ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ENERGY
February 12, 2015
10:19 a.m.

MEMBERS PRESENT

Representative Jim Colver, Co-Chair
Representative David Talerico
Representative Cathy Tilton
Representative Matt Claman
Representative Adam Wool

MEMBERS ABSENT

Representative Liz Vazquez, Co-Chair
Representative Benjamin Nageak

COMMITTEE CALENDAR

PRESENTATION: GOLDEN VALLEY ELECTRIC ASSOCIATION

- HEARD

PRESENTATION: ALASKA RAILBELT COOPERATIVE ELECTRIC & TRANSMISSION COMPANY

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

CORY BORGESON, President and CEO
Golden Valley Electric Association
Fairbanks, Alaska
POSITION STATEMENT: Provided a PowerPoint presentation entitled, "Understanding Energy in the Interior," and dated 2/12/15.

DAVID GILLESPIE, CEO
Alaska Railbelt Cooperative Electric & Transmission Company
(No address provided)

POSITION STATEMENT: Provided a PowerPoint presentation entitled, "Grid Restructuring and Open Access," and dated 2/12/15.

ACTION NARRATIVE

10:19:19 AM

CO-CHAIR JIM COLVER called the House Special Committee on Energy meeting to order at 10:19 a.m. Representatives Talerico, Wool, and Colver were present at the call to order. Representatives Tilton and Claman arrived as the meeting was in progress.

PRESENTATION: GOLDEN VALLEY ELECTRIC ASSOCIATION

10:20:08 AM

CO-CHAIR COLVER announced that the first order of business would be a presentation by the Golden Valley Electric Association on understanding energy in the Interior.

10:20:20 AM

CORY BORGESON, President and CEO, Golden Valley Electric Association (GVEA), provided a PowerPoint presentation entitled, "Understanding Energy in the Interior," and dated 2/12/15. Mr. Borgeson gave brief background information on GVEA as follows: serves nearly 100,000 residents; serves a service territory of 5,973 square miles from Delta Junction to Cantwell; situated similarly to an island at the end of a long transmission line; serves an area with extreme temperatures (slide 2). He further informed the committee that GVEA is an electric cooperative owned by its 34,000 members, who vote for the board of directors. Ten years ago GVEA took measures to maintain its high reliability record by installing a battery storage system to respond during an outage; in fact, in 2014 it prevented a large number of outages from occurring. Golden Valley Electric Cooperative has the capacity to generate 296 megawatts (MW) of electricity and its peak load in 2014 was 201.6 MW; in 2014 retail sales totaled 1.22 billion kilowatt (kW) hours (slide 3). Total sales in 2014 were down as members are using less electricity in response to GVEA's business and homeowner energy conservation programs; average residential usage has lowered from 750 kW hours per month to less than 600 kW hours per month. In response, GVEA is cutting costs to keep rates as stable as possible. Sources of generation are diversified: hydroelectric (hydro), coal, natural gas, oil, and wind. Mr. Borgeson pointed

out GVEA's source of hydro is the Bradley Lake Hydroelectric Project (Bradley Lake) located close to Homer. Having a diversified portfolio of generation has served GVEA members well (slides 4 and 5).

10:25:55 AM

REPRESENTATIVE WOOL asked for the percentage of GVEA's electricity that comes from the [Alaska Intertie transmission system (Alaska Intertie)].

MR. BORGESON answered that is represented by the percentage of natural gas which was 33 percent in 2013, and 35 percent in 2014, as shown on slide 4.

REPRESENTATIVE WOOL surmised hydropower also comes over the Alaska Intertie, making the total 41 percent.

MR. BORGESON said yes. On a typical summer day, GVEA generates about 150 MW, and brings about 80 MW on the intertie. He returned attention to Bradley Lake, noting that the project is owned by the Alaska Energy Authority (AEA), Department of Commerce, Community & Economic Development (DCCED), and is considered an independent power producer (IPP). Bradley Lake was developed by the state, and is considered to be a model for financing energy projects in Alaska. For the funding to build the project, the state provided 50 percent, and 50 percent was thirty-year bonds to be paid back by the Railbelt utilities on a fifty-year contract for the use of the electricity. The bonds will be paid in about seven years, at which time the utilities' payments will go to [AS 37.05.520 Railbelt Energy Fund].

CO-CHAIR COLVER asked whether the Delta oil-fired facility is always in operation.

MR. BORGESON said the Delta power plant is very expensive to operate and is rarely in operation. In further response to Co-Chair Colver, he advised the power plant is there for extra reliability in the Delta Junction area.

CO-CHAIR COLVER asked whether GVEA generates power for U.S. Army Garrison Fort Greely.

MR. BORGESON stated Fort Greely generates power, and also takes about two MW from GVEA.

REPRESENTATIVE WOOL stated that the Aurora [Energy Chena Power Plant] is an IPP and asked what percentage of GVEA's coal consumption is from the Aurora plant.

MR. BORGESON estimated Aurora Energy supplies about 25 MW and the Healy Unit 1 power plant produces about 25 MW.

10:30:16 AM

MR. BORGESON returned attention to Bradley Lake, stating that it was a very successful project and its power is low-cost; however, the transmission lines are constrained and power from Bradley Lake is not always available when needed. One advantage of hydro is that generation can be stored by the water level, so all of GVEA's allotment is provided, but not at the optimal time. This situation costs GVEA money, thus GVEA is significantly interested in having the transmission lines unconstrained. Also, power from Bradley Lake is limited by the level of the lake and the facility cannot deliver 120 MW for a long period of time. The Alaska Energy Authority is working on the Battle Creek Diversion project which would divert runoff into the lake and increase generation from the existing facility.

CO-CHAIR COLVER asked for the average output from Bradley Lake.

MR. BORGESON said GVEA averages 11 MW from Bradley Lake, which is about 20 percent, and he was unsure of the total. The power is dispatched by Chugach Electric Association Inc. (CEA). Eva Creek Wind is owned by GVEA, and was built with $13 million from the state and federal financing at 1.3 percent interest. The project averages 33 percent, which is a good capacity factor for a wind project. In winter, more power is needed and more wind is blowing; however, wind generation requires backup generation at some cost (slide 6). Small independent power producers, such as residential solar and wind projects, are accommodated by GVEA's Sustainable Natural Alternative Power (SNAP) program which allows IPPs to hook into the system and get paid for their electricity through net metering authorized by the legislature and the Regulatory Commission of Alaska (RCA) in 2010. At this time, GVEA has 53 IPPs; 412 GVEA members pay an extra amount to offset the higher cost of renewable energy from SNAP producers, thus IPPs get more than GVEA's avoided cost for their power (slide 7).

10:36:06 AM

CO-CHAIR COLVER asked whether the extra amount to any small producer is a $0.10 tariff rate.

MR. BORGESON said the amount varies each quarter due to fuel cost. In further response to Co-Chair Colver, he said IPPs receive a credit as Co-Chair Colver described, but net metering reduces the amount of electricity delivered by running the meter backwards.

REPRESENTATIVE WOOL provided a scenario in which a consumer generated more power than is consumed, and asked whether a credit would accrue.

MR. BORGESON said yes, or the consumer would receive a check; Delta Wind Farm produces more power, and it receives a check. A special tariff was developed for IPPs that put up to two MW of electricity into the grid, and no regulation costs are charged. He returned to the presentation, noting that GVEA purchases 25 MW from Aurora Energy at $75 per MW hour, 60 MW from CEA, and other amounts from Anchorage Municipal Light & Power (ML&P), and Homer Electric Association (HEA) (slide 8). In response to Co-Chair Colver, he said CEA is GVEA's main source of electricity, which is delivered to Fairbanks at a price that varies from $95-$105 per MW hour.

10:40:28 AM

CO-CHAIR COLVER asked how much of the cost is for transmission through other utility districts.

MR. BORGESON estimated CEA's transmission rate is about $8-$9 per MW hour, and GVEA has to pay about $6 per MW hour to transmit across the Alaska Intertie; in fact, GVEA uses 96 percent of the electricity transmitted across the Alaska Intertie thus pays 96 percent of the maintenance of the transmission line. Also, line losses cost about $4-$6 per MW hour. In further response to Co-Chair Colver, he said, "So FOB from Chugach, is about 100 to 105, and it varies, sometimes a little bit less, sometimes a little bit more ... ten to ten and a half cents."

CO-CHAIR COLVER inquired as to AEA's interest in joining the transmission cooperative and contributing assets thereto.

MR. BORGESON stated that AEA has requested direction from the new administration and is interested. He said he saw no problem with AEA being a part of a transmission company (TRANSCO) or

putting a line in. He opined that all of the transmission lines should be part of a TRANSCO, including the Alaska Intertie. Mr. Borgeson returned attention to the Healy Unit #1 and Unit #2 power plants (slide 9). Unit #2 is a 50 MW plant which will be running in about two months; as part of the air permitting process, GVEA agreed to install additional environmental controls which will require two additional years of construction, although the plant will be able to run during the two-year period. The plant was purchased from the Alaska Industrial Development and Export Authority (AIDEA), DCCED, in 2012 or 2013 (slide 10).

10:43:27 AM

REPRESENTATIVE TALERICO asked whether the proposed Environmental Protection Agency (EPA) carbon dioxide (CO2) emission regulations would impact the production of the coal-fired plant.

MR. BORGESON stated that the proposed EPA regulations identified five plants in Alaska that would be subject to the new regulation. Not included are the North Pole Expansion Plant that runs on naphtha, and oil-fired plants. Included in the proposed regulation are Healy Unit #1, and four others. The regulations call for a 26 percent reduction in emissions, some of which can be accomplished by closing the Beluga and Southcentral plants which are less efficient. Unit #2 was not included as a base unit and is "in transition in between the rules;" however, to comply with the proposed regulations, increased efficiency will be required and GVEA is concerned about Unit #1 being shut down, which will raise the cost of electricity. He opined that shutting down a coal plant in Alaska and burning more diesel does not improve the CO2 limits.

10:46:45 AM

CO-CHAIR COLVER asked how ratepayers will be affected by the "regulatory morass."

MR. BORGESON acknowledged that there is a cost to regulation; GVEA has two staff members and also uses consultants to respond to regulations and other work required by RCA.

REPRESENTATIVE WOOL questioned which generation source will be displaced when Healy Unit #2 is online.

MR. BORGESON answered that Healy Unit #2 will displace some oil-fired power, and gas-generated power from the south. In further

response to Representative Wool, he explained that the cost of power from Healy will be very close to the cost of power from CEA, ML&P, and HEA, but Healy will provide stability - a long-term low-cost coal supply - while the price of oil will fluctuate along with the price of gas from Cook Inlet.

REPRESENTATIVE WOOL surmised if fees, rates, or tariffs to move electricity from a gas-fired plant in the south were less, the power from Healy would be more expensive.

MR. BORGESON advised that the cost of transmission will be spread out amongst all six of the Railbelt utilities; therefore, what will be gained from one transmission rate will be economic dispatch; in fact, under certain circumstances, the power from the coal plant may be cheaper than the gas- or oil-fired power. Economic dispatch will allow the utilities to more efficiently dispatch all of the types of generation and thereby gain significant savings.

10:51:20 AM

A video describing operations at the GVEA dispatch center was shown from 10:51 a.m. to 10:55 a.m.

10:56:01 AM

MR. BORGESON advised that dispatching power creates big savings for GVEA; furthermore, an independent system operator (ISO) or a unified system operator (USO) for the Railbelt would dispatch generation from all of the utilities, and savings would be significant (slides 11 and 12). Although some power plants may be shut down for periods of time, the savings would be enough to keep staff as needed and to save members money. He then provided a brief history of the transmission system in the Railbelt, noting that prior to construction of the Alaska Intertie in the 1980s, the system was not connected. The Alaska Intertie allowed GVEA to benefit from gas in the Cook Inlet (slide 13). In the 1990s, the system became more robust around the Bradley Lake Hydroelectric Project, and GVEA added a transmission line to the Fort Knox gold mine, which was possible because of the Alaska Intertie (slide 14). In the 2000s, improvements to the Railbelt system were: GVEA built the Northern Intertie with money provided by the legislature; GVEA installed the battery energy storage system (BESS) to stabilize the long transmission line; the Strategic Missile Defense System line was installed; Alyeska became electrified by Pump Station #9; Pogo gold mine transmission line was installed; North Pole

to Carney transmission line was installed (slide 15). However, the transmission system needs further improvement, and forming a TRANSCO and a USO are key to finding financing and a solution. An upcoming project is adding a substation at Clear Air Force Station for a four MW system and backup generation. Also, GVEA is part of the Alaska Railbelt Cooperative Electric & Transmission Company (ARCTEC) and supports a USO or ISO; all six Railbelt utilities have signed onto guiding principles of a Railbelt TRANSCO agreement in conjunction with the American Transmission Company.

11:01:19 AM

CO-CHAIR COLVER asked when the aforementioned agreement was signed.

MR. BORGESON responded the agreement was about four months old (slide 16). He turned attention to GVEA's efforts to purchase power from Fire Island Wind LLC, Cook Inlet Region, Inc. (CIRI). The cost to buy power coming from phase 2 of the wind farm and across the undersea cable was about $2.81 per MW hour just for operation and maintenance cost, because the construction of the cable was by a state grant. The power was then to travel via CEA's system for an interruptible tariff rate modeled at $11. An interruptible rate was a concern for GVEA because it may have to pay for wind power even if the transmission system to Fairbanks were down. At that point, the firm cost was estimated to be $43 per MW hour. The power was then to go to Matanuska Electric (MEA) which was to shape and schedule the wind power, along with some Bradley Lake hydropower, for a wheeling cost of $2.17, plus operation and maintenance cost of $7.59; therefore, the worst case was that the power would cost $204 per MW hour, and at the very least $140 per MW hour to Fairbanks. He pointed out that some of the cost was for the regulation of wind costs by MEA's Wartsila cycling engines. Although GVEA has a good working relationship with CIRC, CIRI was extremely disappointed by GVEA's decision not to purchase its wind power from phase 2 of the Fire Island Wind Project (slide 17). In response to Co-Chair Colver, Mr. Borgeson said AEA charges about $6 per MW hour for operation and maintenance.

CO-CHAIR COLVER questioned why there is not the same problem when transmitting gas-generated power from CEA.

MR. BORGESON explained the problem is the same when CEA sells power, although it can "net out the wheeling costs," but GVEA still has to pay the Alaska Intertie cost, thus when CEA is

$100-$105 per MW hour there are some transmission tariff costs included. Power sold to GVEA from ML&P includes costs from the Alaska Intertie and also the CEA wheeling cost. A TRANSCO would establish one price.

CO-CHAIR COLVER inquired as to whether there is a pathway to get all of the parties together, or if it is necessary for CEA "to take the lead ..."

MR. BORGESON acknowledged that CEA has taken the lead and has completed a significant amount of work; in fact, the utilities are moving forward with the American Transmission Company.

CO-CHAIR COLVER asked whether MEA's new gas-fired system will be competitive with wind.

MR. BORGESON said negotiating with MEA was a problem because costs were estimated conservatively; after two years, MEA will have a better idea about its costs. In addition, there may be competition from ML&P and CEA. He pointed out that the proposed wind was 20 MW with a 30 percent capacity factor; although the Railbelt needs this energy, Anchorage utilities' gas prices are now low, and the wind power was expensive. Mr. Borgeson closed, saying that GVEA feels that electric costs have impacts to the community and to mining development in the state, and thus is "embracing this TRANSCO and independent system operator."

11:11:04 AM

REPRESENTATIVE WOOL remarked:

> So, in looking at your diagram from the Fire Island Wind and all of the expenses and fees ... if you're embracing TRANSCO then a lot of this, a lot of these problems, there are fees, but it won't be, it'll be easier to do, cheaper.

MR. BORGESON agreed there will be fees, and all of the costs for transmission in the entire Railbelt seem to equal about $46 million-$47 million per year; when divided amongst all of the kilowatt hours sold, there will be "losers and winners in the transmission cost." For example, a utility with a lot of generation and little transmission is going to pay more, but the savings comes with having one price which leads to economic dispatch. All of the utilities are modeling the economics.

REPRESENTATIVE WOOL observed this problem has not been solved in the past and asked whether the situation is different now.

MR. BORGESON opined this has changed: CEA, ML&P, and GVEA used to generate the electricity; over the past two years, HEA and MEA have begun generation. This has made the rules, regulations, and management of the system more dynamic.

11:14:36 AM

The committee took an at ease from 11:14 a.m. to 11:21 a.m.

PRESENTATION: ALASKA RAILBELT COOPERATIVE ELECTRIC and TRANSMISSION COMPANY

11:21:23 AM

CO-CHAIR COLVER announced that the final order of business would be a presentation by the Alaska Railbelt Cooperative Electric & Transmission Company.

11:21:32 AM

DAVID GILLESPIE, CEO, Alaska Railbelt Cooperative Electric & Transmission Company (ARCTEC), provided a PowerPoint presentation entitled "Grid Restructuring and Open Access," and dated 2/12/15. He informed the committee the utility industry is facing many changes and exciting challenges. Mr. Gillespie explained that ARCTEC was formed by four of the largest cooperatives in the Railbelt to advance issues of common concern. Unlike the Alaska Power Association (APA), ARCTEC is focused on the Railbelt and issues associated with its interconnected grid. He gave a brief personal history on his experience in the industry (slide 3). Mr. Gillespie explained that ARCTEC's mission is to deliver reliable and sustainable energy to its customers at the lowest possible cost, with an obligation to serve all who are connected to its system; furthermore, the Railbelt transmission system was built for the foregoing purpose, and ARCTEC has no shareholders, only members (slide 4). Action must be taken to address the Railbelt transmission system for the following reasons: hundreds of millions of dollars are lost each year in the form of uneconomic dispatch - economic dispatch is the simple concept of using the cheapest energy available; it is difficult to build projects that have regional benefits; despite the Public Utility Regulatory Policies Act (PURPA) and the Regulatory Commission of Alaska (RCA), independent power producers (IPPs) have

difficulties getting projects developed; reliability standards are not uniformly adopted; there is no entity responsible for implementing an integrated plan (slide 5).

11:26:20 AM

MR. GILLESPIE said there are two problems: a lack of transfer capability prevents cheap power from going where it is needed, and there is no structure because the utilities are separate (slide 6). First turning to the structural problem, he explained that each utility has an obligation to its members, thus each have transmission charges, there is little system-wide planning, and there are competing priorities. Furthermore, the system cannot deliver existing or new sources of generation. The system is complicated, which leads to frustration and an atmosphere of mistrust (slide 7). Mr. Gillespie acknowledged many points in agreement with the Alaska Independent Power Producers Association (AIPPA), except for its support of proposed legislation. Instead of legislation, he suggested relying on RCA for implementing new regulations. Additional points of agreement are fair and nondiscriminatory access, open access to an independent system operator (ISO), a unified system operator (USO), or a transmission company (TRANSCO), and measured outcomes (slide 8). He remarked:

> The message with the slide is, everybody already agrees on what we need to do, let's talk about how we get there.

MR. GILLESPIE stated the first guiding principle for a USO is stakeholder governance.

11:30:11 AM

CO-CHAIR COLVER asked whether a TRANSCO would be a separate corporation with shareholders or board members from the utilities, and representation from IPPs.

MR. GILLESPIE advised that normally a system operator is a nonprofit entity with members who are the stakeholders. The members are utilities, IPPs, and customers, but the board is not dominated by utilities. He returned to the guiding principles of a USO: governance by RCA and a regulatory compact; accepts nationally recognized reliability standards; accepts interconnection standards; plans system upgrades; provides nondiscriminatory access and service; provides economic

dispatch; respects existing agreements and investments (slide 9).

REPRESENTATIVE WOOL asked how previous agreements would be recognized.

MR. GILLESPIE provided the example of a utility that is now generating power and in the future may have its investment "stranded" because the generation is not as heavily in demand. Instead, a utility's investment should continue to be recovered in rates because its generation is still useful. Mr. Gillespie said ARCTEC's objectives are to capture the economic benefits through better integration, economic dispatch, more efficient use of the transmission system, and opportunities for IPPs. He acknowledged that IPPs provide service, accept risk, are innovative, and are lower cost. Also, there needs to be coordinated planning, an efficient use of capital, a regulatory framework that is understandable, transparent, and stable, and a regulatory regime overseen by RCA (slide 10). The role for ARCTEC is to act as a catalyst that provides a venue for change, and to provide a forum for stakeholders.

11:36:50 AM

CO-CHAIR COLVER surmised that ARCTEC was not waiting for a study that will be coming from RCA on the system operator concept.

MR. GILLESPIE said no. Although RCA will be opening an informational docket in the near future seeking information on this process, ARCTEC intends to garner consensus on a proposal to submit to RCA for implementation. Returning to ARCTEC's role, he said ARCTEC can ultimately provide services to a USO such as settlement services, accounting, and energy clearing (slide 11). He turned to the difference between a USO and a TRANSCO: a USO would establish and implement a set of rules; a TRANSCO would own and operate assets, deploy capital, and implement policy (slide 12). Further differences are: a USO does not own assets, and a TRANSCO does; a USO makes and enforces rules, a TRANSCO follows the rules; a USO is stakeholder governed, with diverse management, a TRANSCO is governed by its owners; both entities have regulated tariffs; a USO provides planning for the transmission system, a TRANSCO implements the transmission system; a USO is always nonprofit, a TRANSCO is usually a for-profit entity; a USO is a policy and rulemaking body, a TRANSCO is an operating body (slide 13). Mr. Gillespie observed that ARCTEC's focus is primarily on a USO,

because it is possible to have either a USO or a TRANSCO, but it is better to have both.

11:40:48 AM

MR. GILLESPIE continued to infrastructure financing: The transmission infrastructure in Alaska needs further development to achieve the economic benefits that come from economic dispatch; however, the state has granted money for infrastructure in the past, and cooperatives are not financially capable of supporting large new debt for capital projects. In fact, recent generation projects have consumed the debt capacity that utilities have; in addition, the state is less able to fund large projects. Finally, no one has been responsible for "the big picture," such as the constrained transmission system from the Kenai Peninsula to Fairbanks (slide 14).

CO-CHAIR COLVER referred to slide 15, which listed three projects, and said he understood a section at Willow was still constrained as well.

MR. GILLESPIE responded that the projects on slide 15 are a partial list of projects being done in sections, and which represent $30 million of $100 million left to do. Also shown was the Susitna-Watana Hydro project, which ARCTEC believes should be funded by the state through licensing (slide 15). He then advised that there are different methods for financing infrastructure and transmission projects (slide 16):

- Funding by the Bradley Lake Hydroelectric Project model wherein the state bonds a project and the users of the project - in this case the utilities - pay the debt service through their electric rates.
- TRANSCO owners can bring private capital.
- Existing state assets can be restructured or refinanced.
- Public/private investment and loans backed by the state's credit.
- Other nontraditional methods.

MR. GILLESPIE concluded that the Railbelt utilities agree with the need to implement the USO concept, thus the legislature should encourage a stakeholder process presided over by RCA. Also, ARCTEC would like to be the catalyst to "make that happen." Finally, the state should encourage alternative forms of financing in order to enhance infrastructure and generate economic activity (slide 17).

11:47:38 AM

CO-CHAIR COLVER asked for ARCTEC's recommendation on the next step to implementation of the concepts of an ISO and a TRANSCO, and whether legislative action is appropriate at this time.

MR. GILLESPIE opined the next step is to continue the efforts to begin the groundwork on a USO and a TRANSCO. Soon, RCA will release its opinion on its jurisdiction in this matter; if the answer is no, RCA may need enabling legislation, which ARCTEC will request from the legislature "in the next month or so."

REPRESENTATIVE WOOL surmised that ARCTEC is in a USO position at this point, and a TRANSCO is a yet-to-be-determined holding company that would own, operate, and maintain the transmission lines.

MR. GILLESPIE agreed, and restated that six utilities have "signed on to a set of [memorandum of understanding] MOU principles which is moving the ball forward on that, on that front." In further response to Representative Wool, he added that a USO is about the rules, enforcement, and standards, and a TRANSCO is about implementing. He clarified that ARCTEC is not yet a TRANSCO.

11:50:53 AM

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 11:50 a.m.