Legislative Council
600 East Boulevard Avenue, Bismarck, ND 58505

ADVANCED NUCLEAR ENERGY COMMITTEE

Wednesday, September 3, 2025
Pioneer Room, State Capitol
Bismarck, North Dakota

Senator Dale Patten, Chairman, called the meeting to order at 9:00 a.m.

Members present: Senators Dale Patten, Cole Conley, Claire Cory, David Hogue, Tim Mathern; Representatives Dick Anderson, Macy Bolinske, Ben Koppelman, Alisa Mitskog, SuAnn Olson, Don Vigesaa; Citizen Members Pam Gorman Prochaska, Reice Haase, Sheri Haugen-Hoffart, Gavin McCollam, Claire Vigesaa

Member absent: Representative Mike Schatz

Others present: Senator Janne Myrdal, Edinburg, member of the Legislative Management
William Bridge and Ryan Tourigny, Nucleon Energy Inc.; Keith Crane, The RAND Corporation; Tim Howle*, BWX Technologies, Inc.; Sarah Kirkpatrick, North Dakota State University; Jeff Kummer, JuniPower Inc.; Thomas Roddey*, AtkinsRéalis; Taylor Stevenson, Envoy Public Labs; Camille Thompson, Fire2Fission; and Charlie Zhang, University of Wyoming
See Appendix A for additional persons present.
**Attended remotely*

Chairman Patten introduced Mr. Ian Gilley, Energy Innovator Fellow, Department of Commerce, as a resource available to the committee. Mr. Gilley provided a brief introduction to the committee.

Ms. Megan J. Gordon, Code Revisor, Legislative Council, presented a memorandum entitled *Supplementary Rules of Operation and Procedure of the North Dakota Legislative Management*.

GENERAL INFORMATION

Ms. Gordon presented a background memorandum entitled *Advanced Nuclear Energy Study - Background Memorandum*.

Chairman Patten introduced Ms. Jana Hennessy and Mr. Mirek Petrovic, Members, High-Level Radioactive Waste Advisory Council. They provided brief introductions to the committee.

Ms. Michelle Zietlow-Miller, Public Engagement Manager, Gateway for Accelerated Innovation in Nuclear, presented information (Appendix B) regarding an overview of advanced nuclear energy. She noted:

- The Gateway for Accelerated Innovation was initiated by the United States Department of Energy in 2016 to provide states, developers, and other entities access to the national labs' information and to support state engagement in nuclear energy.
- In 2026, artificial intelligence, data centers, and cryptocurrency will drive energy demand comparable to that of the world's sixth largest country.
- A single uranium fuel pellet has as much energy as 17,000 cubic feet of natural gas, 149 gallons of oil, and 1 ton of coal.

- There are numerous types of advanced nuclear reactors, including light water reactors, high-temperature gas reactors, and liquid metal and molten salt fast reactors.
- Adding nuclear power to a community can bring long-term job opportunities and economic growth, with every $100 of electricity produced generating $50 in supplier and support industry economic activity.
- North America has 32 active advanced nuclear projects, including 14 microreactor and 18 small modular reactor (SMR) projects, with 12 slated for deployment before 2030.
- Regional interest in nuclear energy is rising, with varying levels of engagement in Colorado, Iowa, Minnesota, Montana, Nebraska, Saskatchewan, South Dakota, and Wyoming.

In response to questions from committee members, Ms. Zietlow-Miller noted:

- In over 40 years of United States nuclear power operation, all existing nuclear waste could fit on a football field stacked about 15 yards high.
- Reprocessing spent nuclear fuel is not currently economically feasible in the United States.
- Other countries have nuclear waste storage repositories underground, which is an option the United States may consider once a collaborative siting process is established.
- It is important to educate the public regarding nuclear waste, particularly to distinguish the difference between wartime liquid waste and the solid liquid waste produced by modern nuclear technology.

Ms. Kati Austgen, Director, Public Engagement and New Nuclear, Nuclear Energy Institute, presented information (Appendix C) regarding an overview of the nuclear power industry. She noted:

- The Nuclear Energy Institute is the policy and membership organization for the nuclear industry, with over 350 members in 17 countries.
- The United States operates 94 nuclear reactors at 53 nuclear plant sites, which generate 43.4 percent of clean electricity generation, or about 20 percent of total electricity generation, nationwide.
- The nuclear energy industry contributes to federal, state, and local taxes, provides high-paying jobs, and provides meaningful support to the nation's economic growth.
- 31 countries have signed a joint declaration to triple nuclear energy by 2050.
- Nuclear Energy Institute member companies are planning for new nuclear power investments and have identified opportunities for 100 gigawatts of new nuclear by the 2050s, which translates to roughly 300 SMR-scale plants.
- Numerous advanced reactor technologies are in development or licensing, with up to 530 reactors expected to be operating in North America by the early 2030s.
- The Nuclear Regulatory Commission plays a significant role in nuclear technology development, including safety and environmental reviews, construction oversight, reactor operator licensing, and operational oversight.

In a response to questions from committee members, Ms. Austgen noted:

- Refueling methods vary depending on the type of nuclear technology in use.
- Nuclear design companies may be publicly traded or privately financed, and certain reactor designs receive support from the United States Department of Energy.
- It is important for the committee to consider the timeline and rollout phases for nuclear energy development.
- A state may meet increasing energy demand by phasing nuclear energy into the state's current mix of energy sources.

SELECTION OF CONSULTING SERVICES

Ms. Gordon provided a memorandum entitled *Request for Proposal and Proposal Responses - Advanced Nuclear Energy Study*. She noted nine consultant organizations submitted proposals to the Legislative Council in response to the committee's request for consulting services.

JuniPower Inc.

Mr. Jeff Kummer, Founder and Chief Executive Officer, JuniPower Inc., and Mr. Tim Howle, Business Development, BWX Technologies, Inc., presented information (Appendix D) regarding a proposal (Appendix E) submitted in response to the committee's request for advanced nuclear energy consulting services. Mr. Kummer noted:

- JuniPower Inc. has ties to North Dakota and offers transferable experience from an analogous study conducted in Wyoming in collaboration with BWX Technologies, Inc. (BWXT).
- If selected, JuniPower Inc. will collaborate with BWXT to study both the feasibility of future nuclear facilities and the integration of nuclear energy with other state energy resources.

Mr. Howle noted:

- BWXT has been active in the nuclear energy industry for over 70 years.
- BWXT is involved in multiple facets of the nuclear power industry, including building over 420 nuclear reactors for the United States Navy, management of nuclear sites, and microreactor and SMR design for both military and civilian use.

In response to questions from committee members:

- Mr. Kummer noted BWXT would help inform JuniPower Inc.'s analysis of nuclear energy feasibility in the state, but JuniPower Inc. would take the primary role on the project.
- Mr. Howle emphasized the importance of resolving local project development issues, including issues related to land use, local permitting, supply chain infrastructure, support operations, and construction, before moving forward with nuclear reactor building and deployment.

Always On Energy Research

Mr. Isaac Orr, Founder and Vice President of Research, Always On Energy Research, presented information (Appendix F) regarding a proposal (Appendix G) submitted in response to the committee's request for advanced nuclear energy consulting services. He noted:

- Always On Energy Research (AOER) is a 501(c)(3) nonprofit organization dedicated to ensuring that every state in the country has affordable and reliable energy. If selected, four staff members with experience writing and conducting energy modeling would be dedicated to the project.
- Relevant experience includes studies with the North Dakota Transmission Authority and North Dakota Attorney General's office and a report for the John Locke Foundation in North Carolina examining alternative energy futures.
- If selected, AOER would answer key questions to evaluate why advanced nuclear energy may be a fit for North Dakota, and where reactors can be sited to maximize benefits and minimize costs.

In response to questions from committee members, Mr. Orr clarified AOER's bid for the initial scope of work was $250,000 and the work would be performed from a nonpartisan perspective.

AtkinsRéalis

Mr. Thomas Roddey, Vice President, Business Development, AtkinsRéalis, presented information regarding a proposal (Appendix H) submitted in response to the committee's request for advanced nuclear energy consulting services. He noted:

- AtkinsRéalis has 38,000 employees in 60 countries and provides project management and engineering consulting services, including numerous energy-related focus areas.

- AtkinsRéalis has played a role in the development and licensing of nuclear technology for over 60 years.
- If selected, AtkinsRéalis would provide a range of services, including services related to regulatory advice, project management, project controls and operations, feasibility and siting studies, market assessments, technology scouting, architecture and planning, business case development, and environmental assessments.

In a response to questions from committee members, Mr. Roddey noted if selected by the committee, AtkinsRéalis would provide a more detailed breakdown of hours and services and negotiate rates for the consulting services.

EXCEL Services Corporation and Envoy Public Labs

Mr. Brian Meadors, General Counsel and Executive Vice President of Legislative Initiatives, EXCEL Services Corporation, and Mr. Taylor Stevenson, Co-Founder and Chief Executive Officer, Envoy Public Labs, presented information (Appendix I) regarding a proposal (Appendix J) submitted in response to the committee's request for advanced nuclear energy consulting services. Mr. Meadors noted:

- EXCEL Services Corporation has over 40 years of nuclear experience, including expertise related to nuclear licensing, engineering, technical support, operations, feasibility and siting studies, and new nuclear analysis.
- EXCEL Services Corporation would plan to partner with Envoy Public Labs to support the community engagement components of the consulting work.
- If selected, EXCEL Services Corporation and Envoy Public Labs plan to provide a blueprint for action and recommendations for state and local government, utilities, grid operators, developers, investors, and industrial offtakers.

Mr. Stevenson noted:

- Envoy Public Labs specializes in community engagement and policy analysis for nuclear projects and has built trusted relationships with tribes, local officials, agriculture leaders, and communities.
- If selected, Envoy Public Labs would provide a grassroots outreach program by conducting research, direct interviews, and community outreach, and would turn their findings into practical recommendations.

In response to questions from committee members, Mr. Stevenson emphasized the importance of making a good-faith effort to engage with North Dakotans to give nuclear energy the strongest chance of success in the state.

University of Wyoming, Construction Research and Innovation Lab

Dr. Charlie Zhang, Associate Professor, Department of Civil and Architectural Engineering and Construction Management, University of Wyoming, presented information (Appendix K) regarding a proposal (Appendix L) submitted in response to the committee's request for advanced nuclear consulting services. He noted:

- He would serve as the principal investigator on the project, bringing 16 years of consulting experience in federal and state construction projects and expertise in energy infrastructure research, including nuclear feasibility.
- The project team would include three University of Wyoming graduate students with specialized expertise, and the team would be supported by the University of Wyoming's Nuclear Energy Research Center and Construction Research and Innovation Lab.
- If selected, the project approach would include collecting data, identifying site options, evaluating construction suitability, screening sites for environmental impacts and land use conflicts, examining location and accessibility, using decision support tools and criteria weighting to rank sites, and evaluating community acceptance and social considerations.

In response to questions from the committee, Dr. Zhang noted:

- He has not worked with either the Midcontinent Independent System Operators or Southwest Power Pool but is open to collaboration with the organizations.
- The proposal follows a standard format typically submitted by universities, and the University of Wyoming has the capacity to complete the project even if unforeseen circumstances prevent the principal investigator from doing so.

The RAND Corporation and North Dakota State University

Mr. Keith Crane, Senior Economist, The RAND Corporation, and Ms. Sarah Kirkpatrick, Associate Professor of Disaster Resilience and Emergency Management, North Dakota State University, presented information (Appendix M) regarding a proposal (Appendix N) submitted in response to the committee's request for advanced nuclear consulting services. Mr. Crane noted:

- The RAND Corporation (RAND) was founded in 1948 and has been conducting research on energy policy since 1965, including studies related to nuclear power and reactors.
- He has been working in research for 40 years in the public and private sector, including research related to nuclear power.
- If selected, the project would be broken into seven tasks to evaluate technical and economic feasibility, siting options, nuclear waste, and legal and regulatory issues, to help legislators assess whether and how to support deployment of nuclear power in the state.

Ms. Kirkpatrick noted:

- Researchers at the Department of Landscape Architecture, Disaster Resilience and Emergency Management would partner with RAND to provide analysis of societal and community impacts of nuclear energy by gathering mail survey data and organizing focus groups to facilitate dialogue related to key concerns, opposition, and support.
- She has conducted a number of studies using quantitative and qualitative assessments and would work with other professors and experts to conduct the work for this project.

In response to questions from committee members:

- Ms. Kirkpatrick noted professors would lead focus groups and develop community acceptance surveys, with potential support from graduate students.
- Mr. Crane noted RAND's engineering department has the necessary talent to work on nuclear energy issues.

Nucleon Energy Inc.

Mr. William Bridge, Co-Founder and Chief Technology Officer, Dustin Wilkes, Co-Founder, President, and Chief Executive Officer, and Ryan Tourigny, Co-Founder and Chief Development Officer, Nucleon Energy Inc., presented information (Appendix O) regarding a proposal (Appendix P) submitted in response to the committee's request for advanced nuclear energy consulting services. Mr. Bridge noted:

- Nucleon Energy Inc. is a nuclear development company founded in 2022, has a team with current energy development experience and subject matter expertise, and is a trusted partner with government, vendors, and energy companies.
- The company develops SMRs and has been advancing SMR siting studies in northern Alberta, Texas, and British Columbia with measurable progress toward licensing.
- If selected by the committee, the work conducted would deliver foundational analysis to determine potential sites and related issues, including Nuclear Regulatory Commission Appendix B compliant work products that can be used in future licensing applications.

In response to questions from committee members:

- Mr. Bridge noted SMRs offer a more balanced cost structure and manageable execution compared to other reactor types.
- Mr. Tourigny noted an effective strategy related to community engagement is to offer initial, neutral education on nuclear power because it would enable community stakeholders to build a common understanding.

Peritiacon LLC

Chairman Patten called for a representative of Peritiacon LLC to present regarding a proposal (Appendix Q) submitted in response to the committee's request for advanced nuclear energy consulting services. No representative came forward. Chairman Patten noted a representative of Peritiacon LLC had previously indicated they were unable to attend, but he extended the opportunity to present in case another representative was able to participate.

Fire2Fission

Mr. Mark Hinaman, Principal and Founder, and Ms. Camille Thompson, Energy Engineer, Fire2Fission, presented information (Appendix R) regarding a proposal (Appendix S) submitted in response to the committee's request for advanced nuclear energy consulting services. They noted:

- Fire2Fission has performed work in several areas of the energy development life cycle and consists of oil and gas professionals with expertise and experience in project execution and operations, large-scale energy infrastructure development, and nuclear energy project scoping.
- Fire2Fission would plan to collaborate with HaukriAscendent, Inc., a company with extensive nuclear expertise, as a strategic advisor.
- If selected, the company would use a variety of tools, including various software applications and a proprietary mapping software, and will take a comprehensive approach to produce multiple deliverables for each component of the scope of work.

In response to a question from a committee member, Mr. Hinaman noted energy companies and energy production provide numerous benefits to surrounding communities.

Committee members identified JuniPower Inc., EXCEL Services Corporation and Envoy Public Labs, and Nucleon Energy Inc. as the top three prospective consultant choices for further discussion and consideration. Committee members noted:

- While many of the prospective consultants are capable of conducting the study, the committee should evaluate which prospective consultant has the capacity to provide the requested information and most effectively present it to the Legislative Assembly.
- An important selection consideration is the prospective consultant's level of nuclear energy expertise.
- Community engagement will be an important component of the study, so the chosen consultant should be strong in this area.

It was moved by Senator Mathern, seconded by Representative Anderson, and carried on a roll call vote, that the committee recommend the Chairman of the Legislative Management contract with Nucleon Energy Inc. to provide consultant services related to advanced nuclear energy. Senators Patten, Conley, Cory, Hogue, and Mathern; Representatives Anderson, Koppelman, and Mitskog; and Citizen Members Gorman Prochaska, Haase, and C. Vigesaa voted "aye." Representatives Bolinske, Olson, and D. Vigesaa and Citizen Members Haugen-Hoffart and McCollam, voted "no."

It was moved by Senator Conley, seconded by Representative Bolinske, and carried on a roll call vote, that the committee recommend EXCEL Services Corporation and Envoy Public Labs as an alternate recommendation to the Chairman of the Legislative Management to provide consultant services related to advanced nuclear energy. Senators Patten, Conley, Cory, Hogue, and

Mathern; Representatives Anderson, Bolinske, Koppelman, Mitskog, Olson, and D. Vigesaa; and Citizen Members Gorman Prochaska, Haase, Haugen-Hoffart, McCollam, and C. Vigesaa voted "aye." No negative votes were cast.

Committee members noted potential interest in further exploring the feasibility of a visit to the Idaho National Laboratory to gain insights into advanced nuclear energy and spent fuel issues.

No further business appearing, Chairman Patten adjourned the meeting at 4:50 p.m.

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Megan J. Gordon
Code Revisor

ATTACH:19