

DRAFT MINUTES
ARKANSAS ALTERNATIVE ENERGY COMMISSION
[Established by ACT 1301 of 2009]
State Capitol, Room 171, Little Rock, Arkansas
Thursday, December 8, 2016

The Arkansas Alternative Energy Commission (AAEC) met Thursday, December 8, 2016, at 10:00 a.m. in Room 171 of the State Capitol in Little Rock, Arkansas.

Commission members in attendance: Warren Allen, Chair; David Dodge, John Nabholz, Gregory Perkins, and Andrew Lachowsky.

Commission members using conference call: Audrey House, Rita Potts, Don Crabbe.

Mr. Allen called the meeting to order.

REVIEW AND APPROVAL OF OCTOBER 27, 2016, MEETING MINUTES [EXHIBIT C]

Mr. Nabholz made a motion to approve the October 27, 2016, minutes and with a second by Mr. Dodge, the motion carried.

IS IT WASTE OR IS IT FUEL?

Mr. Allen introduced Mr. John Warmack to make a presentation regarding a technology using spent nuclear fuel rods as an alternative energy source.

Mr. Warmack provided a PowerPoint entitled, “**Is It Waste or Is It Fuel?**” and explained the United States has no plan to deal with spent fuel, but states don’t want more spent fuel accumulating. It is a problem for which the National Nuclear Security Administration, an agency of the federal government, would like to find a solution. [Pwrpt Presentation]

Arkansas’ two (2) nuclear reactors are a Generation II type, called Light Water Thermal Water Reactors. There is approximately 150 metric tons of spent fuel sitting in the Russellville parking lot. If the existing reactors were converted to Generation IV types, there would be better efficiency and 929 years of fuel sitting in that parking lot. That is a lot of nuclear energy now considered waste.

Mr. Warmack asked the Commission to pass a resolution encouraging legislation to identify spent fuel as an alternate energy source, and the second component, to encourage Arkansas to pass appropriate legislation and recommendations allowing an allocation of resources to the University of Arkansas System to investigate and analyze the spent fuel opportunity.

Mr. Allen asked experts to explain if this is an acceptable, practical alternative.

Dr. Mark A. Williamson, Manager, Nuclear Chemical Engineering, Nuclear Engineering Division, Argonne National Laboratory, via conference call, discussed the Experimental Breeder Reactor II (EBR-2) and why it would be the model of what they want to propose to Dr. Bobbitt. He said the EBR-2 reactor, for all intents and purposes, was a prototype Gen IV reactor. It used a metal fuel and a liquid sodium coolant and operated from approximately 1965 to 1994. Its primary purpose was research and development and showed an 85% capacity factor meaning operational time.

Dr. Williamson added that in the 1980s, Argonne did a series of tests where they put the reactor in a transient condition and then stood back and let the reactor operate. The physics of the system each time took the reactor from that transient condition back to a safe normal operation called a steady state. It was an entire passive safety system, an unprecedented test demonstrating the safety features of the sodium-cooled fast reactor with metal fuel.

Dr. Temitope Taiwo, Deputy Director, Nuclear Engineering Division, Argonne National Laboratory, via conference call, addressed the economics of the proposed plan. He said Argonne's economic evaluation expectation is that the cost of electricity used by the Gen IV Systems, relative to that of the Arkansas Light Water Reactor currently operating, would be very similar going forward. Dr. Taiwo said to consider costs of a single Light Water Reactor; there is still additional work to be done with the spent fuel, whereas the Gen IV System alleviates costs by reusing spent fuel. Even at that, consider the implementation cost is on the order of 10% more. Note -- this is the cost of the reactor. The overall fuel cycle costs are very similar in terms of the levelized cost of electricity for each of those two (2) systems.

Mr. Warmack noted a two-year timeframe for the U of A to make an initial report for what could be a fifty-year project.

Dr. Donald R. Bobbitt, President, University of Arkansas System, via conference call, said the University of Arkansas exists to serve the State of Arkansas and is ready to do its part.

Mr. Allen said, after listening to the presentation and comments he understands the Commission is being asked to consider making a recommendation to the governor and legislature to provide the necessary wherewithal to turn this subject over to subject matter experts, which would in turn take the technical, accounting, and practical end of this subject and feed that back to the state.

Ms. House made a motion to recommend this information go into the report, and with a second by Mr. Dodge, the motion carried.

Mr. Nabholz said there is also a request included to send a letter to the governor, but he would like to see that letter in written form. It is calling for the U of A or any Arkansas Educational Institution to apply for grants including language for a 90/10 matching. He would like to review and discuss this in a future meeting.

UPDATE ON THE ARKANSAS ALTERNATIVE ENERGY COMMISSION (AAEC) FUTURE RELATIVE TO THE SUNSET DATE

Mr. Allen called for discussion of the AAEC sunset date. Ms. House asked members to look at **[Handout 3]**. On line 4, she noted Senator Stubblefield would sponsor it.

Mr. Nabholz asked if on the bill, under "alternative fuels", spent fuel should be added, and Mr. Allen agreed. Mr. Nabholz would also like hydroelectric added under alternative fuels. Mr. Allen asked if Ms. House would take that on, and she agreed.

REVIEW OF THE AAEC 2016 REPORT

Members discussed recommendations and revisions to **[Handout 4-A and B]**.

Ms. Potts made a motion to include a recommendation supporting recycling, Ms. House seconded the motion, and it carried. [Handouts 1-A, B, and C]

Additional revisions (to **Handout 4-A**) include:

- Mr. Allen asked Mr. Nabholz to assist Ms. House in rewording the recommendation in the third paragraph;
- In paragraph four, Mr. Nabholz suggests language to include a recommendation for an appropriation to search and solicit for expertise and benchmarks in other states. Mr. Allen agreed it was appropriate.
- In paragraph five, Ms. House will contact the attorney regarding amending definitions and determine if the bill can be all inclusive or eliminate the sunset clause first then make another recommendation to broaden research capability. Hydro power and nuclear power are regulated by the federal government. Ms. House asked for time to investigate another bill to broaden the Commission's scope to include nuclear and hydro power.
- In paragraph six, Mr. Lachowsky suggests rewording due to inaccuracies. Mr. Allen asked Mr. Lachowsky to work with Ms. House to reword the recommendation.
- In paragraph seven, Mr. Allen noted input should be sent to Ms. House for the report.

Ms. House made a motion to approve the AAEE Scorecard [Handout 2] to be entered into the minutes and as an attachment to the letter from the Chairman. Mr. Dodge seconded the motion, and it carried.

NEXT MEETING – JANUARY 5, 2017

There being no further business, the meeting adjourned at 11:55 a.m.