SUMMARY *of* PROCEEDINGS

TASK FORCE ON NUCLEAR ENERGY PRODUCTION

COMMITTEE MEETING INFORMATION

August 29-30
Oil and Gas Commission
Casper, Wyoming

COMMITTEE MEMBERS PRESENT

Senator Stan Cooper
Senator Chris Rothfuss
Representative David Miller
Representative Steve Harshman
Mark Doelger

COMMITTEE MEMBERS NOT PRESENT

Anne Alexander
Christopher Mullen

LEGISLATIVE SERVICE OFFICE STAFF

Josh Anderson, Staff Attorney
Matt Sackett, Research Manager

OTHERS PRESENT AT MEETING

Please refer to Appendix 1 to review the Committee Sign-in Sheet for a list of other individuals who attended the meeting.

The Committee Meeting Summary of Proceedings (meeting minutes) is prepared by the Legislative Service Office (LSO) and is the official record of the proceedings of a legislative committee meeting. This document does not represent a transcript of the meeting; it is a digest of the meeting and provides a record of official actions taken by the Committee. All meeting materials and handouts provided to the Committee by the Legislative Service Office, public officials, lobbyists, and the public are on file at the Legislative Service Office and are part of the official record of the meeting. An index of these materials is provided at the end of this document and these materials are on file at the Legislative Service Office. For more information or to review meeting materials, please contact the Legislative Service Office at (307) 777-7881 or by e-mail at lso@wyoleg.gov. The Summary of Proceedings for each legislative committee meeting can be found on the Wyoming Legislature's website at http://legisweb.state.wy.us.

EXECUTIVE SUMMARY

The Task Force met for two days in Casper. The Task Force heard testimony on uranium mining processing and the issues of industry related to uranium mining. The Task Force heard testimony related to the study being conducted pursuant to 2012 Senate File 14. The Task Force heard testimony related to thorium and issues in the field of nuclear power including radioactive waste. The Task Force directed staff to draft legislation related to nuclear energy education and waste storage.

CALL TO ORDER (AUGUST 29, 2012)

Co-Chairman Cooper called the meeting to order at 8:30 a.m. The following sections summarize the Committee proceedings by topic. Please refer to Appendix 2 to review the Committee Meeting Agenda.

DEPARTMENT OF ENVIRONMENTAL QUALITY

Ms. Nancy Nuttbrock and Mr. John Wagner of the Department of Environmental Quality provide handouts to the Task Force regarding the uranium permitting process. See Appendix 3 for a copy of the handouts. Ms. Nuttbrock walked the task force through a recent example of an application. She noted that the application went through 5 rounds of technical comments and noted that the accuracy of the responses provided by the applicant has an impact on the process. She noted that previously the expectations were not made clear but under the current process it is clearer and that now that there has been a successful application the process will become more uniform. Mr. Wagner noted that the Water Quality role is peripheral in the process. He stated that the actual permit comes from the land quality division.

Ms. Nuttbrock noted that there is a uranium work group comprised of representatives from industry and the department which has been beneficial as they work through a number of issues. She noted that the work group has developed a list of topics to address. She noted that through this work the permit process has become more routine and work is continuing on standardizing how the department works with an applicant post issuance including their quarterly and annual reports and inspections.

Mr. Wagner noted that one important part of the process is obtaining an underground injection control permit in order to have injection of hazardous waste below the lowest underground source of drinking water. Ms. Nuttbrock noted that the Department works with the EPA on these issues and that they are trying to establish ways to consistently model the areas of influence and deliver that information to the EPA.

Ms. Nuttbrock noted that regarding agreement state status there are currently 37 agreement states and that for Wyoming to become an agreement state with the Nuclear Regulatory Commission (NRC) it would be an approximately 3 to 5 year process. She noted that staffing required to become an agreement state is very technical but that it would also provide an opportunity to have that expertise within the state. Fees have to match the costs.

UPDATE ON 2012 SENATE FILE 14

Mr. Bob Jensen of the Wyoming Business Council noted that the hybrid energy systems legislation provided for a cooperative study which was a little broader than just nuclear and focused on Wyoming being able to use resources in efficient manner and to provide a roadmap for what we can do as a state in that regard.

Dr. Richard Boardman of the Idaho National Laboratory noted that developing hybrid energy systems is a major mission of the lab. He noted that at one time the Federal government was looking into a

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demonstration project for a high temperature gas cooled reactor which would greatly reduce the cooling water needs when compared with current reactors. He noted that the Department of Energy has backed off of that project and it is unclear when or where such a project would be built but that it is unlikely that it would be in the near future.

Dr. Boardman noted that now much of the focus is on the small modular reactor program which is a different class of reactors similar to the current light water reactors but which are significantly safer. He stated that with the small reactors it would be next to impossible to have the type of accident which occurred in Japan or in others such as Chernobyl or Three Mile Island. He noted that federal support seems to be going towards these types of reactors.

Dr. Boardman noted that in considering the idea of hybrid energy systems it would be beneficial to look into both of these types of reactors but that a small modular reactor would be more likely to be done first. He stated that the groups that are interested in developing these types of projects are aware of this Wyoming project and are interested in the outcome of this report.

Dr. Boardman noted that these reactors could be used in a hybrid application in which the heat generated by the reactor could be use for more than just base load power generation. For example if there is wind power, which is variable, the small modular reactor could be used to smooth out the variability of wind power and then when not required for power the energy could be used for and alternative industry application such as creating synfuels. He stated that it makes a lot of sense for Wyoming to be a host site for a demonstration project of one of these types of systems.

INDUSTRY DISCUSSION OF NUCLEAR ISSUES

Mr. Ken Vaughn of Cameco provided a handout to the Task Force on expansion projects in Wyoming. See Appendix 4 for a copy of the handout. He noted that the goal of Cameco is to double its Uranium production worldwide. He noted that historically they have produced approximately two million pounds of uranium per year in Wyoming and that their expansion projects would allow them to at least double that amount.

Mr. Vaughn noted that at the state level that while the state is facing cuts it is important to make sure that the Department of Environmental Quality has enough resources to fulfill its mission. In response to a question regarding the possibility of developing enriched uranium in Wyoming Mr. Vaughn noted that while Cameco does fuel processing they do not have particular plans to add to that at this time.

Ms. Amy Womack of Uranium One noted that there is a demand for uranium around the world and that China is moving toward more nuclear power. Ms. Womack noted that the company has several projects that are moving forward. She noted that the company moved from Denver to Casper and that they have 100 employees and 95 contractors. She stated that the permitting issues that they have run into have been their most significant barrier.

Mr. Ian Andrews of PacifiCorp addressed the Task Force on nuclear issues. He noted that cost recovery is one of the reasons why PacifiCorp is not at the fore front in the nuclear area. He stated that they have identified the 2025-2030 time frame for nuclear when some of the existing coal plants will be coming out of their resource stack. He noted that another issue that PacifiCorp has run into related to developing nuclear energy is in the area of cost certainty and the risk of high cost overruns in relation to the development of a nuclear production facility. Mr. Andrews noted that the Department of Energy would soon be making a decision related to small modular reactors and that it would be important to find out what happens with that decision and to pick a technology which will win.

PUBLIC COMMENT

Mr. Richard Garret of the Wyoming Outdoor Council noted that it was important to try to find ways to engage the public and noted that his organization would be supportive of development in this area if it is done right including consideration of water issues and site impacts.

CALL TO ORDER (AUGUST 30, 2012)

Cochairman Miller called the meeting to order at 8:30 a.m.

THORIUM DISCUSSION

Mr. Kirk Sorensen of Flibe Energy addressed the Task Force regarding the possibility of using thorium as an energy resource. He noted that thorium uses a different type of reactor known as a liquid fluoride thorium reactor. He stated that while uranium is challenging, thorium is much easier and that if you were using it at high efficiency you could hold your lifetime energy supply in your hand.

He stated that thorium is currently one of the waste products from mining for rare earth minerals and that the cost of mining thorium would be low. He noted that some of the advantages of using thorium is that the reactors do not need emergency core cooling and do not need to prevent the fuel from melting because it is already melted but at a much lower temperature. He noted that these reactors are much safer because they are operating at atmospheric pressure. He state that these reactors could represent affordable, sustainable energy. He stated that these reactors do not need a big cooling tower or other large buildings and they are being designed to be truck transportable.

He noted that they are currently pursuing military licensing of these types of reactors. He stated that most of the work has been done in Alabama but any state that shows some leadership in this area would likely move to the head of the line. He stated that as with any technology the first one is the most expensive and would likely cost several hundred million but he noted that amount could be raised by private industry and that investors are primarily looking for some regulatory certainty. He noted that these reactors are capable of high temperature and that through the use of salt to convey heat could be even better than high temperature gas reactors for use in hybrid energy systems.

DR. PAUL DICKMAN – ARGONNE NATIONAL LABORATORY

Dr. Paul Dickman of Argonne National Laboratory addressed the Task Force regarding nuclear energy. Dr. Dickman noted that unlike what the Task Force had previously heard there were actually two reactors in Wyoming. He noted that in addition to the reactor in Sundance operated by the military there was also one in the University which operated for about 10 years in the fields of nuclear engineering and radio chemistry. He stated that it was located in the engineering building and that it was a 1 megawatt swimming pool reactor.

Dr. Dickman noted that one of the primary issues in this field is the public attitude toward nuclear power. He stated that in tracking public opinions about nuclear energy the impact of Fukushima was not that significant. He noted that one interesting trend was that women were more likely to not favor nuclear power than men. In relation to Fukushima he noted that nobody died from the accident or will likely die from radiation, although the same could not be said regarding the evacuation process. He stated that the accident involved 40 year old technology and a multiple catastrophic event. He also noted that many of the problems were man made decisions including choosing not to vent the core during a critical time.

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Dr. Dickman noted that one major issue related to nuclear power is the need to address the back end and make assurances that the country can manage and store nuclear waste. He noted that the outcome of the Blue Ribbon Commission was a consent based approach to siting a storage facility in that if the communities want a facility it can be sited. He noted that the likely outcomes from the report are very little and that in the end Congress needs to act.

In response to a question, Dr. Dickman noted that while he is not sure of all of the opportunities available to Wyoming there is a need to get focused on how to take care of the waste end of the cycle.

TASK FORCE DISCUSSION AND PLANNING

Representative Harshman requested staff to draft a bill providing funding for nuclear education three areas. The first area would provide four hundred thousand dollars per biennium to the University for fellowships in uranium production or nuclear power production. The second area would provide one million dollars for a baccalaureate degree at the university and would require private matching funds. The third area would provide two hundred thousand dollars to the Wyoming business council for internships related to energy education and would require private matching funds.

Cochairman Miller requested staff to draft a bill based on 12LSO-0148.W1 related to radioactive waste storage as considered by the Task Force in the previous interim based on a waste facility with a licensed power production facility.

PUBLIC COMMENT

Mr. David Earnshaw addressed the Task Force in order to recommend that the state consider the possibilities of using liquid fluoride thorium reactors to accomplish coal hydrogenation in order to preserve the value of coal in Wyoming's economy. Mr. Earnshaw provided handouts to the Task Force on this issue, see Appendix 5 for a copy of the handouts.

MEETING ADJOURNMENT

There being no further business, Co-Chairman Miller adjourned the meeting at 12:30 p.m.

Respectfully submitted,

Senator Cooper, Co-Chairman

Representative Miller, Co-Chairman

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Committee Meeting Materials Index

Appendix	Agenda Item	Appendix Description	Appendix Provider
1	Committee Sign-In Sheet	Lists meeting attendees	Legislative Service Office
2	Committee Meeting Agenda	Provides an outline of the topics the Committee planned to address at meeting	Legislative Service Office
3	Uranium permitting process	Uranium permitting process	Department of Environmental Quality
4	Cameco Wyoming expansion	Cameco Wyoming expansion	Cameco
5	Liquid Fluoride Thorium Reactors	Liquid Fluoride Thorium Reactors	David Earnshaw

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