



APPROVED 12-4-19

MINUTES
 City of Tacoma
 Public Utility Board Study Session
 November 13, 2019
 2:00 p.m.

Board Chair Larkin called the Public Utility Board study session to order at 2:01 p.m. at the Public Utilities Administration Building.

Present: Bryan Flint, Chrissy Cooley (arrived 3:17), Carlos Watson, Karen Larkin, Mark Patterson

Carbon Free Power Project featuring NuScale Small Modular Reactor Technology

Director Flowers made introductory remarks. As part of the Integrated Power's Resource Plan (IRP) series, Chair Larkin requested to hear about trends and emerging technologies in the carbon-free sense. In December, the topic will be battery technology and in January, the topic will be about pump storage for hydro. None of these technologies have been modeled in the IRP and are exploratory presentations for the Board on things happening in the industry.

Dr. Jose Reyes, Co-Founder and Chief Technology Officer for NuScale, provided an overview of NuScale Power. NuScale was formed in 2007 for the sole purpose of completing the design and commercializing a small modular reactor (SMR) – the NuScale Module. The initial concept had been in development and testing since the 2000 U.S. Department of Energy (DOE) MASLWR Program. Fluor, a global engineering and construction company, became a lead investor in 2011. In 2013, NuScale won a \$226M competitive U.S. DOE funding opportunity for matching funds. NuScale holds 450 patents granted or pending in nearly 20 countries and has 350 employees in six offices in the U.S. and 1 office in the U.K. NuScale is making substantial progress with a rigorous design review by the U. S. Nuclear Regulatory Commission (NRC). Phase four of NRC review is on schedule for completion in December 2019. NuScale's mission is to provide scalable advanced nuclear technology for the production of electricity, heat, and clean water to improve the quality of life for people around the world. NuScale helps utilities meet clean energy goals by providing carbon-free flexible power to balance the grid allowing increased penetration of renewable power such as wind and solar. It also provides highly reliable, scalable, and cost-effective, carbon-free power for repurposing fossil-fuel power plants and personnel. Dr. Reyes then outlined the ways NuScale is different than conventional nuclear power plants. It has a much simpler design and fewer small components; it has factory fabrication of the entire power module that greatly

reduces site construction time; it teamed early with an experienced engineering, procurement, construction firm to advise on the construction process; it expects 80 percent design completion before construction starts; it leverages existing supply chain by using conventional fuel and materials; and key innovative features being tested at full scale with significant collaboration with DOE joint use module program. Dr. Reyes then shared and walked through graphical representations of typical pressured water reactor, NuScale small modular reactor, core technology, approach to construction and operation, plant site overview, advancements to reactor safety, diverse energy platform, load-following with wind, and plant resiliency. Discussion on waste, i.e. used fuel ensued. What is normally heard about as nuclear waste is actually used fuel removed from the reactor, which still contains 96 percent of the unused energy that can be recovered to produce new fuel. This used fuel is currently stored in pools of water or in robust containers on a concrete pad. All of the used nuclear fuel produced by the nuclear energy industry in the last 60 years has been managed and stored, primarily at plant sites in pools or dry cask storage. The NuScale power plant design includes a proven used fuel management system. Used fuel management, storage, and disposal is regulated by the NRC and the DOE has responsibility for its ultimate disposal. Recycling used fuel could reduce the burden of mining and disposing used fuel, making the nuclear fuel cycle more sustainable. Recycled fuel is a suitable fuel for NuScale reactors. Recycling has been in successful use in several markets, such as France, for decades. Dr. Reyes concluded by providing an overview of NuScale's design certification process and regulatory rulemaking.

Doug Hunter, CEO of the Utah Associated Municipal Power Systems (UAMPS) and Mark Gendron, Special Advisor, provided information on UAMPS and SMR. UAMPS is an energy services interlocal agency publicly owned by utilities with 47 members in six western states. UAMPS generation projects, approach to decarbonization, and its Carbon Free Power Project (CFPP) were summarized. This was followed by an overview of the CFPP development hypothesis: NuScale pursues design certification application; UAMPS pursues development of a combined operating license application and a contractual subscription; UAMPS, NuScale and DOE develop a value proposition. Mr. Hunter then provided an overview of UAMPS subscription efforts and described the 120 plus public meetings with members participating in the project study. The power sales contract became effective in July 2019 with 35 participants and 213 MW. In response to a Board request, Mr. Hunter further described the public support and opposition for the project. Mr. Hunter explained that the first step is to make sure everyone is educated. Most elected officials have greenhouse gas and global warming concerns and there were questions about waste. The U.S. has systems to manage nuclear energy, but there is no system in the U.S. to manage greenhouse gases. There were many workshops and community tours. Meetings held with organizations in opposition were held and there was transparency with public information. Director Flowers reiterated that at this point, Power is only looking at emerging technologies and this is not being modeled at the time.

Legislative Policies and Legislative Agendas

Clark Mather, Community and Government Relations Manager, stated that TPU's legislative policies provide staff direction on a variety of utility-related issues and the legislative agenda includes some of the specific policy outcomes that TPU staff will be seeking. Staff recommends maintaining TPU's current legislative policies; they are consistent with the city's legislative policies. Board Members had no objection to having the policies remain the same. Mr. Mather reviewed the proposed federal agenda for TPU and each of the operating divisions. TPU: Protecting/amending tax-exempt financing. Water: Support implementation of the Howard Hanson Dam/Additional water storage project; Support funding of the Water Infrastructure Finance and Innovation Act; Support funding for the Drinking Water State Revolving Fund. Rail: Support permanent extension of the 45G tax credit; Establish capital grant program for short line railroad. Power: Increase funding for the low-income Home Energy Assistance Program; provide funding for the hydropower incentive program; support improvements; support proposals to improve BPA cost competitiveness; and support legislation to maintain control over pole attachments. Marian Dacca, State Relations Manager, summarized the proposed state agenda for the operating divisions. Power: Decarbonization/acknowledge the value of carbon-free hydropower. Water: Support the Public Works Trust Fund, Support Improvements to the Underground Utility Damage Prevention Act. Rail: Support Tacoma Rail's application for funding through the State Rail Grant Program. Mr. Mather concluded by reviewing the schedule going forward. This item will come before the Board on December 4 for consideration and to both the Council and Board on December 10 for a joint study session. The Council is scheduled to vote on this on December 10, 2019. The 2020 state legislative session begins on Monday, January 13, 2020 and is a short session scheduled for 60 calendar days.

Tacoma Power: Quarterly /energy Risk Management and Power Supply Update

Todd Lloyd, Assistant Power Section Manager, provided a summary of the power supply. Hydro conditions continue to be dry; 2019 is one of the lowest water years on record and the lowest flows on record were experienced this summer. The new water year started on October 1; October was dry and so is November so far. Tacoma Power is selling less power than budgeted and purchasing more. Mr. Lloyd shared graphical representations of system flows.

Ying Hall, Energy Risk Manager, stated that actual wholesale net revenue for Tacoma Power is \$14.6M below budget year to date. Ms. Hall walked through graphical representations of revenues and revenue projections. Ms. Hall then provided an overview of the hedging and credit risk programs. The hedging program is part of Tacoma Power's energy risk management policy to stabilize net revenues from wholesale operations and protect against very low wholesale revenue outcomes. The hedging policy enforces dollar cost averaging of surplus sales and prohibits holding deficit positions. Tacoma Power frequently sells electricity to wholesale trading partners or 'counterparties' and incurs

credit exposure that the utility could lose in the event of a counterparty default. Tacoma Power manages credit risk by extending credit to investment grade counterparties only, setting exposure limits based on creditworthiness, daily monitoring of credit quality, daily monitoring of exposure, and has actions to stop trading with a counterparty. Bill Berry, Rates, Planning, and Analysis Manager added that coverage and liquidity are looking good, there is a rate stabilization fund, and Power does not need to call on that yet.

Joe Wilson, T&D Manager, provided the Board with a wildfire briefing. Mr. Wilson shared what role transmission lines can play in resource adequacy using the California wildfires as an example and shared examples of past events.

Discussion of Board Policies

Chair Larkin stated that Strategic Directives four and five, the Board-Director Linkage policies, and the Government Process policies will be reviewed at the December 4, 2019 Board study session.

Executive Session

Board Member Patterson moved to convene an executive session at 5:30 p.m. for 25 minutes for the purpose of discussing pending and potential litigation per RCW 42.30.110(1)(i); seconded by Board Member Flint. The executive session was extended at 5:55 for ten minutes. The executive session was adjourned at 6:05 p.m.

Adjournment

The study session was adjourned at 6:05 p.m. until the next regularly scheduled study session on Wednesday, December 4, 2019 at 3:00 p.m. followed by a regular meeting at 6:30 p.m..

Approved:



Karen Larkin, Chair

Approved:



Mark Patterson, Secretary