

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY OF THE COMMISSION

In the Matter of:)	
)	
Union Electric Co.)	Docket No. 50-483-LR
)	
(Callaway Plant Unit 1))	

**MISSOURI COALITION FOR THE ENVIRONMENT’S HEARING REQUEST
AND PETITION TO INTERVENE IN LICENSE RENEWAL PROCEEDING
FOR CALLAWAY NUCLEAR POWER PLANT**

I. INTRODUCTION

In accordance with the U.S. Nuclear Regulatory Commission’s (“NRC’s”) hearing notice, 77 Fed. Reg. 11,173 (Feb. 24, 2012), and pursuant to 10 CFR 2.309(f), Missouri Coalition for the Environment (“MCE”) files this Request for Hearing and Petition to Intervene in the license renewal proceeding for the Callaway nuclear power plant (“Callaway.”) As discussed below, MCE contends that the Environmental Report submitted by Union Electric Co. d/b/a Ameren Corp. (hereinafter “Ameren”) is inadequate to satisfy the National Environmental Policy Act (“NEPA”) and the U.S. Nuclear Regulatory Commission’s (“NRC’s”) implementing regulations.

II. DEMONSTRATION OF STANDING

MCE is the State of Missouri’s independent citizens’ environmental organization for clean water, clean air, clean energy, and a healthy environment. MCE works to protect and restore the environment through public education, public engagement, and legal action. *See* <http://www.moenviron.org/about/who-we-are/>. MCE seeks a hearing on the proposed re-licensing of the Callaway nuclear power plant in order to protect its members’ interest in a clean

and healthy environment, including the elimination or mitigation of the hazards posed by the operation of the Callaway nuclear power plant.

MCE has standing to intervene in this case because many of its members live, work, and own property within 50 miles of the Callaway reactor, and their interests may be affected by the results of the proceeding. *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 2 and 2), ALAB-522, 9 NRC 54, 56 (1979). Their health, safety, property value, and means of livelihood could be adversely affected if the NRC permits Callaway to continue to operate for an extended period in a manner that is unsafe or harmful to the environment. For instance, if an accident and consequent offsite radiation release were to occur at Callaway, the health, safety, property value, and means of livelihood of neighbors of the plant, including members of MCE, could be seriously harmed. MCE has attached declarations from individual MCE members who have authorized it to bring this legal action on their behalves. *See* Declarations of Ruth L. Schaefer (Exhibit 1A), Mary E. Mosley (Exhibit 1B), Mark Haim (Exhibit 1C), Carla T. Klein (Exhibit 1D), and Patrick J. Wilson (Exhibit 1E).

III. CONTENTIONS

Contention 1: Environmental Report Lacks Information Regarding Proposed Modifications to Callaway Facility

1. Statement of the Contention: 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 post-Fukushima enforcement order EA-12-049 (March 12, 2012), Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Effective Immediately) ("Order EA-12-049") (ML12056A045). As also required by 10 C.F.R. § 51.53(c)(2), the Environmental Report must include a discussion

of a reasonable array of alternative measures for modifying the facility in accordance with Order EA-12-049.

2. Brief Summary of Basis for the Contention: This contention seeks compliance with 10 C.F.R. § 51.53(c)(2)’s requirement that an environmental report must contain “a description of the proposed action, including the applicant’s plans to modify the facility or its administrative control procedures as described in accordance with § 54.21 of this chapter.” Modifications “directly affecting the environment or affecting plant effluents that affect the environment” must be described “in detail.” The contention also seeks compliance with 10 C.F.R. § 51.53(c)(2)’s requirement for the discussion of a reasonable range of alternatives.

On March 12, 2012, the NRC issued Order EA-12-049, requiring Ameren and other reactor licensees to: “develop, implement and maintain guidance and strategies to restore or maintain core cooling, containment, and SFP [spent fuel pool] cooling capabilities in the event of a beyond-design-basis external event.” As the Order explains, although the NRC believes that continued operation and licensing of reactors do not pose an “imminent threat to public health and safety,” it has acquired “new insights from the events at Fukushima Dai-ichi” leading it to conclude that “additional requirements must be imposed on Licensees or CP holders to increase the capability of nuclear power plants to mitigate beyond-design-basis external events.” *Id.* at 3-4. The NRC considers these requirements essential for the protection of public health and safety. *Id.* at 4.

The NRC anticipates that the “strategies and guidance developed by licensees such as Ameren in response to Order EA-12-049 “will provide the necessary capabilities to supplement those of the permanently installed plant structures, systems, and components that could become unavailable following beyond-design-basis external events.” *Id.* at 6. The order instructs that

“strategies should be developed to add multiple ways to maintain or restore core cooling, containment and SFP cooling capabilities in order to improve the defense-in-depth of licensed nuclear power reactors.” *Id.*

Order EA-12-049 instructs licensees to establish mitigation strategies as follows:

This Order requires a three-phase approach for mitigating beyond-design-basis external events. The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment and spent fuel pool (SFP) cooling capabilities. The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely.

- (1) Licensees or construction permit (CP) holders shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and SFP cooling capabilities following a beyond-design-basis external event.
- (2) These strategies must be capable of mitigating a simultaneous loss of all alternating current (ac) power and loss of normal access to the ultimate heat sink and have adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on a site subject to this Order.
- (3) Licensees or CP holders must provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on a site subject to this Order.
- (4) Licensees or CP holders must be capable of implementing the strategies in all modes.
- (5) Full compliance shall include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.

Id., Attachment 2.

In addition, Order EA-12-049 sets forth a schedule for compliance. Within 20 days of the issuance of the Order, licensees must tell the NRC whether they intend to challenge the order and they must also inform the NRC whether they think any of the order’s requirements would compromise public health or safety. *Id.* at 8. By February 28, 2013, licensees must submit to the NRC “an overall integrated plant including a description of how compliance with the

requirements described in Attachment 2 will be achieved.” *Id.* at 9. The order requires fulfillment of the requirements within two refueling cycles after submittal of the overall integrated plan or by December 31, 2016, whichever is earlier. *Id.* at 7-8. The order also states that the NRC will issue Interim Staff Guidance in August 2012. *Id.* at 4.

In a letter dated March 30, 2012, Ameren agreed to comply with the requirements of Order EA-12-049 on the schedule set forth in the order, although it stated that it might be necessary to request “schedule relief as warranted by subsequent NRC requirements or implementing guidance or the results of engineering analyses not yet performed.” Letter from Scott A. Maglio, Regulatory Affairs Manager, to NRC at 2 (ML12090A497).

As explicitly stated in Order EA-12-049, the NRC considers the modifications set forth in the order to be necessary for adequate protection of public health and safety against beyond-design-basis accidents. Therefore these modifications are relevant to the environmental impacts of the site and must be discussed in the Environmental Report pursuant to 10 C.F.R. § 51.53(c)(2).

Moreover, as set forth in Attachment 2 to Order EA-12-049, the NRC has chosen not to prescribe specific strategies and measures for fulfilling the requirements and has instead allowed licensees to make their own proposals. Therefore, as also required by § 51.53(c)(2), the relative effectiveness and costs of a range of alternatives for meeting the requirements of Order EA-12-049 should be discussed.

3. Demonstration that the Contention is Within the Scope of the Proceeding: The contention is within the scope of the proceeding because it seeks the inclusion of required environmental information in the Environmental Report and because it bears on the environmental impacts of the Callaway nuclear power plant during the license renewal term,

including consideration of alternatives to avoid or mitigate the adverse environmental impacts of beyond-design-basis accidents.

4. Demonstration that the Contention is Material to the Findings NRC Must Make to Re-License Callaway: The contention is material to the findings that NRC must make in order to re-license Callaway because it seeks the provision and analysis of information regarding the environmental impacts of proposed modifications to the Callaway plant that will affect its safety and environmental impacts during the license renewal term as well as the effectiveness and relative costs of alternatives for mitigation of beyond-design-basis accidents, as required by NRC license renewal regulation 10 C.F.R. § 51.53(c)(2). This information will ensure that the NRC has considered an appropriate array of alternatives for protecting public health and safety against the adverse environmental impacts of a beyond-design-basis accident at Callaway, as required by NEPA. *Exelon Generation Co., L.L.C.* (Limerick Generating Station, Units 1 and 2), LBP-12-08, __ NRC __, slip op. at 9 and n. 42 (April 4, 2012) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989); *Limerick Ecology Action v. NRC*, 869 F.2d 719, 737 (1989)).

The contention is also relevant to license renewal because the new measures are scheduled to be implemented within the next four years and therefore may affect the degree to which the environment is protected against the environmental impacts of beyond-design-basis accidents during the license renewal term.

5. Concise Statement of the Facts or Expert Opinion Supporting the Contention, Along With Appropriate Citations to Supporting Scientific or Factual Materials: The facts supporting this contention are found in the Environmental Report and Order EA-12-049 and are described above.

Contention 2: Environmental Report Lacks Information on Status of Compliance With Federal Requirements and Approvals

1. Statement of the Contention: In violation of 10 C.F.R. § 51.45(d), the Environmental Report fails to describe the status of Ameren's compliance with NRC post-Fukushima orders and requests for additional information relevant to the environmental impacts of the Callaway nuclear power plant during the license renewal term. These requests for information and orders for actions originate with both the NRC and the U.S. Congress. *See* Order EA-12-049 at 4-7; Requirements of Request for Information Pursuant to Title 10 of the Code of Federal Regulations, 50.54(f) Regarding Recommendations 21.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights From the Fukushima Dai-ichi Accident at 2 (March 12, 2012) ("3/12/12 Information Request") (ML12053A340).

The Environmental Report for renewal of the Callaway operating license is inadequate to comply with NEPA and NRC implementing regulations because it lacks the following information regarding Ameren's compliance with NRC requirements and approvals:

(a) Requirement of Order EA-12-049 to: "develop, implement and maintain guidance and strategies to restore or maintain core cooling, containment, and SFP [spent fuel pool] cooling capabilities in the event of a beyond-design-basis external event." *Id.* at 6.

(b) The following requirements of the 3/12/12 Information Request:

(i) "Requested Information" regarding Seismic Hazard Evaluation and Seismic Risk Evaluation. *Id.*, Enclosure 1 at 7-8.

(ii) "Required Response" related to item (i) above. *Id.*, Enclosure 1 at 9. Details of these requirements are provided in Attachment 1 to Enclosure 1.

(iii) “Requested Information” regarding Hazard Evaluation Report and Integrated Assessment Report. 3/12/12 Information Request, Enclosure 2 at 7-8.

(iv) “Required Response” related to item (iii) above. 3/12/12 Information Request, Enclosure 2 at 9-10. Details of these requirements are provided in Attachment 1 Enclosure 2.

(v) “Requested Actions,” “Requested Information,” and “Requested Response” regarding communication systems and equipment used during an emergency event, assuming that (a) the potential onsite and offsite damage is a result of a large scale natural event resulting in the loss of all alternating current (ac) power and (b) the large scale natural event causes extensive damage to normal and emergency communications systems both onsite and in the area surrounding the site. 3/12/12 Information Request, Enclosure 5 at 2-3.

Moreover, to the extent that Ameren proposes modifications to the Callaway facility in response to the 3/12/12 Request for Information, NEPA also requires the consideration of the effectiveness and relative costs of a range of alternatives for satisfying the NRC’s concerns. *See* 10 C.F.R. § 51.53(c)(2) and *Exelon*, cited above at pages 5-6.

2. Brief Summary of Basis for the Contention: NRC regulation 10 C.F.R. § 51.45(d) requires an Environmental Report to “[l]ist all Federal permits licensees, approvals and other entitlements which must be obtained in connection with the proposed action” and “describe the status of compliance with these requirements.” Section 51.45(d) also requires that the Environmental report must include “a discussion of the status of compliance with applicable environmental quality standards and requirements.” Further, the discussion of alternatives must state whether the alternatives will comply with these standards. *Id.*

The NRC has stated that all of the information and actions requested above are mandatory because they are necessary to provide adequate protection to public health, and therefore they relate to the environmental impacts of Callaway on the human environment during the license renewal term. *See* Order EA-12-049 at 4-7, 3/12/12 Information Request at 2-3. Therefore they constitute federal requirements that must be identified in the Environmental Report. In addition, the Environmental Report must discuss the status of Ameren's compliance with these requirements. Finally, to the extent that Ameren proposes modifications to the Callaway facility in response to the 3/12/12 Request for Information, NEPA also requires the consideration of the effectiveness and relative costs of a range of alternatives for satisfying the NRC's concerns. *See Exelon*, cited above at pages 5-6.

3. Demonstration that the Contention is Within the Scope of the Proceeding: The contention is within the scope of the proceeding because it seeks the inclusion of required environmental information in the Environmental Report and because it bears on the environmental impacts of the Callaway nuclear power plant during the license renewal term, including consideration of alternatives to avoid or mitigate the adverse environmental impacts of beyond-design-basis accidents. *See Exelon*, cited above at pages 5-6.

4. Demonstration that the Contention is Material to the Findings NRC Must Make to Re-License Callaway: The contention is material to the findings that NRC must make in order to re-license Callaway because it seeks the provision of information relevant to federal requirements and approvals that relate to protection of the environment and public health and safety against the adverse environmental impacts of a beyond-design-basis accident at Callaway.

The information is also relevant to license renewal because the actions and information requested in Order EA-12-049 and the 3/12/12 Information Request must be fulfilled within the

next three or four years. Order EA-12-049 at 7-8; 3/12/12 Request for Information, Enclosure 1 at 9; Enclosure 2 at 9. Therefore any actions that Ameren takes in response to the requirements may affect the degree to which the environment is protected against the environmental impacts of beyond-design-basis accidents during the license renewal term.

5. Concise Statement of the Facts or Expert Opinion Supporting the Contention, Along With Appropriate Citations to Supporting Scientific or Factual Materials: The facts supporting this contention are found in the Environmental Report, Order EA-12-049 and the 3/12/12 Information Request and are described above.

Contention 4: Inadequate Discussion of Wind Energy Alternative

1. Statement of the Contention: The Environmental Report is inadequate to satisfy NEPA or 10 C.F.R. § 51.53(c)(2) because it 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. Wind energy operating in the MISO grid warrants serious consideration as an alternative because it is currently available and sufficient to entirely replace the energy to be generated by Callaway during the license renewal term. Wind 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.

2. Brief Summary of Basis for the Contention: In the Environmental Report, Ameren provides only a brief discussion of the wind alternative and dismisses the wind alternative as “not reasonable.” Environmental Report, Section 7.2.1.5 at 15. Therefore wind is not included in the comparison of alternatives in Section 8. As discussed in more detail in the attached Declaration of Dr. Arjun Makhijani (“Makhijani Declaration”) (Attachment 2),

Ameren's determination that wind is an unreasonable alternative is based on several assumptions that are factually, technically, and conceptually flawed.

First, 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. All Ameren generating stations, including Callaway, operate as part of the grid. Second, Ameren's assumption that storage or full standby fossil fuel replacement capacity would be needed for wind to reliably replace Callaway energy is incorrect. Neither is needed today and will not be needed even as renewables expand under the present renewable mandates in the MISO system. Finally, 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. Callaway and other nuclear reactors have experienced many unplanned outages. A proper apples-to-apples comparison requires that Ameren analyze the patterns of unavailability of nuclear and the role of the grid in providing supply and the variability of wind and the role on the grid in accommodating it. Therefore, under any scenario, all electricity generation energy sources must be considered in the context of the grid. In the case of Ameren, this is the MISO service area.

3. Demonstration that the Contention is Within the Scope of the Proceeding: This contention is within the scope of the proceeding because it seeks compliance with NEPA and NRC regulations regarding the scope and adequacy of environmental reports prepared in support of license renewal applications.

4. Demonstration that the Contention is Material to the Findings NRC Must Make to Re-License Callaway: The materiality of contentions regarding energy alternatives is well-

established and was recently affirmed in *NextEra Energy Seabrook, L.L.C.* (Seabrook Station, Unit 1), CLI-12-05, ___ NRC ___, slip op. at 48-49 (March 8, 2012) and *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-08, ___ NRC ___, slip op. at 5 (March 27, 2012). As the Commission stated in CLI-12-05, NEPA requires Environmental Reports for license renewal applications “to address the environmental impacts of the proposed action and also to compare them to impacts of [reasonable] alternative actions.” *Id.*, slip op. at 48.

5. Concise Statement of the Facts or Expert Opinion Supporting the Contention, Along With Appropriate Citations to Supporting Scientific or Factual Materials: The facts supporting this contention are summarized above in Section 2 and discussed in detail in the attached Makhijani Declaration.

IV. CONCLUSION

For the foregoing reasons, MCE should be granted intervenors status and its contentions should be admitted.

Respectfully submitted,

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