

## CallawayCEm Resource

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Comments on  
Callaway Unit 2  
Combined License Application  
(COLA)  
Part 3: Environmental July 2008

There are many rational reasons to halt construction of an additional Proposed Callaway Unit 2 Nuclear Plant near Fulton, Missouri too many to address here but this commentary will highlight some concerns regarding this unacceptable proposal.

1. If completed the proposed plant would increase the radiological impact on the surrounding area during "normal" operation. Hundreds of man-made radionuclides would be released into the air and water impacting on a large population area, as well as, other species. The Combined License Application only addresses these issues in a superficial, template fashion. Taking actual data from Callaway 1 and adding the proposed added burden from Callaway 2 might give a somewhat realistic view of the impact of a second plant. For example tritium leaks from the current plant have been documented in the public record. Monitoring data from Callaway should be included in all documentation of the cumulative effects of the proposed additional plant.

2. Biological assays of the area surrounding the proposed plant are superficial and inconclusive. The field surveys cited in the document were only conducted during 2007 and seem to have "missed" several listed, important and/or state and federal endangered species.

For example: Two important species the Ruffed Grouse and Long-Tailed Weasel found in the 1973 baseline survey but not in 1974 and 1975 nor in 2007 would seem to illustrate a negative impact of construction and operation of Callaway 1. It seems unlikely that no rare, threatened or endangered plant or herpetological species were identified during field surveys. Not in the wetlands? Not in the limestone fen/glade areas? Who conducted field surveys? Federal or state biologists or consultants who were paid to not find species. There is no explanation of how the long-tailed weasel (imperiled) was not found in 2007 so the consultant dismisses their occurrence on the site. The consultant fails to detail the impact on the Northern Harrier and Bald Eagle by expanding transmission lines.

Gray Bats and Indiana Bats are cited as being historically present on site but there are no bat surveys in the 2007 field studies. Gray Bats migrate between caves in summer and winter sites but return to the same caves. What effort has AmerenUE made to protect these species?

The Indiana Bat (*Myotis sodalis*) is not listed MDC Natural Heritage Database for Callaway or Osage Counties but is a USFWS is a species of concern. And the Indiana Bat is known to occur historically on the site. They have been in decline in Missouri from 399,000 in 1970s to 66,800 in 2003 further construction and possible plant operation could negatively impact these species. This document also fails to contemplate the impact of climate change on species migration.

2. There are several wells contaminated with Tritium and Strontium from Callaway 1. There is no realistic explanation of the contamination, any efforts to remediate the contamination or what the possible cumulative effects on the environment would the operation of a Callaway plant unit 2 have on ground water and the various aquifers.
- 3.3. The COLA lists airborne releases within 50 miles is 0.0571 person-rem per year from "a" U.S. EPR reactor. What are the actual releases from Callaway 1 in addition to the 0.0571 guesstimate?
4. Section 7-67 briefly discusses radiation exposure calculations to the public from transportation of Irradiated Fuel Callaway Models are based on transportation to Yucca Mountain. Yucca Mountain is not available and is not likely to be available as a repository. What preparations is AmerenUE taking to store the current and future irradiated fuel rods on site? Section 7 also details models of estimated Radwaste on an annual basis where is the actual data on actual radwaste transport from Callaway I which would be useful in extrapolated the modeled increased exposure from a Callaway 2? What are the actual exposure rates for RADTRAIN and other transportation exposures from Callaway I? What are the actual fatality, injury, population doses and exposure rates from both so-called "Low-Level" Rad Waste and High Level Rad Waste transportation from Callaway 1? What is the anticipated additional extrapolated risk from Callaway 2 from irradiated fuel, new fuel and Radwaste. Does additional risk double the current real exposures?
5. Document assumes AmerenUE as the 100% owner of a French designed plant and that it would be operational in 2018. The document does not address transfer of responsibility and risk to any successor owner including accident and/or decommissioning costs. Is AmerenUE anticipated that the taxpayer and ratepayer would bail out the company
6. AmerenUE currently is lobbying the Missouri State Legislature to transfer risk from the company's shareholders to the ratepayers for

construction work in progress. Will the company or its successor attempt to transfer other responsibilities and risks to taxpayers and ratepayers?

7. AmerenUE anticipates ratepayers paying for construction of Callaway 2 and bear all the financial risk while the company would sell power through MISO. Page 8-7 stipulates that AmerenUE already provides virtually all its energy and capacity needs . . . the company is then asking the ratepayers to build Callaway for excess generation and then transferring the burden of risk from shareholders. The NRC should require AmerenUE to submit independent data regarding power demand load analysis and forecasting. The company expects ratepayers to bear the burden and financial risk of paying for Callaway in order to sell power wholesale through the transmission grid. It seems apparent that there is a conflict of interest between the transmission provider and the shareholder providing power need data when it is clear that they are not willing to risk shareholder investment in the project. The Missouri PSC relies on data provided by AmerenUE through the IRP process there is no independent confirmation of that data. The NRC should require independent review of power need to protect ratepayers from undue risk and financial burden that should be born entirely by the plant owner. AmerenUE details stakeholder involvement in its IRP process which was undertaken before AmerenUE sought to shift rate increases for construction to ratepayers from shareholders. This reveals an inherent conflict of interest in AmerenUE projections of future power need and plant construction costs without independent oversight to protect the interests of the taxpayer and customer. How could stakeholders in 2005 have knowledge of the company's plan to shift the financial burden of Construction Work in Process to customers? This calls into question the IRP process for MISO for reliable forecast methodology. If Callaway 2 is justified by a projected need for power then how can the company depend on a change in state statute to provide financing for providing that power - that variable has been known since 1976. After AmerenUE's Taum Sauk accident the taxpayer, environmentalists and ratepayers are justifiably cautious of the company's "good will."

8. The COLA lists states that CJC Aquifer is "leaky" and there are several contaminated wells on or near the current plant. It is unclear whether the leakage comes from either overlying alluvium or recharge from streams - it seems that there is significant doubt regarding current impact from Callaway 1 and the geology and hydrology of the site.

9. A potential major issue not addressed by AmerenUE is the aging and retirement of key personnel at Callaway 1. If Callaway 1 is losing its highly qualified, trained, experienced workforce through attrition then where would Callaway 2 find additional QUALIFIED employees?

10. Section 9 dismisses Solar power as an alternative to Callaway 2 but does not take into account costs associated to taxpayers from uranium mill tailings, rad waste, irradiated fuel rods (storage and transportation) and de-commissioning a nuclear power plant

11. What is the performance record for the proposed design? I understand that it may be slightly more efficient but may produce "hotter" irradiated fuel rods and Radwaste.

12. There is significant page dedication to a new collector well intake system but little in the way of rationale or detail of operation. Where have these type of intake systems been operated? Section 9-59 says that the cooling system makeup water 80-90% surface water recharge to aquifer 10 -20 % from groundwater. If we do not know how wells on and off site became contaminated with Strontium 90 how can we predict the action of these intake wells during drought or flooding? The report needs much more detail regarding collection wells and potential impact on water resources, on wetlands and river species. Report needs data on where these intake wells have been used and detailed environmental impact of construction and operation.

13. What is current impact by operating plant on aquifers and river including thermal plume?

14. What is limited groundwater use during operation and construction??? How much water? How many porta-potties for 5,000 construction workers?

15. What are the actual monitoring results from Callaway 1 radioactive and chemical waste water storage before release? What would be the additional impact cited in 9-109 ? What are the monitoring levels before eventual release?

16. No details on 9-114 Alternative Intake System

17. 10-5 states that radiological dose to workers and general public have been calculated what are actual doses from Callaway 1 as a baseline? What are projected increases from 2?

18. What efforts to control and limit rad solid wastes will be implemented? What current efforts have been effective at Callaway 1?

19. What are the projected combined radionuclides in combined effluent from Callaway 1 and 2 in discharge pipe?

20. 10-5 salt disposal from plume .00014 lbs per acre per month so would salt deposits be .00028 lbs. per acre per month? How does this correspond with deposits of radionuclides per acre per month?

21. No mention of exposure of 5,000 construction workers to current contamination at site. No mention of evacuation plans for workers in a significant unscheduled event.

22. Table 10.4.1 average 24,160 gpm aquifer makeup 103 gpm groundwater - what is current real data on Callaway 1?

23. Where are the results of testing page 7 Table 10.4.1?

24. Radiological exposure to workers and public listed as SMALL what is current exposure data what is the estimated increase? p 8 of 9 10.4.1

25. Mentions Reform Conservation Area may be closed during an Orange National Security Level - Is it closed now level the is

orange? If both plants are in operation does that double the costs in anti-terror planning and law enforcement?

26. What is the Army Corps of Engineers and state DNR opinion of Collector Well Feasibility Study?  
What is U.S. Fish and Wildlife and U.S. E.P.A.'s opinion?

27. Where is data regarding cumulative Callaway 1 and 2 radiological dose impact to workers, general population and other species?

28. What are anticipated direct, liquid and gaseous releases from 2 plus historical data from 1? What are the cumulative use requirements of water releases and release of gaseous, liquid and solid wastes.

29. There is not enough material regarding flooding, droughts, earthquake and dam failures. < /o:p>

30. There is not enough data on the impact on multiple aquifer contamination especially for the Fulton, Jefferson City and Columbia areas?

31. There is not enough data on porosity of rock, leakiness of aquifer and the impact of collector wells. For example if there is significant contamination and the collector wells aren't functioning what is the possible impact on draw down? What happens if contaminated and wells aren't functioning?

32. Why is there a proposal to bring in 15 feet of fill?  
Is there not enough distance between groundwater and proposed reactor?

33. What impact could blasting have on current plant?

34. MW-2S is listed several times in the document including table 2.3-13 Page 1 of 2 as a Shallow Well. MW-2S is shown as contaminated with Strontium 90 at 1.34 pCi/L on 2-164 Table 2.3-33. It is shown on another page as having 8 pCi/L of SR90. This man-made contaminant presumably comes from Callaway 1 yet is closer to Reform, Missouri than the plant and is close to several caves in the area that may be frequented by the Gray and/or Indiana Bat. Where are results of all the wells for all contaminants from Callaway 1? The NRC, EPA and Fish and Wildlife, as well as, the public could have better input on the Callaway 2 issue with real data to measure the impact from Callaway 1 for a baseline.

35. The alternatives listed in the COLA give little attention to the risks of major accidents at Callaway 1 or 2. A catastrophic accident with a major release could cause 10,000 early fatalities, several hundred thousand early injuries and another 10,000 cancer deaths. In addition such a catastrophic accident could cause several hundreds of billions of dollars in property damage - why were these costs not included in discussion of alternative actions?

36. There is reason to believe that there will be no place, except on site, to contain irradiated fuel rods, low-level and/or high-level waste. Although it is clear that AmerenUE does not expect shareholders to be responsible for that risk or the financial risks for building the plant - all those costs should be discussed in the document. There may be no free lunch but the NRC as a responsible regulator should make sure that serious discussion of these "hidden" costs be part of any decision making.

37. As previously mentioned there is no real discussion of increased terrorist threats or security measures proposed to deal with threats posed by an additional plant. Transportation, power disruption, water pumping stations, pipelines, irradiated rod storage pools, dry cask storage are all potential targets.

38. There is no serious discussion regarding current routine releases from Callaway Unit 1 as a baseline to discuss additional burden from the proposed Callaway 2 unit.

39. There is no serious discussion regarding accidental leaks from Callaway 1. For example there are known strontium and tritium leakage issues. It would make scientific and mathematical sense to use monitoring data in order to gauge future impact. It also would help the public decision making process to know how AmerenUE attempted to mitigate such leaks in order to predict future corporate responsibility.

40. In the uncertainty of the U.S. and Missouri's economic projections the continued subsidy of AmerenUE's by taxpayers and ratepayers is an unfair burden. Federal insurance, tax subsidies, waste subsidies, research dollars, infrastructure strain all should be on one side of the public scale in decision making. This flawed document seems self-serving and superficial there is no real discussion of alternatives and no independent justification for increased capacity. Why should we saddle future generations of taxpayers and ratepayers with a financial burden too risky for AmerenUE's shareholders?

41. On March 19, 2009 the U.S. Secretary of the Interior released a comprehensive report on the widespread decline of bird populations in the United States the reports shows that nearly a third of the nation's bird species are endangered, threatened or in significant decline due to habitat loss, invasive species, and other threats. In addition to habitat loss and disruption, birds (and other species on site) may also face other man-made threats such as pesticides, biocides, radiation, and collisions with towers and buildings. Callaway 2 construction and operation in addition to the habitat degradation caused by Callaway 1 presents a burden to already stressed species including birds, bats, mammals, amphibians, reptiles, insects and plants. The field survey of the Callaway and surrounding areas is superficial and incomplete.</span>

42. One of the more important aspects ignored by AmerenUE and their consultants was the passage of a Missouri Clean Energy Initiative. In 2008, Missouri voters overwhelmingly passed Proposition C, the Missouri Clean Energy Initiative, by a 66% to 34% margin. Missouri citizens and AmerenUE's costumers have weighed in they clearly want their electricity to come from

clean, renewable energy sources. The voter approved initiative requires investor-owned utilities to generate or purchase 15% of their electricity from clean energy sources, such as wind and solar power, by 2021. It also includes a rebate that will lower the cost of installing solar on a home by nearly 25%. A cost analysis of the Clean Energy Initiative shows that it will result in a net savings to Missouri electricity consumers over time, as wind, solar, and renewable resources come online. The Clean Energy Initiative is expected to stimulate in-state generation of renewable energy sources, including wind, solar, biomass and small hydroelectric, resulting in more than 10,000 new jobs. Far more cost effective, safer and employing more Missourians than the roughly 5,000 temporary construction jobs building a Callaway Unit 2.

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