status of an applicant’s compliance with generic NRC enforcement orders and requests for information (“RFI”) wholly unrelated to license renewal has no place in the ER because, as the regulations state, “environmental reports prepared under § 51.53(c) need not discuss issues not related to the environmental effects of the proposed action and its alternatives.” 10 C.F.R. § 51.45(c). For the same reason, these enforcement actions have no bearing on “applicable environmental quality standards and requirements.” *Id.* § 51.45(d). The Commission’s post-Fukushima requirements are neither environmental quality standards nor alternatives to the proposed action. Moreover, the requirements imposed by Commission enforcement proceedings are not subject to a NEPA analysis. *See id.* § 51.10(d). Therefore, because Contention 2 addresses matters unrelated to the proposed Callaway license renewal, it falls outside the scope of this proceeding and constitutes an impermissible collateral attack on the Commission’s regulations.

b.       Contention 2 Does Not Demonstrate Any Genuine Dispute with the Application or Raise Any Issue Material to the Findings that the NRC Must Make

Even if Contention 2 were within the scope of the proceeding (which it is not), it fails to demonstrate any issue genuine dispute with the application or raise any issue material to the findings that the NRC must make. MCE does not identify any analysis in the ER that would be affected by the post-Fukushima orders and information requests. MCE asserts that this information “bears on the environmental impacts of the Callaway nuclear plant during the license renewal term, including consideration of alternatives to avoid or mitigate the adverse

environmental impacts of beyond design basis accidents” (Pet. at 9), but MCE provides no explanation how the post-Fukushima orders and information requests could cause any greater impacts than those assessed in bounding fashion the GEIS, or how those orders and information requests could materially affect the conclusions in ER on whether any SAMAs are cost beneficial. Once more, MCE does not even refer to the SAMA analysis and does not challenge any of its conclusions.

c. **Contention 2 Lacks Factual or Expert Support**

MCE alleges that factual support for Contention 2 may be found in the ER, Order EA-12-049 and the RFI. Pet. at 10. None of these documents provide factual or expert support for Contention 2 or the relief sought by MCE. MCE thus fails to adduce facts or expert opinion in support of Contention 2, in contravention of 10 C.F.R. § 2.309(f)(1)(v). MCE does not identify any expert opinion, document, reference, or other source supporting any claimed deficiency in the ER.

3. **Contention 3 (Wind Energy Alternative) is Inadmissible**

MCE’s third Contention is inadmissible because it fails to raise an issue material to the scope of the proceeding and fails to demonstrate the existence of a genuine dispute on a material issue. MCE asserts that the Environmental Report “dismisses and refuses to consider the relative merits of the reasonable energy alternative of wind energy operating in the Midwest Independent Transmission System Operator (‘MISO’) grid.” Petition at 10. As discussed below, MCE makes no showing that the impacts of license renewal are such that preserving Callaway as an option should not be within the range of available alternatives, and MCE fails to raise a genuine dispute because it identifies no particular deficiency in Ameren’s discussion of these topics in the ER or any need for further analysis.

- a. Contention 3 fails to raise an issue material to the scope of the proceeding

To be sure, the NRC's rules require license renewal applicants to discuss the environmental impacts of a proposed action and compare them to impacts of potential alternatives. 10 C.F.R. § 51.53(c)(2). The requirement is consistent with the NRC's duties under the National Environmental Policy Act ("NEPA"), which requires agencies to include a statement on "alternatives to the proposed action." 42 U.S.C. § 4332(2)(C)(iii).

The discussion of alternatives shall be sufficiently complete to aid the Commission in developing and exploring, pursuant to section 102(2)(E) of NEPA, "appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

10 C.F.R. § 51.45(b)(3). An applicant's duty to consider alternatives is not all-encompassing, however, and is instead constrained by a rule of reason.<sup>14</sup> And in the context of license renewal, in particular, the NRC has limited its role in considering energy alternatives to determining whether the impacts of license renewal are so undesirable that even preserving it as an option would be unreasonable.

In promulgating its license renewal rules, the Commission considered comments from States expressing concern that NRC decisions on alternative energy sources might infringe upon and interfere with State decision-making on energy planning. 61 Fed. Reg. at 28,471. To avoid interfering with State energy-planning decisions, the NRC defined the purpose of license renewal as providing an option that allows for power generation capability beyond the term of a current nuclear plant operating license to meet future generating needs, as such needs may be determined by the State, utility, and, where authorized, Federal (other than NRC) decision-makers. *Id.* at

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<sup>14</sup> *Seabrook*, CLI-12-05, 75 N.R.C. \_\_\_, slip op. at 48, citing *NRDC v. Morton*, 458 F.2d 827, 834, 837, 838 (D.C. Cir. 1972) ("NEPA requires consideration of "reasonable" alternatives, not all conceivable ones."). The rule of reason governs both which alternatives the agency must discuss and the extent to which it must discuss them. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195 (D.C. Cir.), cert. denied 502 U.S. 994 (1991).

28,472. Consistent with this limited purpose, the NRC specifically defined the standard for considering energy alternatives as one where the NRC must determine if the adverse impacts of license renewal are so great that preserving the option of license renewal for energy planning decision-makers would be unreasonable. Id. Under this standard, the Commission explained:

Given the uncertainties involved and the lack of control that the NRC has in the choice of energy alternatives in the future, the Commission believes that it is reasonable to exercise its NEPA authority to reject license renewal applications only when it has determined that the impacts of license renewal sufficiently exceed the impacts of all or almost all of the alternatives that preserving the option of license renewal for future decision makers would be unreasonable.

Id. at 28,473.

MCE fails entirely to address this decisional standard of the license renewal proceeding and, as a result, fails to demonstrate the materiality of the wind energy alternative scenario it advocates. MCE provides no indication that its postulated wind energy alternative would be environmentally superior to Callaway's continued operation. MCE's only statement even remotely relating to the issue alleges without elaboration or support "[w]ind energy also has the relative benefits that it is less dangerous than renewed operation of Callaway, depends on a renewable energy source and would save millions of gallons of water now used by Callaway every day." Petition at 10. The Makhijani Declaration makes a similarly cursory statement about wind energy eliminating water pollution impacts and being "less dangerous" than continued operation of Callaway, without any support or discussion of the environmental impacts associated with wind facilities. Makhijani Declaration at 15. In fact, as Ameren's analysis in the Environmental Report and the NRC's GEIS state, wind facilities require the commitment of very large areas of land<sup>15</sup> (and result in additional impacts, including to birds,

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<sup>15</sup> After alleging that "Ameren could easily build or contract for replacement capacity in the MISO region," Dr. Makhijani incorrectly assumes that only "2300 MW of wind of the average (high quality) resources... would

noise and aesthetics).<sup>16</sup> ER at § 7.2.1.5, pp. 15-16.; NUREG-1437 § 8.3.1. MCE provides no information to the contrary and no basis for demonstrating that its wind power scenario is such an environmentally-preferable alternative that it renders continued operation of Callaway an unreasonable option to preserve.

Moreover, Ameren's Environmental Report analyzes the impacts of gas-fired generation, coal-fired generation, construction of new nuclear plants, and purchased power as reasonable alternatives to replace the baseload capacity of Callaway (ER §§ 7.2.2.1-7.2.2.4), and its analysis of the purchased power alternative incorporates the NRC's discussion of a number of energy alternatives in Chapter 8 of the GEIS. See ER at § 7.2.2.4, pp. 26-27. This discussion shows that Callaway license renewal is an entirely reasonable option within the range of alternatives that state decision-makers would consider. Without any basis demonstrating that license renewal is beyond the range of alternatives that energy planning decision-makers would consider, MCE's identification of merely another alternative is immaterial (and would remain so even if MCE had demonstrated wind power's feasibility to replace Callaway and environmental superiority – which it did not).

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entirely replace Callaway generation.” Makhijani Declaration at 11-12 (emphasis added). In fact, because energy replacement is not the same as capacity replacement, to provide the same level of regulatory capacity to meet the resource adequacy requirements of MISO, replacement of Callaway would require nearly 8000MW of wind energy. This is because MISO credits wind with only “just under 15 percent” of its nameplate capacity for resource adequacy purposes. See Makhijani Declaration at 10 & n.28 (citing MISO Planning Year 2012 LOLE Study Report (Nov. 2011)). This amount (8000MW) is greater than the total wind capacity in all of the MISO region was in 2009, according to Table 1 in Dr. Makhijani's Declaration. See Makhijani Declaration at 11. Moreover, as discussed in the ER, in “open, flat terrain, a utility-scale wind plant requires about 60 acres per megawatt of installed capacity.” See ER § 7.2.1.5, p. 15. Therefore, 8,000MW of wind capacity would require nearly 480,000 acres (1942 km<sup>2</sup> or 750 square miles) of land. This land acreage would be significantly larger than the total land area of St. Louis County and more than ninety times larger than the land area of the entire Callaway site.

<sup>16</sup> These impacts do not take into account the additional construction impacts that would result from a standby fossil fueled plant made necessary by wind power's intermittency. See ER § 7.2.1, p. 6 (“because of the intermittent nature of wind and solar power in the region, such combinations would require building fossil fueled plants with the full 1200 MWe capacity to replace Callaway Unit 1 when the solar or wind power is unavailable, as well as the solar and wind powered replacement units. As a result, this option would incur the full construction impacts associated with building a 1200 MWe baseload coal or gas-fired plant. . .”).

- b. MCE fails to demonstrate the existence of a genuine dispute on a material issue

In Contention 3, MCE alleges that the Environmental Report's analysis of wind power as an unsuitable alternative to continued operation of Callaway is flawed because it is comprised of three assumptions with which MCE disagrees: (i) "Ameren has unreasonably examined wind and other renewable alternatives to nuclear license extension as if Ameren were an electrical island separate from the MISO grid;" (ii) Ameren incorrectly assumes "that storage or full standby fossil fuel replacement capacity would be needed for wind to reliably replace Callaway energy;" and (iii) "Ameren incorrectly assumes that energy from Callaway will be constantly available during the license term while wind power is merely 'intermittent.' In reality, however, all power stations have planned and unplanned outages during which the grid fills in." Petition at 11; see also Makhijani Declaration at 3.

At the core of MCE's Contention 3 is an allegation that nuclear power cannot itself be considered baseload power and, consequently, wind power should not have to be capable of producing baseload power to constitute a reasonable alternative to relicensing. See Makhijani Declaration at 7 ("nuclear reactors cannot *a priori* be regarded as baseload sources that can supply baseload electricity for two or more decades...the requirement that alternatives should clear a hurdle that nuclear power can no longer clear is unreasonable"). However, this attack on Ameren's selected project purpose of generating baseload power fails to identify any genuine dispute on a material issue, contrary to the requirement of 10 C.F.R. § 2.309(f)(1)(vi). See, e.g., South Carolina Electric & Gas Co. (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-01, 72 N.R.C. 1, 21 (2010) (affirming holding that contention which constituted an impermissible challenge to an applicant's selected project purpose to generate baseload power failed to identify a genuine dispute with the application).

While NEPA dictates that federal agencies must consider alternatives to a proposed action, there are limits upon the range of alternatives that must be considered. The Commission repeatedly has held that its EISs (and applicants' environmental reports) "need only discuss those alternatives that are reasonable and 'will bring about the ends' of the proposed action." Seabrook, CLI-12-05, 75 N.R.C. \_\_\_, slip op. at 49, citing Hydro Resources Inc., (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 N.R.C. 31, 55 (2001) (quoting Citizens Against Burlington, 938 F.2d at 195). See also Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 N.R.C. 135, 144-45 (1993) (the NRC must only consider the range of alternatives "'reasonably related' to the scope and goals of the proposed action").

Furthermore, in defining the ends of a proposed action, where a federal agency is not a project's sponsor, the "consideration of alternatives may accord substantial weight to the preferences of the applicant and/or sponsor." City of Grapevine v. DOT, 17 F.3d 1502, 1506 (D.C. Cir.), cert. denied, 513 U.S. 1043 (1994). The Commission follows this practice with its licensing actions. Seabrook, CLI-12-05, slip op. at 49 ("We give substantial weight to the preferences of the applicant and/or sponsor.") (quotation and citation omitted). See also Hydro Resources, CLI-01-4, 53 N.R.C. at 55; Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-04-22, 60 N.R.C. 125, 146 (2006); Nuclear Management Co., LLC (Monticello Nuclear Generating Plant) LBP-05-31, 62 N.R.C. 735, 753 n.83 (2005), aff'd, CLI-06-06, 63 N.R.C. 161 (2006).

As reflected in the ER, Ameren's goal in applying for license renewal is to maintain Callaway as a source of baseload power.

Renewal of the operating license would give Ameren and the State of Missouri the option of relying on Callaway to provide baseload power beginning in 2024 and throughout the period of extended operation.

ER § 3.0, p. 1 (emphasis added). For this reason, “Ameren evaluated alternative generating technologies to identify candidate technologies that would be capable of replacing the net baseload capacity of Callaway Unit 1.” ER § 7.2.1, p.6 (emphasis added). “Ameren believes that any alternative would be unreasonable if it did not include replacing the baseload capacity of Callaway Unit 1.”<sup>17</sup> ER § 7.1, p. 3 (emphasis added).

“‘Baseload power’ generates ‘energy intended to continuously produce electricity at or near full capacity, with high availability.’” Seabrook, CLI-12-05, slip op. at 50 n.223 (citing Envtl. Law & Policy Ctr. v. NRC, 470 F.3d 676, 679 (7th Cir. 2006)). The U.S. Court of Appeals for the Seventh Circuit has approved the Commission’s adoption of baseload energy generation as the purpose of a reactor licensing action. Envtl. Law & Policy Ctr., 470 at 684. The Court explained that the baseload power generation “purpose was broad enough to permit consideration of a host of energy generating alternatives.” Id.

To demonstrate a genuine dispute under 10 C.F.R. § 2.309(f)(1)(vi), a petitioner must show that its “proposed alternative would satisfy the purpose of the applicant’s proposed action.” Seabrook, CLI-12-05, slip op. at 54 (footnote omitted). Therefore, for “wind power to merit detailed consideration as an alternative to renewing the license for a nuclear power plant, that alternative should be capable of providing ‘technically feasible and commercially viable’ baseload power during the renewal period.” Seabrook, CLI-12-05, slip op. at 55. “To proffer an

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<sup>17</sup> In its Environmental Report, Ameren examined wind energy as a potential alternative to license renewal, but rejected that option on the ground that wind power, at least in its current and reasonably foreseeable state, is incapable of producing baseload power. See ER § 7.2.1.5, p. 17. MCE and Dr. Makhijani do not contest this conclusion, but instead argue that wind energy should not be required to be capable of producing baseload power because nuclear facilities are subject to forced outages. See Makhijani Declaration at 7 (¶ 3.12).

admissible ‘energy-alternatives’ contention, therefore, Petitioners must provide factual support or expert opinion sufficient to demonstrate a genuine dispute as to whether an alternative energy source – or combination of sources – can meet that standard.” FirstEnergy Nuclear Operating Co. (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-08, 75 N.R.C. \_\_\_, slip op. at 5, 9 (Mar. 17, 2012). MCE has not even alleged that wind power is capable of producing baseload power during the renewal period, much less provided support for such a claim, and therefore has not submitted an admissible contention.

Instead of demonstrating a genuine dispute on a material issue, MCE alleges that because nuclear facilities are subject to planned and unplanned outages they cannot be considered as sources of baseload power. Makhijani Declaration at 3 & 7; Petition at 11. A significant portion of the Declaration of Dr. Makhijani accompanying Contention 3 is devoted to cataloguing instances of unplanned outages that have occurred at various nuclear power plants throughout the world, including as a result of the Fukushima Daiichi incident, a flood in Nebraska, and an earthquake in Virginia. See Makhijani Declaration at 4-8. Because nuclear power plants have experienced such outages in addition to planned outages for refueling and maintenance, MCE and Dr. Makhijani allege that such plants cannot be considered sources of baseload power.

The problem with this accusation is that it would negate the possibility of any form of energy generation being capable of producing baseload power. For, as even Dr. Makhijani acknowledges, “all power plants, including nuclear power plants, have unplanned outages.” Makhijani Declaration at 4. Indeed, conventional power plants of all types experience unplanned outages because of mechanical or other malfunctions, and any generation source has the potential to be subjected to damage or unplanned outages, including as a result of the extreme and extremely rare sorts of natural disasters referenced by Dr. Makhijani. This includes wind

energy<sup>18</sup> as well as fossil fuel plants. In fact, the MISO Planning Year 2012 LOLE Study Report which Dr. Makhijani references and relies upon (see Makhijani Declaration at 22) shows that nuclear generation has the lowest Equivalent Forced Outage Rate Demand of the conventional generating technologies, based on NERC data from 2005-2009).<sup>19</sup> Carried to its logical end, MCE and Dr. Makhijani's complaint that nuclear plants should not be considered baseload sources would thus necessarily apply to any form of energy generation.

Such a claim fails to raise a genuine dispute with Ameren's Application on a material issue. The NRC has repeatedly accepted the purpose of providing baseload power as an acceptable goal of its applicants (and one that would be met by the construction or continued operation of a nuclear power plant). See, e.g., Seabrook, CLI-12-05, slip op. at 53-55; Davis-Besse, CLI-12-08, slip op. at 5 & 9-10. The Environmental Report plainly identifies Callaway as a baseload power source and MCE has not raised any dispute with this characterization, other than to note that Callaway, like all power plants, has been subject to some unplanned outages during its long operating history. See ER § 7.2, p. 5 ("Callaway Unit 1 is a baseload facility with a net capacity of 1,190 MWe, and in 2008 generated approximately 9.4 terawatt-hours of electricity."). Ameren's ER indicates that the industry average annual capacity factor for a baseload plant such as a nuclear plant is about 90 percent or more.<sup>20</sup> ER § 7.2.1.5, p.15. MCE and Dr. Makhijani do not dispute this assertion. To the contrary, Dr. Makhijani himself assumes

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<sup>18</sup> See, e.g., December 9, 2011 news report of wind turbine that erupted in flames as a result of storm in Scotland (<http://www.bbc.co.uk/news/uk-16115139>); July 6, 2011 article reporting that severe thunderstorms damaged six wind turbines in Minnesota (<http://minnesota.publicradio.org/display/web/2011/07/06/lincoln-county-storm/>).

<sup>19</sup> MISO Planning Year 2012 LOLE Study Report at 8, available at <https://www.midwestiso.org/Library/Repository/Study/LOLE/2012%20LOLE%20Study%20Report.pdf>.

<sup>20</sup> The overall annual capacity factor for U.S. nuclear power plants in 2011 was 89 percent. Nuclear Energy Institute, U.S. Nuclear Industry Capacity Factors (1971-2011). (<http://www.nei.org/resourcesandstats/documentlibrary/reliableandaffordableenergy/graphicsandcharts/usnuclearindustrycapacityfactors/>). The three-year average capacity factor for Callaway for 2008 through 2010 was 91.4%. See [http://www.nei.org/filefolder/Missouri\\_Fact\\_Sheet.pdf](http://www.nei.org/filefolder/Missouri_Fact_Sheet.pdf).

that Callaway warrants assignment of a 90-percent capacity factor. See Makhijani Declaration at 12 n.33. Plants with such capacity factors should certainly be considered as generating energy intended to continuously produce electricity at or near full capacity, with high availability. Seabrook, CLI-12-05, slip op. at 50 n.223 (citing Envtl. Law & Policy Ctr., 470 F.3d at 679). Neither MCE nor Dr. Makhijani alleges facts sufficient to dispute Callaway's status as a source of baseload power.

Indeed, most of the allegations contained in the Makhijani Declaration about nuclear outages have no relation to Callaway. No explanation is provided of how the decisions of policymakers in Germany and Japan, for example, regarding the use of nuclear power in those countries could possibly compromise Callaway's status as a source of baseload power. Simply identifying that Callaway has experienced some unplanned outages during its long history of operation (see Makhijani Declaration at 7-8), a fact which has not been denied by Ameren, in no way disputes the conclusions in the ER that Callaway is a source of baseload power.

Failing to identify a genuine dispute with the Application's characterization of Callaway as a source of baseload power, Dr. Makhijani and MCE allege that Ameren's analysis of the wind power alternative is faulty because Ameren assigned a zero capacity value to wind energy. See Makhijani Declaration at 9 ("Ameren has assumed that zero capacity credit should be allocated to renewables") & 10 ("the assignment of zero capacity value to wind and solar energy by Ameren is technically incorrect and even contradicts some of its own literature").<sup>21</sup>

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<sup>21</sup> Dr. Makhijani mischaracterizes the Application. The statement in the Application to which Dr. Makhijani refers (see Makhijani Declaration at 9, quoting from ER § 7.2.1, p. 6) was not addressing the capacity credit given to wind in the MISO, but rather analyzing the impacts that would occur if a combination of wind and fossil generation were used to replace Callaway's baseload capacity. What the Environmental Report actually states is that, because wind and solar are intermittent and have a capacity factor of only 35 percent and 44 percent respectively, wind and solar alone could not be relied upon to replace the baseload capacity of Callaway. Instead, wind or solar power would need to be coupled with standby coal or gas-fired capacity (necessitating the

Such an allegation fails, however, to raise a genuine material dispute with the Application. As Dr. Makhijani pointed out, the 2012 capacity value that MISO credits to wind is just under 15 percent. Makhijani Declaration at 10. With this limited capacity credit, the 2300 MW of wind suggested by Dr. Makhijani (id. at 11-12) would only provide 345 MW of capacity credit, which is far short of the nearly 1200 MW capacity of Callaway. Notwithstanding its inadequacy as a baseload resource, without some complimentary resource (e.g., gas, storage, etc.), the 2300 MW of wind would fail as a replacement of Callaway's capacity.

Further, in determining whether wind could be considered a reasonable alternative means of providing baseload power, Ameren accorded to wind energy a capacity factor of 35 percent. See ER § 7.2.1, p. 6 (“wind or solar units would only achieve a capacity factor of about 35 percent or 44 percent (for a concentrating thermal system), respectively”); ER § 7.2.1.5. p. 15 (“average annual capacity factors for wind power systems are relatively low (22 to 47 percent)...The average capacity factor for existing wind systems in Missouri is 35 percent”).<sup>22</sup> It was only after considering such a capacity factor that Ameren determined that “the capacity factor and reliability for wind energy are inadequate to provide baseload power....For these

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construction impacts associated therewith) and would only reduce that amount of time that those fossil plants are operated. See ER § 7.2.1, p. 6 (“[Because] wind or solar units would only achieve a capacity factor of about 35 percent or 44 percent (for a concentrating thermal system), respectively . . . [t]he fossil-fired units would have to operate at least 56 percent of the time”). The mischaracterization of Ameren’s Application does not raise a genuine dispute on a material issue and is alone sufficient to render Contention 3 inadmissible. A contention is to be rejected if, as here, it inaccurately describes the applicant’s proposed action or misstates or ignores the content of an application and supporting documents. See, e.g., Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 N.R.C. 2069, 2076 (1982); Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-82-107A, 16 N.R.C. 1791, 1804 (1982); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 N.R.C. 1423, 1504-05 (1982).

<sup>22</sup> As indicated by the MISO Planning Year 2012 LOLE Study Report which Dr. Makhijani references, MISO credits wind with an Effective Load Carrying Capacity (“ELCC”) value of 14.7%. MISO Planning Year 2012 LOLE Study Report, supra note 19, at 19. If Ameren had used this value in the Environmental Report, the assumed amount of installed wind energy needed to replace Callaway (and associated environmental impacts) would have doubled. As previously discussed, if Ameren had used the ELCC value to calculate the amount of wind needed to replace Callaway, the resulting 8,000 MW would require nearly 2,000 square kilometers of land. See supra note 15.

reasons, wind power is not a feasible alternative for baseload power in Missouri.” ER § 7.2.1.5, p. 17. MCE and Dr. Makhijani fail to address or challenge this conclusion in the Application.

While failing to acknowledge Ameren’s use of a 35 percent capacity factor in its analysis of wind power, Dr. Makhijani suggests that a 40 percent capacity factor might be achieved if wind turbines were located at certain sites within the MISO region. See Makhijani Declaration at 11. All of the sites referenced would have to utilize 100 meter towers to achieve the modestly-increased capacity factor sought by Dr. Makhijani. Id. at Table 2.

There are at least three pitfalls that prevent Dr. Makhijani’s argument from identifying a genuine dispute with Ameren’s Application. First, MCE has not shown that a reasonable amount of wind is a legitimate capacity replacement of Callaway. Relying on MCE’s proposal of 2300 MW of wind nameplate capacity would fall well short of replacing the nearly 1200 MW capacity credit of Callaway. Without a supplemental resource to provide additional capacity credits, it would take an unreasonable amount, 8000 MW, of wind to provide equivalent capacity credit. As discussed below, even if wind had an equal capacity credit (which it does not), it would still need a complementary resource to be considered as a baseload alternative.

Second, MCE fails to support any claim that wind power is a feasible alternative for baseload power in Missouri. Even with a 40 percent capacity factor, wind would not be considered baseload generation. Indeed, Ameren’s analysis of the alternative of solar power assumed a capacity factor of 44 percent<sup>23</sup> (4 percent greater than the 40 percent Dr. Makhijani asserts could be achieved for wind power) and still concluded that solar power is not a feasible alternative for baseload power to replace Callaway. See ER §§ 7.2.1, pp. 6-7 & 7.2.1.5, p. 18.

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<sup>23</sup> See ER § 7.2.1, p. 6 (“wind or *solar* units would only achieve a capacity factor of about 35 percent or 44 percent (for a concentrating thermal system), respectively”) (emphasis added).

MCE and Dr. Makhijani have not identified any fault with that analysis nor made any showing that a capacity factor of 40 percent would make wind a reasonable alternative to the baseload generation of Callaway.

Third, Dr. Makhijani provides no information indicating the 100-meter-tower technology that Dr. Makhijani assumes would be a prerequisite to achieving the 40 percent capacity factor<sup>24</sup> is technically feasible and commercially viable. “As a general matter, a ‘reasonable’ energy alternative—one that must be assessed in the environmental review associated with a license renewal application—is one that is currently commercially viable, or will become so in the near term.” Seabrook, CLI-12-05, slip op. at 53-54. Since MCE has not provided any support for a claim that 100 meter wind towers are technically feasible or commercially available in the near term, it has failed to submit an admissible contention. Id. at 55. Ameren is aware of few instances where development of such enormous towers is even being explored, and MCE has certainly not identified any commercially available deployment. NEPA does not require discussion of alternatives deemed only remote and speculative possibilities. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978). An EIS cannot be found wanting simply because the agency failed to include every alternative device and thought conceivable to the mind of man. Id. The possibility of future development of new or altered types of generation technology is exactly the type of remote and speculative alternative that the Courts have rejected. See Carolina Env'tl. Study Group v. United States, 510 F.2d. 796, 800 (D.C. Cir. 1975); Morton, 458 F.2d at 837-38.

Failing to establish a genuine dispute with the conclusion in Ameren’s Application that Callaway provides baseload power while wind power is too intermittent with insufficient

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<sup>24</sup> See Makhijani Declaration at 11, Table 2 (“Wind energy potential of some states fully or mainly in MISO only for sites with capacity factor greater than 40 percent, at 100 meters”).

capacity or reliability to do so, MCE alleges that the Environment Report is faulty because Ameren examined wind and other renewable alternatives “as if Ameren were an electrical island separate from the MISO grid.” Petition at 11 & Makhijani Declaration at 3. Specifically, MCE alleges that Ameren “should examine the role of the grid in providing supply during the unplanned outages of nuclear and the variability of wind. Therefore, under any scenario, all electricity generation energy sources must be considered in the context of the grid.” Makhijani Declaration at 3. The crux of the allegation seems to be that Ameren could rely on its own generation resources or resort to purchased power to make up the lost capacity that would result from the unavailability of installed wind energy, with the specific choices “depend[ing] on the circumstances of the outage and the location of the various resources in the grid...[because in all types of cases], utilities rely on the grid during their times of unavailability to maintain electricity service to customers.” Makhijani Declaration at 9, 11, 15. Dr. Makhijani further posits that natural gas as a generation source would be available to compensate for the variability of wind power when needed. See Makhijani Declaration at 14. From a glance at natural gas capacity in three states within the MISO region, he concludes that there “is clearly more than enough excess generating capacity in the MISO system to allow for the needed transactions to be made to keep supply reliable if wind generation fully replaces Callaway generation on an annual basis.” Id.

Once again, however, MCE and Dr. Makhijani fail to identify a genuine dispute with Ameren’s Application on a material issue because they either ignore or misrepresent the analysis contained therein. Ameren’s Application in no way implies that Ameren is “an electrical island separate from the MISO grid.” Petition at 11. Instead, the Application specifically states that Ameren is a member of MISO and describes the role played by that entity, including addressing system reliability requirements and upgrading transmission lines. See ER § 7.2.1.3, p. 12. In

addition, Ameren’s Application describes how Ameren purchases power from the MISO grid “to meet system demands” (including, for example, supplying power during outages sustained by Callaway). ER § 7.2.1.3, p. 13.

Moreover, Ameren analyzed the alternative option of purchasing power to replace the baseload generation of Callaway were its license not renewed.<sup>25</sup> See ER §§7.2.1.3 & 7.2.2.4. It concluded that “additional transmission infrastructure would be needed in the event that Ameren purchases power to replace Callaway Unit 1 capacity” (ER § 7.2.1.3, p. 13) and noted that under the purchase power alternative “environmental impacts would still occur, but they would likely originate from a power plant located elsewhere in [the MISO region].” ER § 7.2.2.4, p. 27. Such impacts would likely be SMALL to MODERATE. Id. Ameren also analyzed whether “baseload power could be provided by an interconnected array of wind farms [presumably within the MISO territory] that are sufficiently separated so that they would not be affected by the same synoptic winds.” ER § 7.2.1.5, p. 16. That analysis showed “that interconnected wind farms may have some advantages over a single large-scale wind farm, but the capacity factor and reliability of interconnected wind farms are inadequate to provide baseload power.” Id. In addition, the Application expressly considered the potential alternative of a natural gas powered plant to replace Callaway’s generation. See ER §§ 7.2.1.1, p. 11 & 7.2.2.1, pp. 22-23 & Table 7.2-1. None of this information is challenged by MCE.

Instead of implying that Ameren is an electrical island separate from the grid, Ameren’s Application includes a straightforward assessment showing that, although the ability to enter into

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<sup>25</sup> This analysis implicitly included the possibility of purchasing power generated by wind energy, as Ameren referenced its existing agreement to purchase a set amount of energy produced by a wind farm in Iowa. ER § 7.2.1.3, p. 13. The Application noted that the source of and technologies that would be used to generate any such purchased power are “speculative,” and it adopted by reference “the GEIS description of the alternative generating technologies as representative of the purchase power alternative.” Id.; see also ER § 7.2.2.4, pp. 26-27.

power purchase agreements exists, the energy generation must still come from somewhere and would result in environmental impacts. And transmission to deliver such power to Ameren's service area would be a significant hurdle. Neither MCE nor Dr. Makhijani acknowledges, much less disputes, this analysis. The failure of MCE to explain why it has a disagreement with Ameren's analysis as set forth in the Application renders Contention 3 inadmissible. See 54 Fed. Reg. at 33,171; Millstone, CLI-01-24, 54 N.R.C. at 358. A contention that does not directly controvert a position taken by the applicant in the license renewal application is subject to dismissal. See Comanche Peak, LBP-92-37, 36 N.R.C. at 384.

To the extent that Dr. Makhijani alleges that there is already existing sufficient natural gas (or any other generation, including wind energy) capacity within the MISO grid available for Ameren to purchase such that there is actually no need for the power that would be generated by Callaway's continued operation,<sup>26</sup> he raises an issue outside the scope of and immaterial to this license renewal proceeding, and impermissibly challenges the Commission's rules.<sup>27</sup> In promulgating its license renewal rules, the Commission determined that "the issue of need for power and generating capacity will no longer be considered in NRC's license renewal decisions." 61 Fed. Reg. at 28,468. See also id. at 28,472 ("the NRC will neither perform

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<sup>26</sup> See, e.g., Makhijani Declaration at 14 ("Table 3 shows that [sic] the natural gas capacity in five Midwestern states, three states of which wholly or mainly in the MISO region... The weighted average capacity factor for natural gas generation in these five states in 2010 was just 8.1 percent. An increase in average capacity utilization of just over 3 percent to 11.4 percent in these five states would generate enough electricity to replace Callaway generation").

<sup>27</sup> Even if his claim were within the scope of this proceeding (which it is not), Dr. Makhijani provides no basis to conclude that there is actually any excess of natural gas capacity existing on the MISO grid because he fails to distinguish baseload generation units from peaking units. His assertion that the MISO grid can provide reliable support for wind generation because of the underutilization of gas resources neglects to account for the fact that the referenced gas plants are predominantly peaking resources (as is evidenced by the low capacity factor assigned to such facilities). See also ER § 7.2, p. 6 (noting that Missouri relies on petroleum and gas as fuels for intermediate-load and peaking power). Such resources are needed at time of peak demand. See, e.g., PPL Wallingford Energy LLC v. FERC, 419 F.3d 1194, 1196 (D.C. Cir. 2005) ("'peaking' units [are] intended to run only during times of peak demand or system need"). If they were instead used to replace baseload capacity (putting aside the inefficiencies that would result from using them in such a manner), the resources would not be available to serve peak demand (when wind resources are most likely to be unavailable).

analyses of the need for power nor draw any conclusions about the need for generating capacity in a license renewal review”). As codified, the NRC’s regulations specifically exclude need for power from consideration in a license renewal applicant’s environmental report or the agency’s environmental impact statement. 10 C.F.R. § 51.53(c)(2) (“The [environmental] report is not required to include discussion of need for power”); 10 C.F.R. § 51.95(c)(2) (“The supplemental environmental impact statement for license renewal is not required to include discussion of need for power”). Because Ameren’s Environmental Report is not required to assess the need for power, Dr. Makhijani’s allegation is neither material to, nor within the scope of, the current proceeding. 10 C.F.R. §§ 2.309(f)(1)(iii) & (iv). It also constitutes an impermissible attack upon the Commission’s rules and necessarily must be rejected. 10 C.F.R. § 2.335; Douglas Point, ALAB-218, 8 A.E.C. at 89.

The final faulty assumption alleged by MCE is that Ameren erred in supposing “that storage or full standby fossil fuel replacement capacity would be needed for wind to reliably replace Callaway energy.” Petition at 11. The Petition states without explanation that “[n]either is needed today and will not be needed even as renewables expand under the present renewable mandates in the MISO system.”<sup>28</sup> Id. Dr. Makhijani’s Declaration never explains this statement, but as far as Ameren can determine, it is based solely on Dr. Makhijani’s mistaken assertions, discussed and refuted above, that any wind energy system should not have to be capable of providing baseload power to be considered a reasonable alternative to continued operation of Callaway, and Ameren can simply rely on the grid for replacement power when energy from

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<sup>28</sup> To the extent Dr. Makhijani’s comment intends to suggest that the power generated by Callaway will not be needed during the license renewal period, the Contention raises an issue immaterial to and outside the scope of this license renewal proceeding by impermissibly challenging the Commission’s rules, as discussed above.

wind is unavailable due to wind's intermittency. See, e.g., Makhijani Declaration at 9.<sup>29</sup> However, by shirking the burden of demonstrating that wind energy would be capable of providing baseload power to replace Callaway, MCE and Dr. Makhijani fail to identify any genuine dispute with Ameren's Application on a material issue, as discussed above.

In addition to its blanket allegation that neither standby fossil fuel nor energy storage would be necessary for wind power to replace Callaway, MCE (through the Makhijani Declaration) also alleges specific faults with Ameren's analysis of energy storage systems. Such allegations fail, however, to demonstrate a genuine dispute with the Application, particularly in light of MCE's assertion that such storage would not be necessary for the wind power alternative.

With respect to the impacts of compressed air energy storage ("CAES"), Dr. Makhijani faults the Environmental Report for noting that the air quality impacts of a CAES system would be similar to a natural gas power plant. Makhijani Declaration at 16. Dr. Makhijani misconstrues the intention of the Application's statement. He interprets the statement to mean that the impacts of CAES storage would be quantitatively similar to those from a gas-fired power plant. Id. ("The air quality impacts from CAES per kilowatt-hour delivered are far lower than a natural gas plant."). Instead, the Application uses the term "similar" to illustrate that the kinds of emissions produced by a CAES system would be qualitatively the same as the kinds of emissions produced by a natural gas power plant, since gas must be burned both to heat compressed air and to operate turbines to generate electricity. See ER § 7.2.1.5, p. 17. Dr. Makhijani's mistaken

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<sup>29</sup> Dr. Makhijani asserts that storage capacity would not be necessary until wind has exceeded 20 percent of the generation in the grid. Makhijani Declaration at 12. Dr. Makhijani does not explain or provide any basis for this assertion either, but as far as Ameren can fathom, this statement simply indicates that energy storage would not be required for grid stability when wind provides only a limited amount of energy to the grid. Such a statement has no bearing on whether wind can replace baseload capacity.

interpretation of the Application's analysis is insufficient to demonstrate a genuine dispute on a material issue, and he fails to contest Ameren's conclusions that the air quality impacts of a CAES system would be qualitatively similar to those of a gas plant.

Dr. Makhijani also faults the Environmental Report for characterizing CAES as an "immature technology" and for concluding that there is a limited availability of suitable sites for CAES systems in the region, considering the existence of natural gas storage sites there. Makhijani Declaration at 16-17. Dr. Makhijani makes no showing that the existence of natural gas storage sites in the vicinity of the MISO region is a reliable indicator of the ease of identifying available sites for CAES systems. Indeed, he concedes that the storage pressures required for natural gas and compressed air may be different (Makhijani Declaration at 16 n.49), which indicates that different considerations may dictate what would be a suitable site for each resource. In addition, the Environmental Report simply concluded that "extensive geological studies would be required to determine [the] suitability [of the hard rock caverns and abandoned mines located in Missouri] for CAES applications." ER at § 7.2.1.5, p. 17. Dr. Makhijani does not allege any dispute with such a conclusion and thus does not demonstrate a genuine dispute with the Application with respect to the availability of sites for CAES in Ameren's service area.

In addition, MCE fails to provide any support for asserting that CAES is properly considered a mature technology. Indeed, Dr. Makhijani's mere assertion that natural gas storage sites exist (see Makhijani Declaration at 16-17) in no way demonstrates that CAES, an entirely different system, should be considered a mature technology. He does not dispute the Environmental Report's conclusion that "[a]lthough several CAES plants have been proposed, there are only two CAES plants in operation in the world...and the use of CAES for baseload wind generation has not been demonstrated." ER § 7.2.1.5, p. 17. A technology for which only

two examples exist in the world and which has not been proven for the intended use is hardly mature enough to be considered sufficiently technically available or commercially viable. A license renewal applicant has no obligation to consider alternatives that are nascent or not yet developed. See Carolina Env'tl. Study Group, 510 F.2d. at 800; Morton, 458 F.2d at 837-38; Seabrook, CLI-12-05, slip op. at 56-57.

For all of these reasons, none of MCE's and Dr. Makhijani's allegations present any genuine dispute with Ameren's Application.

#### **IV. SELECTION OF HEARING PROCEDURES**

Commission rules require that the Atomic Safety and Licensing Board designated to rule on the Petition "determine and identify the specific procedures to be used for the proceeding" pursuant to 10 C.F.R. §§ 2.310 (a)-(h). 10 C.F.R. § 2.310. The regulations are explicit that "proceedings for the . . . grant . . . of licenses subject to [10 C.F.R. Part 52] may be conducted under the procedures of subpart L." Id. at § 2.310(a). The regulations permit the presiding officer to use the procedures in 10 C.F.R. Part 2, Subpart G ("Subpart G") in certain circumstances. Id. § at 2.310(d). It is the proponent of the contentions, however, who has the burden of demonstrating "by reference to the contention and bases provided and the specific procedures in subpart G of this part, that resolution of the contention necessitates resolution of material issues of fact which may be best determined through the use of the identified procedures." Id. at § 2.309(g). MCE did not address the selection of hearing procedures in its Petition and therefore has not shown that Subpart G procedures should be used in this proceeding. Accordingly, any hearing arising from MCE's Petition should be governed by the procedures of Subpart L.

**V. CONCLUSION**

For the reasons stated above, the Petition should be denied.

Respectfully Submitted,

/Signed electronically by David R. Lewis/

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Dated: May 21, 2012

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket Nos. 50-483-LR
UNION ELECTRIC CO.	)	
	)	ASLBP No. 12-919-06-LR-BD01
(Callaway Plant, Unit 1)	)	

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the Ameren's Answer Opposing the Missouri Coalition for the Environment's Hearing Request and Petition to Intervene, dated May 21, 2012, was provided to the Electronic Information Exchange for service on the individuals listed below, this 21<sup>st</sup> day of May, 2012.

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