Intertie Management Committee
Resolution No. 24-01

In Support of Application For Grant Preventing Outages and Enhancing the Resilience of the Electric Grid Formula Grant

INTRODUCTION

The Alaska Intertie Management Committee is responsible for the management, operation, maintenance, and improvement of the Alaska Intertie Project (Alaska Intertie), subject to the non-delegable duties of the Alaska Energy Authority (AEA). The Alaska Intertie transmission line is part of the Alaska Railbelt transmission backbone. It connects the population centers of Interior Alaska within the GVEA service area with the populations centers of South Central Alaska and Kenai Peninsula.

PURPOSE

The purpose of Resolution 24-01 is to express support for the grant application to the Department of Energy for the Alaska Intertie Snow Load Resiliency Project (the "Project"), and to authorize Golden Valley Electric Association ("GVEA") to serve as the Sub-Recipient on behalf of the IMC.

IMC RESOLUTION 24-01

WHEREAS, the Intertie Management Committee is responsible for the management, operation, maintenance, and improvement of the Alaska Intertie Project ("Alaska Intertie"), subject to the non-delegable duties of AEA.

WHEREAS, the Alaska Intertie has experienced the impacts of unbalanced snow loading along its 170-mile long, 345kV rated Intertie causing conductors to sag near or at ground level. Public and wildlife safety hazards and disruptive ground fault trip events with widespread load shedding and transmission system instability have resulted from the unbalanced snow loading.

WHEREAS, the current practice used by the IMC to address unbalanced snow loading is to dispatch personnel to patrol the line by snow mobile or helicopter whenever more than two inches of snow is recorded in Talkeetna near the southern end of the Intertie or when a line fault and trip occurs.

WHEREAS, the IMC finds that the proposed Project scope will both harden and improve the southern 80 miles of the Alaska Intertie (Douglas Substation to Susitna River crossing) and minimize the intermittent and excessive conductor sag caused by unbalanced snow loading.

WHEREAS, the IMC finds that the Alaska Intertie hardening and resiliency Project will increase reliability, and promote development and operation of new renewable energy projects across the Alaska Railbelt and that the Project will address the ongoing unbalanced snow loading, and benefit the Intertie by reducing outages and operating costs, increasing the resiliency of the Intertie and benefit the entire Railbelt.

WHEREAS, attached as Exhibit 1 to this Resolution, and incorporated herein by this reference is the application for the Grant Preventing Outages and Enhancing the Resilience of the Electric Grid Formula Grants, pursuant to the Bipartisan Infrastructure Law – Section 40101(d).

WHEREAS, the matching fund allocation will be based on the previous 5 year Intertie budget allocations excluding Capacity charges, that being GVEA at 81.95%, CEA at 6.69%, and MEA at 11.36%.

NOW, THEREFORE BE IT RESOLVED THAT, the foregoing recitals and Exhibit are incorporated herein by this reference.

BE IT FURTHER RESOLVED, the IMC is in support of the application for the Project to be filed by GVEA.

BE IT FURTHER RESOLVED, so long as the final application is substantially similar to Exhibit 1, the Chair is authorized to execute any additional documents necessary to prepare a complete application for the Project and to the extent necessary as authorized by the Board of Directors for GVEA, Chugach Electric Association, Matanuska Electric Association, and Homer Electric Association.

2/15/2024 | 9:26:50 AM AKST

DATED at Anchorage Alaska, this _____ day of February, 2024.

DocuSigned by:
Andrew Laughlin, PE
CC7E1DDE555044C...

Chair, Andrew Laughlin

Attest: DocuSigned by:
Bill Price
AC8E73A470CE408...

Secretary, William Price

EXHIBIT 1
APPLICATION

Bipartisan Infrastructure Law – Section 40101(d) – PREVENTING OUTAGES AND ENHANCING THE RESILIENCE OF THE ELECTRIC GRID FORMULA GRANTS – APPLICATION FORM

Application Instructions

Applications for the Preventing outages and enhancing the resilience of the electric grid formula grants program will be accepted from **January 2nd, 2024 to February 16th, 2024**. To apply, please complete the following application form in its entirety and enclose the required following supplemental supporting documents. *Use of additional space is permissible by attaching supplemental material.*

a) **Authorization Letter** from the eligible entity electing to submit an application, signed by an authorized representative of the entity
b) **Project budget** using DOE SF-424 Budget Justification Notebook
c) **Eligible Entity Request Form** (if applicable)
d) **Environmental Questionnaire** (NEPA)
e) **Resilience Project Subaward Notification Form**

Application Form

A. Sub-Recipient Information

Sub-Recipient Name:	Golden Valley Electric Association		
Entity Type:	An electric grid operator	[x]	Other [ ] *If "other", please describe:*
	An electric storage operator	[x]	
	An electricity generator	[x]	
	A transmission owner or operator; or a State owner of transmission or generation assets without a CPCN	[x]	

	Any other relevant entity, as determined by the Secretary (of DOE) ☐	
Eligible Entity Point of Contact:	Name:	Keith Palchikoff
	Title:	Grid Modernization Manager
	Phone:	1-907-451-5640
	E-mail:	kepalchikoff@gvea.com
	Address:	758 Illinois St. Fairbanks AK

B. Project Information

Project Title:	Alaska Intertie Snow Load Resiliency	
	Engineering Design/Permits/Site Control Costs*:	$ 433,020
	Construction Costs†:	$ 13,279,170
	Administrative Expenses‡:	$ $40,000
	Other Miscellaneous Costs§:	$ $5,000
	1/3 Eligible Entity Cost Including In-Kind Match**:	$ 2,997,277 + $442,020 = $3,439,297
	Total Federal 40101(d) Cost: *(This is your grant request)*	$ 10,317,892
Description of Primary Service Area: *(counties/cities of eligible entity)*	The Alaska Intertie transmission line is part of the Alaska Railbelt transmission backbone. It connects the population centers of Interior Alaska within the GVEA service area with the populations centers of South Central Alaska and Kenai Peninsula, served by MEA, CEA, HEA and SED.	

* Preliminary engineering shall not exceed 15% of overall construction costs and the project shall be constructed within the desired 5-year period of performance. Provide a line-item level of detail for costs if available.
† Provide a line-item level of detail if available.
‡ Provide a line-item level of detail if available.
§ Provide a line-item level of detail if available.
** Provide anticipated cash and in-kind match values if applicable.

Eligible entities if a joint application:	GVEA, MEA, CEA

Proposed electric grid service provided: *(check all that apply)*		
	Weatherization technologies and equipment **YES**	☒
	Fire-resistant technologies and fire prevention systems	☐
	Monitoring and control technologies	☐
	Undergrounding of electrical equipment	☐
	Utility pole management	☐
	Relocation of power lines or the reconductoring of power lines with low-sag, advanced conductors	☐
	Vegetation and fuel load management	☐
	The use or construction of "distributed energy sources" ("DERs") for enhancing system adaptive capacity during disruptive events, including: • Microgrids; and • Battery storage subcomponents	☐
Other: ☐	Adaptive protection technologies	☐
	Advanced modeling technologies	☐
	Hardening of power lines, facilities, substations, of other systems; and **YES**	☒
	Replacement of old overhead conductors and underground cables.	☐

C. Project Narrative

1. Project Description: Required but not scored

Summary:

Unbalanced snow loading along the 170-mile long, 345kV rated Alaska Intertie (Intertie) causes conductors to sag near or at ground level, resulting in public / wildlife safety hazards and disruptive ground fault trip events with widespread load shedding and transmission system instability.

This Intertie, commissioned in 1986, is the single line connecting Interior Alaska with the southern portion of the Alaska Railbelt transmission system - providing a more resilient, lower carbon and lower cost electric network for the vast majority of the state population, including many federally recognized disadvantaged communities. Plans to further reduce Alaska's carbon emissions with significant investments in geographically diverse wind and solar energy projects, depend on a reliable and resilient Intertie.

The unbalanced snow load problem is inherent to the original design and has persisted since construction. It occurs when snow accumulates and then sheds from multiple spans except for 1 span or 1 wire within a span. This unbalanced loading causes the insulator strings on adjacent structures to swing toward the heavily loaded span resulting in extreme conductor sag.

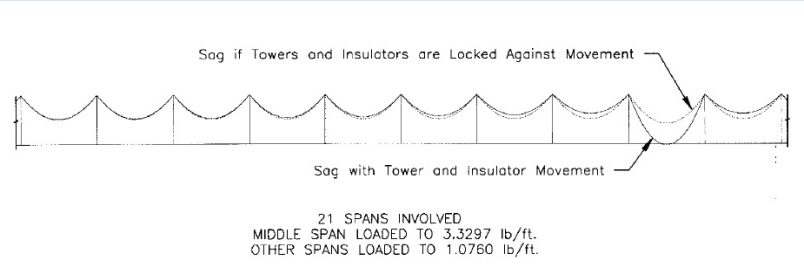

Figure 1 - Unbalanced Snow Loading

Using state of the art PLS-CADD transmission line design software with high resolution 3D data from a recent lidar mapping project, detailed models were developed of the Intertie transmission structures, conductors, topography and underlying vegetation. The new models were used to simulate and re-evaluate a proposed solution to the sag problem designed by Dryden & LaRue and detailed in a 1992 report prepared for the Alaska Energy Authority. The Dryden & LaRue solution was to shorten and reconfigure the 345 kV insulator strings. The new analysis with PLS-CADD shows that the Dryden&LaRue design will perform better with unbalanced snow loads than predicted in the 1992 report - providing twice the above ground clearance than initially calculated.

This project will fix the sag problem using the 1992 Dryden&LaRue insulator reconfiguration design concept, refined and optimized with the aid of new, high tech. modeling and analysis.

Background:

Several extended Intertie outages due to phase to ground faults during snow storms in the late 1980's initiated a series of investigations by transmission line design experts. In a 1992 report to the Alaska Energy Authority, Dryden & LaRue provided a detailed analysis showing how unbalanced snow loading can cause conductors to sag to ground level. The engineers used as-built record drawings and developed a custom software program to analyze and design various options to minimize the sag without installing inset structures. These modifications were not implemented and instead, a snow load monitoring system (SLMS) was installed in 1995.

The SLMS is obsolete and ineffective. Current practice is to dispatch personnel to patrol the line via snow mobile or helicopter whenever more than two inches of snow is recorded in Talkeetna near the southern end of the Intertie or when a line fault and trip occurs. If a conductor clearance problem is found, another crew is dispatched to the site, the line de-energized and snow removed.

Using lidar technology, a project to model the current condition of the Intertie was completed in 2023.

Scope of Work:

The project scope is to harden and improve the southern 80 miles of the Alaska Intertie (Douglas Substation to Susitna River crossing, towers 1 to 362 by minimizing the intermittent and excessive conductor sag caused by unbalanced snow loading. The work includes: 1) updating the 1992 Dryden & LaRue insulator modification designs using recent lidar mapping data with industry standard modeling and simulation software; 2) construction permit acquisition, 3) materials procurement, 4) Intertie outage coordination and planning, 5) reconfiguring the 345kV rated insulator strings, modification and pretensioning the structure guy wires and, optionally, rotating and shortening the static wire mounting hardware.

Design Details:

The concept, design basis and technical justification for this project is documented in the 1992 Dryden & LaRue report to AEA. The report compared the lower cost and ground clearance improvement of converting all towers to shortened I string suspension insulators to the higher cost and greater clearance of converting all towers to inverted V string insulators. The recent analysis of lidar data with PLS-CADD shows the previous results underestimated the clearance achieved with these modifications and that only every other tower will need inverted V strings and the others the shortened I strings. The new analysis shows the clearance will be twice the original calculated values. The table below compares the two sets of results.

Alaska Intertie Phase Conductor Clearance (ft.) 1992 vs. 2024 Calculations

1225 ft. span, 4 in. radial snow, 5 lb/cu.ft., 80 ft. "A" Tower, one loaded span

Option	Mitigation Measure	1992 Investigation	2024 Analysis
1	Do nothing	- 2ft.	TBD
2	Shorten Outside I string to 230 kV and convert center V to 230kV I string	7.62	28
3	Convert All to 230 kV inverted V	17.1	Not Analyzed
4	Alternating 2 and 3	Not Analyzed	35

Shorten or replace all 345kV suspension insulators (142.5” long) to 230kV rated length (76” long). On every other tower, convert suspension insulators to inverted V-strings rated for 230 kV. Reducing the length of the insulators also reduces the amount of swing into the unbalanced span and thereby reducing the sag further.

Convert the suspension insulators on every other tower to an inverted and rotated V-string creates a semi dead-end condition on the insulators. This semi dead-end condition has insulators partially angled into each span reducing the allowable swing.

The guy yokes would be removed and the guys would be attached directly to the anchor piles. The guys would be pretensioned to reduce tower movement under unbalanced longitudinal loads. The shield wire peaks would be reversed and shortened to double the clearance between the phase conductors and the shield wires, reduce shield wire snow load sag and reduce force pulling on the top of the tower. This shield wire adjustment is a reliability improvement and not a safety requirement. When snow loaded, the shield wire can sag and with some wind make contact with the outer phase conductors or wrap around the phase conductors.

The tables below summarize the project costs and grant contributions. Refer to Project Cost Workbook.xlsx for a detailed breakdown of labor hours and materials. Material prices were quoted by suppliers. As presented, the project cost includes $1.7 million for new insulators. To the extent possible, reusing the existing insulators could reduce this cost. The largest cost is for line crew labor and helicopter transportation. These amounts were calculated by multiplying the itemized labor hours and cost breakdown per tower in the Dryden & LaRue design report by a factor of 2.3 to adjust for annual inflation through 2025 and then compared with recent labor hour estimates from an experienced line contractor asked to review the project work.

Project cost is highly dependent on miles of line modified. The dead-end and angle structures will not be modified and are excluded in the tower count. The analysis by Dryden & LaRue emphasized correcting the first 35 miles north of Douglas substation as there was field verified evidence of conductors sagging to the ground and static wire wrapping in the phase conductors. However, the report suggested fixing up to the Susitna river if funding allowed.

Cost to Mitigate Unbalanced Snow Loading for Southern Half of Alaska Intertie

(80 miles between Douglas Substation and Susitna River crossing)

Task	No. Towers	Towers per Mile	Parts and Labor per Tower	Cost per Mile	Parts and Labor Sub-Total
Engineering Design, Permits, Project and Site Control	326	4.5	$1,328	$5,413	$433,020
Administrative / Accounting / Miscellaneous	326	4.5	$138	$563	$45,000
Construction - Shorten I Strings 230kV	163	2.0	$10,254	$20,892	$1,671,353
Construction - Change to 230kV Inverted V	163	2.0	$25,270	$51,487	$4,118,945
Construction - Reverse Shield Wire **(Reliability Improvement)**	326	4.1	$7,518	$30,636	$2,450,868
Construction - Remove Yokes, Retension Guy Wires	326	4.1	$4,276	$17,425	$1,393,976
Construction - Flight Time, Setup, Takedown, Cleanup	326	4.1	$11,178	$45,550	$3,644,028
		Totals	$52,444	$141,329	**$11,306,322**
		Totals With Shield Wire	$59,962	$171,965	**$13,757,190**

Grant and Matching Funds

Project Scope	Grant	Cash Match	In-Kind
Minimum Modifications	$8,479,741	$2,384,560	$442,020
Minimum Modifications + Shield	$10,317,892	$2,997,277	$442,020

2. Population Impacted: 30% or up to 30 points

- Please provide a description of total population served by the proposed project (no description = 0 points, less than 20,000 served = 3 points, each additional 10,000 served = 3 points with a maximum of 15 points possible).
- Please provide a description of how the proposed project will serve one or more census tracts defined as a disadvantaged community (no description = 0 points, each census tract is worth 3 points with a maximum of 15 points possible).
- Disadvantaged communities reporting tool

Improved resiliency of the Alaska Intertie will generally benefit the interconnected Alaska Railbelt with a 2023 population size of approximately 550,000.

The northern end of the Intertie connects to Golden Valley Electric Association which serves the Fairbanks North Star Borough (FNSB). According to 2020 census data, the FNSB population count is 95,655. The southern end of the Intertie connects to Matanuska Electric Association which serves the Matanuska Susiitna Borough, 2020 population count of 107,081.

The energy transferred over the Alaska Interie now, and in the future, will serve multiple disadvantaged communities as defined by the US Department of Energy with the Justice40 initiative.

The Alaska Railbelt has many disadvantaged communities. Five of these, and their census track identification numbers, are listed below.

Nenana, Tract 02290000200 ;

Fairbanks (two census tracks), 02090000300, 0209000100 ;

Houston, 02170000401 ;

Big Lake, 0217000501

Approximately 13,500 GVEA accounts (29%) also meet the requirements as Distressed or Disadvantaged Communities (DAC), including portions of downtown Fairbanks, the Parks Highway, the Denali Borough, and the Nenana Alaska Native village.

The Alaska Intertie's resiliency to unbalanced snow loadings will positively impact DAC burdens by:

• Reducing the cost of electricity in the identified DACs
• Improving air quality via reduction of oil-fired power generation
• Providing jobs and training opportunities in surrounding DACs
• Increasing energy resilience state-wide and in surrounding DACS
• Increasing diversity in the workforce
• Reducing precursor emissions in an Environmental Protection Agency designated Serious Non-Attainment Area

- **Risk Reduction/Resilience Effectiveness: 20% or up to 20 points**
- Please describe how the project will reduce the current risk of disruptive events (an event in which operations of the electric grid are disrupted, preventatively shut off, or cannot operate safely due to capacity constraints, redundancy and/or equipment failure, etc. (not at all = 0 points, minimally = up to 3 points, partially = up to 6 points, mostly = up to 9 points, entirely = up to 12 points, and exceeds = up to 15 points).
- A 5 point bonus will be applied to projects which improve or enhance the resilience of transmission lines or assets of 69kV and above.

The proposed modifications to the 345kV rated Intertie will reduce the current risk of disruptive events.

In the present condition, unbalanced snow loading on the Intertie causes disruptive events where operation of the electric grid is disrupted, preventively shut off and cannot operate safety.

On average, a disruptive event, consisting of a phase to ground fault and line trip has occurred each winter for the past six years.

The project will reduce the risk of these events by increasing the ground clearance of the phase conductors and the horizontal separation distance between the phase conductors and static wire.

NESC clearance above ground of 25 ft. When this project is complete, PLS-CADD simulations using a lidar model of the AK Tie, show the clearance will be approximately 35 ft., ample excess to accommodate a five foot deep snow pack.

More details about Intertie disruptive events:

Following a snow storm, the excessive sag of individual spans of conductors creates an electrical safety hazard for the public and wildlife and violates the overhead clearance requirements of the National Electric Safety Code (NESC). When ground and air patrols by fossil fuel powered snow machine or helicopter locate the overloaded spans, the Intertie is preventively shut off while the snow is removed. If the overloaded spans cause an unexpected ground fault and line trip, the line remains de-energized until a line patrol crew is dispatched, completes an inspection using fossil fuel powered transportation and a follow-up crew returns, using fossil fuel transportation, to remove snow. If the fault occurs during the long dark winter nights, the Intertie can remain out of service for one or more days, creating an electrical island in Interior Alaska relying on higher carbon, liquid petroleum combustion turbines.

Unplanned trips of the Intertie can cause widespread load shed and frequency instability. When fully loaded at 78 MW (measured at the northern end), the Intertie supplies approximately 50% of GVEA's average winter load. An instantaneous trip under heavy load causes a rapid decrease in frequency. To prevent a blackout, relays programmed with frequency rate of change protection settings trip distribution feeders and customer load. These events also disrupt operation of large industrial loads and military bases.

3. Extreme Weather, Wildfire, or Natural Disaster Event Adaptation: 15% or up to 15 points

- Please described how the proposed project would mitigate the future risk of disruptive events whereby operations or the electric grid are disrupted, preventatively shut off, or cannot operate safely due to extreme weather, wildfire, or natural disaster. Criterion score should be based on a qualitative assessment of whether the narrative includes details regarding how the project will reduce future disruptive events caused by extreme weather, wildfire, or natural disaster (qualitative assessment; not at all = 0 points, minimally = up to 3 points, partially = up to 6 points, mostly = up to 9 points, entirely = up to 12 points, and exceeds = up to 15 points).

This project will mitigate the future risk of disruptive events and support reliable and safe operation of a future low carbon Railbelt electric grid with high penetration of renewable energy flowing end to end between Interior Alaska and the Kenai Peninsula.

According to the January 2023 report by the Alaska Center for Energy and Power (ACEP), decarbonizing the Railbelt grid by the year 2050 with 100% renewable energy sources depends on an Alaska Intertie operating at 230kV supporting bi-directional power transfer of 300 MW, nearly four times the present 78 MW transfer limit at 138kV. An unplanned Intertie outage at this higher operating voltage and power transfer, will have an increased economic and quality of life impact on the Railbelt population.

Fixing the unbalanced snow loading issue by raising the clearance of the Intertie conductors will harden the Intertie against future ground fault trips due to extreme snow weather events and more rapid growth of vegetation.

Reconfiguring the phase conductor insulators will raise the clearance of loaded phase conductors to approximately 35 ft. above ground level. This is 10 feet higher than the 25 ft. clearance specified by the current edition of the NESC. This extra 10 feet will provide an added safety margin to accommodate unknown future scenarios such as increased snow density or quantity.

Routine line patrols and snow removal operations should no longer be needed. This will reduce the cost of Intertie operation and the extra carbon emissions from internal combustion engines used for back country transportation.

In addition, shortening the linkage supporting the static wire or shortening the linkage and rotating the bracket supporting the static wire will reduce static wire sag and double the horizontal clearance between the static and phase conductors. This will provide further reliability and reduction in risk of disruptive ground fault events.

The same report from ACEP also predicted significant adoption of electric vehicles and and heat pumps. Depending on the power output and geographic location of the renewable energy when an Intertie trip occurs, this higher load will require significantly more standby reserve power from high carbon liquid fuel generators or curtailment of renewable plants until the Intertie is re-energized.

4. Data Sources: 5% or up to 5 points

- Please provide a description of where the project is documented in a data-driven planning document and/or has been identified as a provider priority via a board priority/resolution related to system resiliency, and supporting documentation is referenced and/or the location of any supporting documentation is referenced and/or the location of any supporting data or narratives is provided in a linked below (not included = 0 points, included = 2 points).
- The application should reference which climate change model substantiates predictions to the changes of future physical environments including impacts to the safety and reliability of providing energy to utility customers (reference excluded = 0 points, reference included = 3 points).

The data-driven planning documents listed below show that over a 15 year period the Intertie Operating Committee (Intertie operator) and the Alaska Energy Authority (Intertie management) invested significant effort to evaluate options for correcting the safety and reliability problems caused by unbalanced snow loading. To date, modifications to fix the excessive sag during unbalanced loading have not been performed and the safety and reliability problems persist.

The annual operating budget for the Alaska Intertie has line items for maintenance of a 1990's era snow load monitoring system and for patrolling the line and snow removal after snow storms or winter ground fault trip events. The annual budget is discussed and approved by the Intertie Management Committee and presented for public comment.

US Department of Energy, National Transmission Needs Study, 2023

Peabody, A.B. (1989). Letter to Remy Williams re: "Ground Clearances at Caswell Lakes Road and Hidden Hills Road." Dryden and LaRue, Anchorage, AK. November 1, 1989.

LaRue, D.S. (1990). Letter to Remy Williams re: "Design Practice for Ground Clearances under Unbalanced Span Loads." Dryden and LaRue, Anchorage, AK. January 8, 1990.

Dryden & LaRue (1992). Draft Investigation of Effects of Unbalanced Snow Loads on the Anchorage-Fairbanks Intertie. Dryden & LaRue, Anchorage, AK.

Richmond, M.C. (1995). Letter to Alan B. Peabody re: "Anchorage - Fairbanks Intertie Ice/Snow Load Investigation" Dryden and LaRue, Anchorage, AK. May 12, 1995.

Peabody, A.B. (1996a). Letter to Jim Hall re: "Preliminary Cost Estimates." Dryden & LaRue,Anchorage, AK. February 9, 1996.

Peabody,A.B. (1996b). Letter to Jim Hall re: "Revised Budget Cost Estimate for Snow/Ice Melting".Dryden & LaRue, Anchorage, AK. March 21, 1996.

Reed, R. (1996). Fax to Al Peabody re: "DC Power Supply for Transmission Lines", Dryden and LaRue, Anchorage, AK. March 19, 1996.

Ritter, D. (1996). Letter to Al Peabody re: "Anchorage to Fairbanks Electrical Deicing Feasibility" Dryden and LaRue, Anchorage, AK. February 2, 1996.

Dryden & LaRue (1996) Report to Intertie Operating Committee, "Analysis of Unbalanced Snow Loads on the Anchorage-Fairbanks Intertie" Dryden & LaRue, Anchorage, AK. March 7, 1997

Dryden & LaRue (2005) Report to Alaska Energy Authority, "Anchorage-Fairbanks Intertie Snow Load Mitigation Preliminary Report" Dryden & LaRue, Anchorage, AK. October 19, 2005

Climate Model:

Scenarios Network for Alaska + Arctic Planning

https://uaf-snap.org/

https://arcticeds.org/report/community/AK382#results - GFDL-CM3 RCP 4.5, 6.0 and 8.5 (NOAA coupled climate model) - This model forecasts snow fall equivalent (SFE) each decade through year 2099. Data for Talkeetna was reviewed. Overall, SFE decreases approximately 25% through the end of the century. Precipitation and temperature are foretasted to increase. It is unclear how this will affect the unbalanced snow unloading phenomena. If snow density increases, the unbalance sag could increase.

5. Implementation Measures: 15% or up to 15 points

The application should include a detailed project schedule that includes design, permits, site control, and construction timeframe breakouts.

- The application schedule should indicate whether the project will go to construction within the desired 5-year period of performance. (Construction timeframe not addressed = 0 points, construction is not proposed within the 5-year period of performance = 0 points, construction is proposed within the 5-year period of performance = up to 2 points).
- The application schedule should include an appropriate level of detail and proposed timeframes should be adequate and reasonable, including project staff experience and availability of staff time during the proposed project period (details and timeframes are not included = 0 points, schedule details and proposed timeframes are minimally addressed = up to 3 points, schedule details and proposed timeframes are adequate and reasonable = up to 5 points).
- The application should include a reasonably specific and/or detailed explanation of the extent to which an eligible entity plans to utilize project labor agreements, local hire agreements, and/or has or will develop a plan to attract, train, and retain a local workforce including minority/women owned businesses (explanation excluded = 0 points, specific/detailed explanation included = up to 5 points).

Summary:

This project will start and complete within five years of the grant award. Refer to the detailed project schedule on the next page. It shows final design, permitting and materials procurement will occur in 2024 (year 1) followed by line modification work in three phases over three years (2025 - 2027). The majority of the work will be performed by an Alaskan / Railbelt area IBEW Line Contractor. The contract bid review process will ensure there is adequate staff and experience to complete the work on schedule.

Local GVEA staff will perform overall project management and contribute to the design and construction management activities. Jeremy Forsting, GVEA Manager of New Construction, is a licensed professional engineer and certified project manager. In addition, GVEA employs a full compliment of local accountants, drafters, electrical engineers and union tradesmen that will contribute to the success of this project.

The majority of project funds and labor is for the field work to perform the insulator reconfiguration and related tasks. GVEA will use competitive procurement methods to solicit bids from Alaska based IBEW transmission line contractors. The bids will be scored and ranked by each of the Railbelt Utility members of the Intertie Operating Committee.

The Alaska Intertie hardening and resiliency project will provide an overall economic benefit, increase reliability, and promote development and operation of new renewable energy projects across the Alaska Railbelt. The project will create jobs for Alaskans.

The Workforce:

The project work will performed under collective bargaining agreements with the International Brotherhood of Electrical Workers (IBEW) and the International Union of Operating Engineers (IUOE).

GVEA has a CBA with IBEW Local 1547 that covers linemen, electricians, vehicle mechanics and warehouse personnel. GVEA partners with the Alaska Joint Electrical Apprenticeship and Training Trust (AJEATT) to employ apprentices under the CBA, which provides them with the mandatory training and experience necessary to qualify for jobs that require special skills within the electric industry and to obtain a Journeyman's license. With a Journeyman's license, workers who transfer out of GVEA's service area are able to demonstrate that they have nationally transferable and marketable skills necessary for the clean energy economy and other areas of the electric industry. In support of the apprenticeship program and individuals entering the industry, GVEA pays an hourly rate into the training program for any individual hired under the CBA.

Local Job Creation:

The project is expected to generate up to 30 temporary construction jobs both for IBEW apprentice, journeyman and foreman linemen. This immediate job creation provides valuable employment opportunities within the Alaska union workforce with supporting roles for local disadvantaged community members.

Wages:

This project will support the local economy through the recognition of organized labor and the provision of prevailing wages. GVEA works with workforce development partners and labor unions to form agreements that protect workers' rights and pay them fair, equitable wages for the work being performed.

6. Community Engagement: 5% or up to 5 points

- The application should reference any utility public outreach plan for electronic and/or in-person stakeholder and public outreach associated with identification and development of the project (reference excluded = 0 points, reference included = up to 5 points).

The utility public outreach plan for this project includes:

1) In-person meetings with the Member Advisory Committees of GVEA and CEA;

2) An article summarizing the project in the Ruralite magazine;

3) Public presentation, discussion and comments during meetings of the Intertie Management Committee;

4) Public presentation and comment period for the Alaska state budget;

5) Presentation and discussion during meetings of the MEA, CEA and GVEA board of directors. These meetings are open to utility member-customers which is the majority of the Alaska population.

7. Leveraging Partnerships: 10% or up to 10 points

Please include letters of support from partner organizations (letters of support excluded = 0 points, reference included = 2 points).

Please include a description of how the applicant will provide matching funds (e.g., in-kind and/or cash contributions) that are equal to 1/3 or more of the federal share of the project cost (non-federal matching funds equal to 1/3 of federal share = 4 points, every 5% greater than 1/3 of federal share = 1 additional point with a maximum of 8 points possible).

This project and grant application is supported by the Intertie Management Committee (IMC) and the Intertie Operating Committee (IOC) whose utility members / partner organizations include GVEA, MEA, CEA. Included with this application is a letter of support from IMC Chair Andrew Laughlin, representing these partner organizations.

The one-third matching funds (cash and in kind labor) will be provided by the IMC. This is stated in the AK Tie Authorization Letter - IMC Letter of Support and Financial Committment.pdf included with this application.

The 33.3% grant match consists of 29% cash and 4.3% in-kind labor. The in-kind labor will be provided by utility personnel.

LIST OF ADDITIONAL DOCUMENTATION SUBMITTED FOR CONSIDERATION

In the space below, please provide a list of additional information submitted for consideration.

- AK Intertie 40101(d) Budget Justification Notebook SF424(1).xlsx
- AK Intertie Authorization Letter - IMC Letter of Support and Financial Committment.pdf
- AK Intertie Drone Quote.pdf
- AK Intertie GVEA Resilience Grant Letter of Support.pdf
- AK Intertie Investigation Report DrydenLaRue July-92.pdf
- AK Intertie Parts Quote 1.pdf
- AK Intertie Parts Quote 2.pdf
- AK Intertie Project Budget - Alternative Version.xlsx
- AK Intertie Project Schedule - Alaska Intertie Snow Load Resiliency.pdf
- AK Intertie Resilience Project Subaward Subcontract Notification Form.pdf

The undersigned certifies that this application for a resilience grant is truthful and correct, and that the applicant is in compliance with, and will continue to comply with, all federal and state laws including existing credit and federal tax obligations and that they can indeed commit the entity to these obligations.

Print Name	Keith Palchikoff
Signature	Keith Palchikoff
Title	Grid Modernization Manager
Date	2/16/2024

Submission

Completed applications must be submitted by email or physical delivered to AEA by 4:00PM on February 16th, 2024.

Applicants may either submit their applications by (1) attaching their application and supporting documents to an email and sending it to the AEA grants coordinator, or (2) by having their applications physically delivered to AEA.

Applicants choosing to submit their application via email are asked to address the email to grants@akenergyauthority.org with the subject line of "IIJA 40101(D) Subaward Application". Applicants are asked to submit the application and applicable documentation in searchable PDF or other word searchable electronic format. Applicants using this method are encouraged to use delivery receipt and read receipt. It should be noted that AEA's email system limits attachments to 40MB and will not accept .zip files or executables.

Applicants choosing to submit their application via physical delivery method are asked to submit one (1) electronic version on an electronic storage device (i.e., CD/DVD or thumb drive) in a searchable PDF or other word searchable electronic format.

Additionally, if a hard copy of the completed application is submitted, AEA requires that the hard copy be double-sided with minimal binding, including appendices that can be duplicated. Physical delivery of either of the above must be in a sealed envelope(s) clearly labeled:

From: Applicant Return Address

To: Alaska Energy Authority
Renewable Energy Fund Grant Application
813 West Northern Lights Blvd
Anchorage, AK 99503

Any questions or concerns about filing an application should be directed to:

Grants Coordinator
Alaska Energy Authority
Direct Phone: (907) 771-3081
AEA Main Phone: (907) 771-3000
Email: grants@akenergyauthority.org