

Northwest Arctic Borough, Planning Department  
Title 9 Conditional Use Permit No.: 108-03-21  
Alaska Native Renewable Industries

**Title 9 Conditional Use Permit No: 108-03-21**

**Date of Issue: April 19, 2021**

**Permit Expires: December 31, 2022**



**Permit Issued By:**

Northwest Arctic Borough  
Planning Department  
ATTN: John Chase  
PO Box 1110  
Kotzebue, AK 99752  
Tel 907.442.8212 / 800.478.1110 extension 112  
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[jchase@nwabor.org](mailto:jchase@nwabor.org)

**Permittee:**

Alaska Native Renewable Industries  
PO Box 33  
Huslia, AK 99746  
Tel 907.829.2248  
[edwin@anr-industries.com](mailto:edwin@anr-industries.com)

**Permittee Contact Information:**

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PO Box 60186  
Fairbanks, AK 99706  
Tel 907.750.0010  
[til@anr-industries.com](mailto:til@anr-industries.com)

**Project Description:**

Alaska Native Renewable Industries (ANRI), with assistance from Alaska Village Electric Cooperative and the City of Shungnak, is proposing to construct a 223.5 Kilowatt DC Solar PV array and associated inverter housing facility within the community of Shungnak ('Energy Facilities' is a Conditional Use in the Village District).

The project will involve the construction of six (6) arrays, an inverter/battery housing facility, install two power poles, fencing, and connect the solar panels to the existing power plant. The project will provide supplemental electricity for the community, which will offset diesel fuel consumption. ANRI anticipates these solar PV installations to begin April 2021 and be completed by August 2021.



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Specific details of the project are contained in the permit application (21-02-108) submitted by ANRI to the Borough Planning Department. This application is incorporated into the Borough's administrative record. Project Activities are summarized below.

**Project Location:**

The project site is located at Township 17 North, 008 East, Section 9, Kateel River Meridian, USGS Quad Map Shungnak D-3 NE, AK. The legal description for the site is USS 4417 Tract D, Lot 4 (Plat No. 87-6).

The site is near the existing power plant, within the community of Shungnak in the Village Zone. The City of Shungnak is the landowner.



**Figure 1. Solar Array locations**

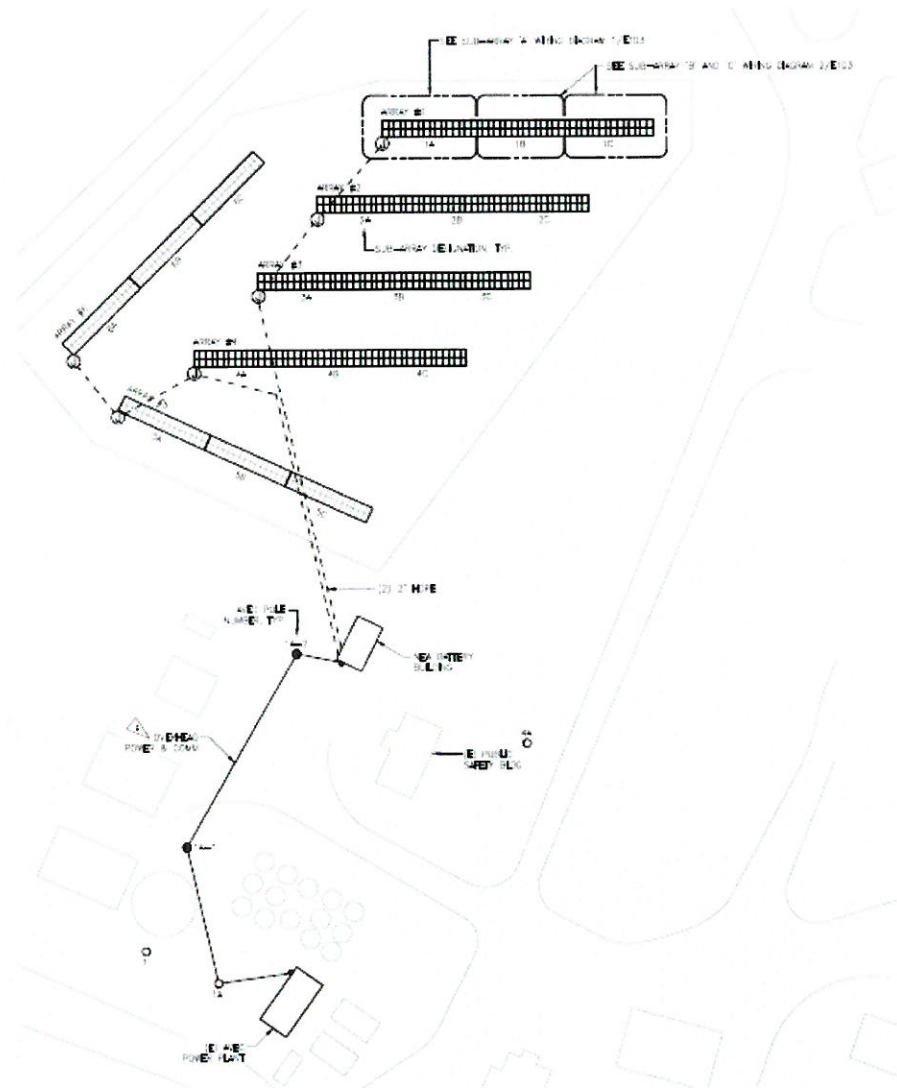
**Energy Facilities:**

Site clearing will be one of the first tasks once the construction phase gets under way and will involve clearing out the proposed area with a chainsaw crew. Locally-hired laborers will assist with this. Once the site is cleared, perimeter fencing will be installed using a skid steer mounted rotary drill. The fence will include barbed wire and high voltage safety signs. ANRI will install a 1,217 linear foot perimeter safety fence around the solar arrays. The fence will be 6-ft high with barbed wire.





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**Figure 2. Site Layout—Solar arrays and inverter housing**

The racking foundation system will be mounted with two rows of 10' Titan ground screws, spaced 70" apart N-S and E-W. There will be 332 ground screws installed using a skid steer mounted rotary drill. ANRI will pre-drill an approximately 3" pilot hole using the 'down the hole hammer drill.' Once the pilot holes are drilled the crew will drill in the Titan ground screws using the same rotary drill.

Once the ground screws are in place **six sub-arrays** at 37.26 kW in size will be installed. Crews will mount the solar modules (solar panels) in 2-1 portrait design and follow up with Solar Edge P850 Power Optimizer mounting and connections. Each sub-array will be approximately 150-160' in length. See **Figure 2** above.



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The electrical crew will begin after sub-array racking and modules are completed, with junction boxes and series string 'home run' wiring connections to the junction box. Each Array will have one 12"W X 12"L X 4"D junction box mounted to the rack on the end of the array underneath the solar panels at the end. ANRI will subcontract with Subzero Electric, LLC to do electrical work.

Once arrays are completed the company will rent an excavator locally for 30" trenching down the middle aisle and burying of the 2" HDPE conduit from the array's junction boxes to the battery inverter building. **Two power poles** will be installed by AVEC from the inverter building to the power plant switchgear. Pole 1A-1 will be set on Block 9, Lot 2, and Pole 1A-2 will be set on Block 9 Lot 1 of USS4417.

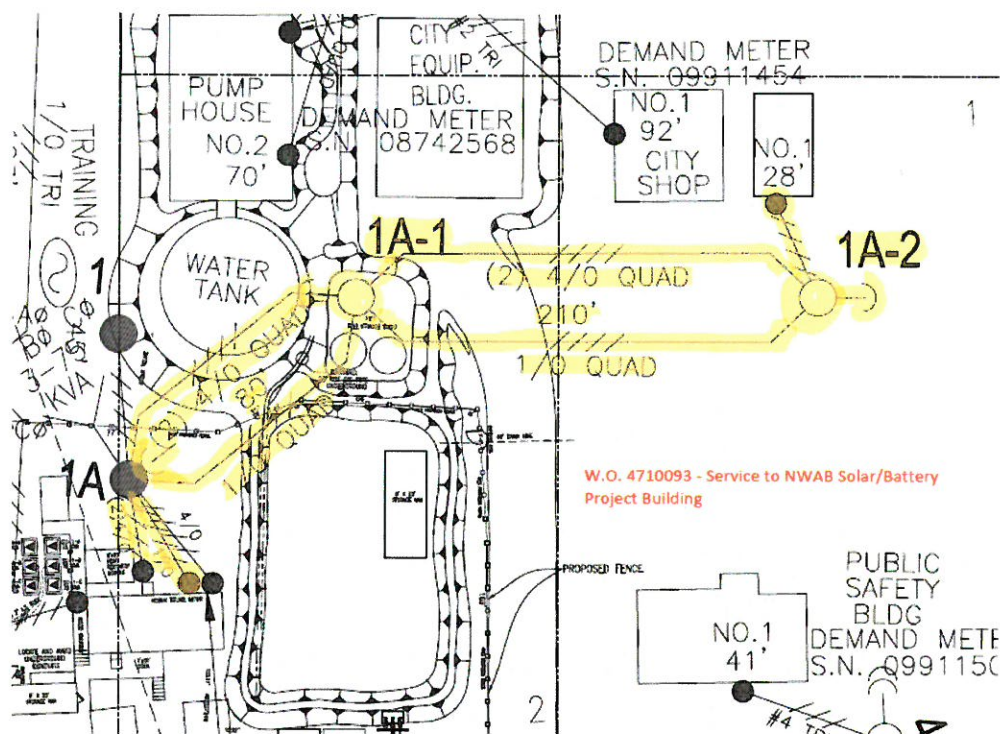


Figure 3. Power pole locations: Pole 1A-1 and 1A-2

**Inverter Housing Construction:**

The inverter housing will be a prefabricated steel Quonset hut building purchased from Steel Master USA. In addition, the company will ship a prefabricated steel foundation system designed to handle the weight of the battery system.

The solar arrays will create DC power then it gets transformed to AC power by the inverters in the Battery Storage building. From there they will be transferred to the power plant bus via power poles AVEC will install. Once at the power plant they will go through a meter then inside to the power plant bus to supplement the demand on the power plant bus.





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After the building is completed the electrical crew will begin the installation of the Blue Planet Energy Systems (BPES) Blue-Ion LXHV Energy Storage System (BESS), EPC Inverter and six (6) Solar Edge 33.3 kW 3-phase inverters.

There will be 6 pairs of battery cabinets. Batteries will be lithium Iron Phosphate composition and there will be 384kw worth of them. A total of 16 batteries will be installed per cabinet.

**Permit Authorization and Documentation:**

ANRI submitted a Title 9 Land Use Permit application (21-02-108) for the following Use: 'Energy Facilities' is a Conditional Use in the Village District.

The Title 9 application was received on March 12, 2021. On March 31, 2021 the Borough Planning Department deemed the application was complete. The 20-day public comment period started on April 1, 2021. There were no public comments.

Permit fees totaled \$500 for the project. ANRI requested a waiver of fees because the project will benefit the residents of Shungnak. The Title 9 Administrator did not grant the waiver of fees. ANRI will pay \$500.

The Planning Commission has the authority to permit: 'Energy Facilities' in the Village District by Conditional Use Permit, pursuant to Northwest Arctic Borough Code (NABC) 09.12.020.

**Permit Terms and Conditions:**

1. The Alaska Native Renewables Industries (ANRI), shall comply with the terms of the permission/permits agreements granted by the federal government, State of Alaska, and/or local governments.
2. ANRI shall comply with any and all applicable local, borough, state and federal laws. Failure to abide by any part of this permit, or violations of any pertinent borough ordinances or state or federal law or regulation, will be considered grounds for revocation of the permit or denial of future permit requests and may result in issuance of fines or other penalties. This provision applies to all persons working under the authority of this permit.
3. The Permittee is responsible for ensuring that all employees, contractors, sub-contractors, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.
4. ANRI is subject to all penalties and civil actions pursuant to section 9.08.240 for violation of the permit conditions and stipulations prescribed herein.



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5. During and after project activities, the permittee must conduct activities in a manner to maintain natural drainage patterns, watershed protection, and permafrost stability, to prevent runoff and erosion into water supplies and to minimize alteration of vegetation.
6. The permittee shall ensure fire safety and emergency access necessary for fire and emergency apparatus and police protection.
7. All project activities shall utilize measures to minimize noise and nuisance affecting surrounding residential properties including excessive noise, fumes, odors, glare, smoke, vibration, dust, litter, interference in any telephone, radio or television receivers, and/or significant line voltage fluctuation.
8. Any development by the project in floodplains and shoreline areas are to be constructed to minimize loss of life or property due to riverine flooding, icing, and stream bank erosion.
9. The Borough recognizes that this area within **Shungnak** is periodically subject to flooding that may result in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the health, safety and general welfare of Shungnak residents. The Borough has adopted the necessary regulations of the Federal Emergency Management Agency (FEMA) to enable its communities and residents to participate in the National Flood Insurance Program (NFIP). See NABC 9.25.020.O.

To promote the public health, safety and general welfare by minimizing flood damage and loss and promoting access to disaster relief, the following conditions must be met:

- a. Encourage protection of land uses vulnerable to floods, including public facilities and utilities that serve such uses, against flood damage at the time of initial construction or substantial improvement.  
Ensure that those persons who occupy areas of special flood hazards assume responsibility for occupying such flood hazard areas.
- b. All new construction and substantial improvements shall meet the following general standards, as applicable:
  1. Anchoring. All new construction and substantial improvements shall be designed, modified, constructed and adequately anchored to prevent flotation, collapse or lateral movement of the structure; all manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement.
  2. Construction Materials and Methods. All new construction and substantial improvements shall be constructed with materials and utilize equipment resistant to flood damage and use methods and practices that minimize





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- flood damage, including waterproofing, watertight construction, use of substantially impermeable materials and other construction techniques.
3. Mechanical and Electrical Utilities. Electrical, heating, ventilation, plumbing, and other service facilities shall be designed, constructed and/or otherwise elevated or located to prevent water from entering or accumulating within the components during flooding.
  10. All project activities shall utilize measures to avoid or minimize disrupting wildlife and bird migration, or subsistence activities including fishing, trapping, waterfowl hunting, egg gathering and caribou/moose hunting. The permittee will ensure reasonable access to subsistence users to subsistence resources.
  11. Project equipment/vehicle servicing and fueling operations are prohibited within 100 feet of any surface water body, including any rivers, drainage channels, sloughs and lakes. Equipment and vehicles are to be maintained to eliminate or minimize any fuel spills and fluid leaks. Equipment and vehicles must be monitored prior to use for hydraulic leaks. If equipment is in continuous use, it shall be inspected daily for hydraulic leaks. Project equipment shall not be abandoned.
  12. ANRI shall immediately notify the borough (at least within 24 hours) of any change in the project plans and seek modification of the permit. ANRI shall suspend uses until approval is given by the Planning Director/Title 9 Administrator. If the proposed action(s) constitutes an emergency, ANRI shall comply with 9.16.040 for emergency actions and shall make reasonable efforts to conduct modified uses in a manner that avoids or minimizes significant harm to the environment, consistent with the need to protect property and human life.
  13. Access by Borough personnel and their agents. Authorized personnel and/or their agents of the Northwest Arctic Borough when on official business and displaying proper identification shall be allowed access to the sites without interference. Borough personnel and/or agents may conduct scheduled or unscheduled inspections or tests to determine compliance with this permit or respond to emergency situations. The Borough may inspect the properties up to 5-years after the permit expires for compliance checking and inspections.
  14. At the completion of the project, the permittee shall file a written report with the Borough Planning Department describing the following:
    - a. A complete report of any fuel or other hazardous substances discharges and clean-up activities completed,
    - b. Other matters as reasonably required by the Administrator/NAB Planning Director.
  15. This permit will expire on December 31, 2022 unless revoked by the Title 9 Administrator and/or ANRI.

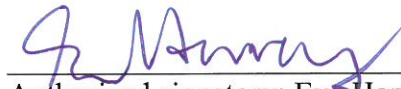


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**Permit Approval**

**NORTHWEST ARCTIC BOROUGH**

Conditional Use Permit Approved by the Northwest Arctic Borough Planning Commission  
through Resolution PC 21-01

  
Authorized signatory: Eva Harvey,  
Planning Director/Title 9 Administrator

Date: April 19, 2021

CC: City of Shungnak, Shungnak IRA Council, NANA Regional Corporation,  
Maniilaq Association, AVEC, ANTHC

Posted at: [www.nwabor.org](http://www.nwabor.org)



**NORTHWEST ARCTIC BOROUGH PLANNING COMMISSION  
RESOLUTION 21-01**

**A RESOLUTION OF THE NORTHWEST ARCTIC BOROUGH PLANNING COMMISSION TO APPROVE ALASKA NATIVE RENEWABLE INDUSTRIES' DRAFT CONDITIONAL USE PERMIT #108-03-21, AND FOR RELATED PURPOSES**

**WHEREAS:** The Northwest Arctic Borough Planning Department received a Title 9 Permit Application (21-02-108) on March 12, 2021 from Alaska Native Renewable Industries for the following Use in the Village District: Energy Facilities; and

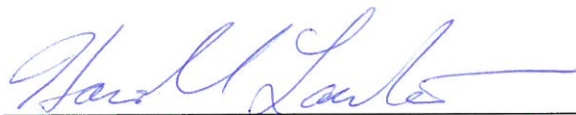
**WHEREAS:** On March 31, 2021, the Borough Planning Department deemed the application complete with all necessary information; and

**WHEREAS:** The Borough Planning Department has published a public notice for this permit on April 1, 2021, as required in borough code 9.20.030; and

**WHEREAS:** The Northwest Arctic Borough Planning Commission has the authority to approve: Energy Facilities in the Village District by Conditional Use Permit according to borough code 9.12.020, following a public hearing as required under borough code 9.20.030E.

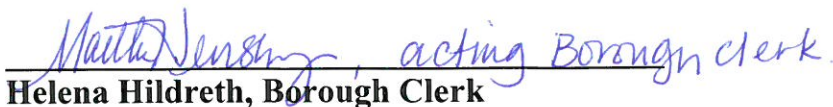
**NOW THEREFORE BE IT RESOLVED,** The Northwest Arctic Borough Planning Commission hereby authorizes the Planning Director/Title 9 Administrator to approve the DRAFT Conditional Use Permit #108-03-21 dated April 1, 2021, as discussed during the commission meeting;

**PASSED AND ADOPTED THIS 16<sup>th</sup> DAY OF APRIL, 2021.**



**Harold Lambert, Planning Commission Chair**

**SIGNED AND ATTESTED ON THIS 16<sup>th</sup> DAY OF APRIL, 2021.**



*acting Borough clerk.*

**Helena Hildreth, Borough Clerk**

