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General Comment

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Attachments

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Missouri Coalition for the Environment

Effective Citizen Action Since 1969

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April 7, 2014

Nuclear Regulatory Commission Generic Environmental Impact Statement for License Renewal of the Callaway 1 Nuclear Reactor

5.3 Severe Accidents

NRC: Severe accidents initiated by external phenomena such as tornadoes, floods, earthquakes, fires, and sabotage have not traditionally been discussed in quantitative terms in FES's and were not specifically considered for the Callaway site in the GEIS (NRC 1996). However, the Generic Environmental Impact Statement (GEIS) did evaluate existing impact assessment performed by the NRC and by the nuclear industry at 44 nuclear plants in the United States and concluded that the risk from beyond design-basis earthquakes at existing nuclear power plants is SMALL. The GEIS for license renewal performed a discretionary analysis of terrorist acts in connection with license renewals and concluded that the risk from such acts would be no worse than the damage and release expected from internally initiated events. In the GEIS, the Commission concludes that the risk from sabotage and beyond design-basis earthquakes at existing nuclear power plants is small and, additionally, that the risks from other external events are adequately addressed by a generic consideration of internally initiated severe accidents (NRC 1996).

Based on the information in the GEIS, the staff found the following to be true:

The probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal and economic impacts from severe accidents are small for all plants. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives.

The staff identified no new significant information related to severe accidents during review of the applicant's ER (Ameren 2011a), the site audit, the scoping process, or the evaluation of other available information. Therefore, there are no impacts related to these issues beyond those discussed in the GEIS.

MCE Petition: The Missouri Coalition for the Environment (MCE) believes that spent fuel storage risks are one of the most serious unaddressed safety and environmental issues facing the NRC today. The consequences of a pool fire are potentially catastrophic, affecting millions of people and costing billions of dollars. There is no excuse for imposing this potentially colossal risk on the public. The only reason the risk exists is that the government and reactor licensees have not done a good job of managing the waste generated by reactors. The volumes of waste piling up in the fuel pool at Callaway was never contemplated when its original license was issued in 1984.

We think the Nuclear Regulatory Commission (NRC) has swept the issue of pool fires under the rug for far too long. The NRC has never conducted a comprehensive analysis of pool fire risks, as it did for reactor accidents with the Severe Accident Study (NUREG-1150). The imposition of such great risks on the public without careful study is inexcusable. The Fukushima accident supposedly inspired NRC to take a closer look at the problem in the Expedited Spent Fuel Transfer proceeding – but the Consequence Study the NRC Staff turned out in 2013 was extremely inadequate.

In spite of its inadequacies, however, the Consequence Study and the cost-benefit analysis that accompanied it yielded new and significant information about the risks of pool fires and the benefits of reducing the density of fuel in pools. MCE participated in a rulemaking petition, submitted Feb. 18, 2014, seeking re-opening of the License Renewal GEIS to consider new and significant information generated by the NRC's proceeding on expedited transfer of spent fuel. It is unreasonable to issue a license extension without fully examining the risk of the spent fuel pool fire at the Callaway 1 nuclear reactor as a part of the Environmental Report. The NRC response to this concern at the March 19, 2014 public meeting in Fulton was that spent fuel considerations were outside the scope of the Environmental Report, which is simply bad public policy.

In the Expedited Spent Fuel Transfer Proceeding, the NRC Staff found that if even a small fraction of the inventory of a Peach Bottom reactor pool were released to the environment in a severe spent fuel pool accident, an average area of 9,400 square miles (24,300 square kilometers) would be rendered uninhabitable, and that 4.1 million people would be displaced over the long-term. This information is “new” because no EIS for reactor licensing, GEIS for reactor re-licensing, or Environmental Assessment for standardization design certification has specified the size of the area that could be contaminated or the number of people who could be displaced for an extended period of time by a high-density spent fuel pool fire. The information is “significant” because it undermines the NRC's conclusion in environmental studies, such as the one for Callaway, for reactor licensing and re-licensing that the impacts of spent fuel storage during reactor operation are insignificant. Such widespread contamination and long-term displacement of people could have enormous socioeconomic impacts, as witnessed by the effects of the Fukushima accident, where “land contamination has disrupted the lives of a large number of Japanese Citizens.”

It is estimated that over 100,000 Japanese people are still displaced from their homes and communities. The Japan Times recently cited a report from local Fukushima prefecture authorities that found more people have died from stress-related illnesses and other health related problems near the nuclear reactor than who died from disaster-related injuries. Real world nuclear disasters show the impact on communities surrounding a nuclear reactor are significant and therefore must be considered by the Nuclear Regulatory Commission in a meaningful way.

In the Peach Bottom review, the NRC acknowledged for the first time that the potential consequences of a pool fire are severe enough to warrant mitigation, regardless of the low probability estimated by the NRC for such an accident. No Environmental Impact Statement (EIS) for reactor licensing, GEIS for reactor re-licensing, or Environmental Assessment for reactor design certification has acknowledged that mitigation of pool fires is warranted or weighed the costs and environmental benefits of such mitigation measures.

To ensure compliance with National Environmental Policy Act (NEPA) in the consideration of this new and significant information, MCE and other petitioners requested the NRC to take the following actions:

- Suspend the effectiveness of Table B-1 of 10 C.F.R. Part 51, Subpart A, Appendix B (“Table B-1”), which codifies the NRC’s generic finding that spent fuel storage in high-density reactor pools during the license renewal term of operating reactors poses no significant environmental impacts and therefore need not be considered in individual reactor licensing decisions.
- Withhold Ameren Missouri’s license extension until a comprehensive risk assessment is undertaken by the NRC on the environmental impact of a high, medium, and low density spent fuel pool fire at the Callaway 1 nuclear reactor. The risk assessment must be available for public comment once completed.
- Suspend the effectiveness, in any new reactor licensing proceeding for reactors that employ high-density pool storage of spent fuel, of all regulations approving the standardized designs for those new reactors and all Environmental Assessments approving Severe Accident Mitigation Design Alternatives,
- Re-publish for public comment the following documents with respect to new and significant information regarding the environmental impacts of high-density spent fuel storage in reactor pools and the costs and benefits of measures for avoiding or mitigating those impacts:
 - The License Renewal Generic Environmental Impact Statement (NUREG-1437, Rev. 1, June 2013) (“2013 Revised License Renewal GEIS”);
 - The EISs for all new reactors;

- The EAs for all new certifications for standardized reactor designs (MCE includes this in our comments given Ameren Missouri's longstanding interest in expanded nuclear reactor development in Missouri),
- Duly modify NRC regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs; and
- Suspend all new reactor licensing decisions and license renewal decisions pending completion of this proceeding.

The Missouri Coalition for the Environment appreciates the opportunity for comment and hope that we receive a specific response to our comments. NRC staff was unable or unprepared to answer most of MCE's questions at the March 19, 2014 meeting in Fulton and would appreciate a written response.

Thanks,



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