

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company)
d/b/a Ameren Missouri's 2012 Integrated) File No. EO-2012-0357
Resource Plan Annual Update Report.)

**Missouri Department of Natural Resources' Comments to the
2012 Annual Update Report and Workshop**

COMES NOW the Missouri Department of Natural Resources
(MDNR) and submits the following comments on Ameren Missouri's
(Ameren) 2012 Annual Update Report and Workshop.

Ameren submitted its 2012 Annual Update report (update report) in
File No. EO-2012-0357 on April 15, 2012. Ameren followed up their report
with an update meeting on May 17, 2012 and submitted its Summary
Report (summary report) on May 30, 2012. MDNR is a stakeholder in the
Ameren 2011 IRP case (File No. EO-2011-0271) and its annual update (File
No. EO-2012-0357) and is filing these comments to Ameren's update report
and summary report pursuant to 4 CSR 240-22.080(3)(D).

Ameren has done a thorough job in updating its 2011 IRP, has made
appropriate adjustments in its forecasts to account for changes in natural
gas prices and forecast load, and has addressed the Commission's special
contemporary issues, established in EO-2012-0039. MDNR would highlight
two areas for further analysis: 1) the methodology and scope of Ameren's

forecast of coal prices, and 2) development and assessment of candidate resource plans containing small modular nuclear reactor (SMR) technology.

Methodology and Scope of Coal Price Forecasts

The Commission's order in Case EO-2012-0039, which specified special contemporary issues to be addressed by the company, required Ameren's annual update to "Evaluate coal price uncertainty as an independent uncertain factor to generally reflect uncertainties that could drive the cost of coal to Ameren Missouri."

In Section 3.3.5 of its update report, Ameren produced coal forecasts for Powder River Basin coal (PRB), ultra low-sulfur PRB coal (ULS PRB) and Illinois Basin coal (ILB). Ameren's analysis of minemouth coal prices filed in EO-2011-0271 distinguished between PRB and Illinois Basin coal but did not distinguish between PRB and ULS PRB coal. The distinction between varieties of PRB coal refines its analysis, and has implications for Ameren's environmental compliance. Ameren notes in its update report that use of ULS PRB coal is central to its plans to reduce SO₂ emissions¹. Additionally, Ameren's update report acknowledges and provides a narrative describing the potential impacts of global demand for coal and the physical constraints of mining (such as the increasing costs of overburden removal) in the Powder River Basin on future coal prices.

¹ Ameren Missouri 2012 Integrated Resource Plan Update, p 30-31 (HC)

However, the factors acknowledged and discussed in Ameren’s narrative are not included in the methodology that Ameren used to derive the coal price forecast for its update report. A modeling approach would be required to take these factors into account, but Ameren’s update report describes the methodology used as extrapolation from “high marks posted during the past 18 months in the Over-The-Counter (“OTC”) market for 2012, 2013 & 2014 ... we extrapolated the high PRB curve to 2030 with an annual increase of \$1.75 per ton.”² The extrapolation is sufficient for the update report, but for the next IRP filing the Commission should expect a modeling approach comparable in sophistication to the CRA modeling on which Ameren relied for its 2011 IRP, which transparently accounts for the factors brought forth by MDNR and now acknowledged by Ameren.

Finally, although the special contemporary issue required Ameren to analyze coal prices as an “independent critical uncertain factor”, there is a question of whether coal prices should be treated as a dependent uncertain factor. In its summary report, Ameren notes that this issue was discussed in its update meeting and has agreed to “consider whether coal prices should be a dependent uncertain factor and included in scenarios used for risk analysis.”³

² Ibid, p 30.

³ Ameren Missouri , Post-Workshop Summary Report, p 2

Including SMR technology in candidate resource plans

On April 20, 2012 Ameren and Westinghouse announced their intention to apply for small modular reactor (SMR) development grants offered by the United States Department of Energy. In the context of this announcement, addition of this new supply side resource to the list of supply side resources being screened changes the likelihood of Ameren adding to its nuclear resources. According to Ameren's update report, SMR plants typically provide 30% of the capacity of a conventional nuclear plant based on large, single-unit reactor technology (480 MW versus 1,600 MW).

For the update report, Ameren's internal experts estimated that SMR nuclear capacity could be acquired at a lower cost per KW than conventional nuclear capacity (\$4,777 vs. \$4,901 in the base case).⁴ Ameren further states that because Westinghouse's design relies on the production of standardized modular power units at a central factory, additional cost reductions could be achieved as reactor production ramps up. The update report does not provide any estimates of SMR levelized cost per kWh.

MDNR notes that while Ameren's estimate of SMR cost per Kw is lower than its current estimate of cost per Kw of conventional nuclear, it is higher than the cost per Kw (\$4,613 base) used for Ameren's 2011 IRP.⁵ The update report states that the 2011 IRP "assumed [SMR technology] to be

⁴ Ibid, Table 3.2, p 26

⁵ Ibid, Table 3.2, p 26

represented by the analysis [of conventional nuclear technology] because of the expected similarities in cost and operating performance characteristics.”⁶

This change in supply side resources, from conventional nuclear to SMR, has implications for the content and analysis of Ameren’s candidate resource plans. MDNR recognizes that at the time of the update report and update meeting, relatively little was known about the costs and benefits of SMR technology. However, there was no discussion in either the update report, the update meeting, or the summary report of how this new supply option might be included in alternative resource plans.

The company commented during its update meeting to the effect that acquisition of a SMR facility fits within the contingency analysis that the company presented in that filing. MDNR questions this comment for two reasons. First, the company’s supply side screening analysis did not include any in-depth analysis of SMR units. Second, and more importantly, the opportunity to acquire a modular nuclear unit does not fit within the decision factors which, in the company’s IRP filing, act as the triggers for moving from the preferred plan to a contingency plan. During its update meeting Ameren cited the large plant financing decision factor as its primary contingency option. To MDNR’s knowledge, there has been no change in the laws or regulations governing large plant financing (e.g., no

⁶ Ibid, p 2

change in the laws prohibiting CWIP) since Ameren's filing that would influence that decision factor. Ameren was quite explicit in its filing that its large plant financing decision factor was generic to all types of generation technology and was not explicitly related to nuclear generation. In MDNR's view, Ameren's filing in EO-2011-0271 does not provide integrated analysis of acquisition of a modular nuclear facility.

Regardless of state policy regarding large plant financing and the opportunities presented by Ameren's potential partnership with Westinghouse, Ameren has yet to analyze the impact of SMR on its resource mix. MDNR notes that, given Ameren's downward revision of its load forecast, the Company does not anticipate adding supply side resources within the current planning horizon.⁷ It may turn out that additional nuclear-based generation capacity is not needed. If this is the case and if Ameren decides to pursue this technology, one might expect that Ameren's resource acquisition strategy would change radically. For example, additional nuclear generation might accelerate coal plant retirement. Under such circumstances, integrated analysis of candidate resource plans containing valid estimates of SMR costs becomes essential.

MDNR suggests that opportunities exist for screening candidate resource plans including SMR in Ameren's upcoming 2013 annual update.

⁷ Ameren Missouri , Post-Workshop Summary Report, pp. 42-43

By 2013, Ameren and Westinghouse anticipate knowing the results of their application to the Department of Energy, and some of the uncertainty surrounding the cost and capacity of the technology will be resolved. We encourage Ameren to develop several candidate resource plans and assess them through integration as part of their 2013 annual update, in preparation for considering SMR technology as a resource in its upcoming 2014 IRP.

Summary

Ameren has been responsive to MDNR's concerns about coal prices and has, through this update, added needed specificity to its coal price forecast. There is room for a more robust analysis of coal prices, and we expect that a rigorous analysis will be conducted for Ameren's 2014 IRP. The same can be said for analysis of SMR technology. In its future annual updates, MDNR expects to see Ameren use the evolving costs and benefits of this technology included in candidate resource plans submitted to the integrated plan analysis required by the rules.

Ameren has provided an update report and update session that communicates the major changes that have taken place in the utility's preferred plan and resource acquisition strategy since its last triennial compliance filing. Ameren identified the key issues and changes it has been considering and provided the information at a level of depth and detail that

was appropriate to these changes and issues. MDNR commends Ameren for a very useful report and an informative and productive stakeholder update session.

WHEREFORE, the Missouri Department of Natural Resources respectfully submits these comments.

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been transmitted electronically to all counsel of record this 28th day of June, 2012.

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