



Title 9 Minor Use Permit No.: 101-03-20
Date of Issue: August 29, 2019
Permit Expires: December 31, 2020

Permit Issued By:

Northwest Arctic Borough
Planning Department
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Permittee:

Ipnatchiaq Electric
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Permittee Contact Information:

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Project Description:

The Ipnatchiaq Electric Company (IPNATCHIAQ), with assistance from NANA Regional Corporation, is proposing to install solar photovoltaic (PV) arrays connected to three connex/shipping containers within the community of Deering ('Placement of fill in a wetland, less than one acre' and 'Other "uses"' are Minor Uses in the Village District). The project will consist of three shipping containers to be outfitted with a galvanized steel racking that will each hold approximately 16 kilowatts of solar panels. The project will provide supplemental electricity for the community, which will offset diesel fuel consumption. IPNATCHIAQ anticipates these solar PV installations to begin August 2019 and be completed by October 2019.

Specific details of the project are contained in the permit application (20-02-101) submitted by IPNATCHIAQ 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 8 North, 19 West, Section 19, Kateel River Meridian, USGS Quad Map Candle D-5. The site is within the community of Deering in the Village Zone.

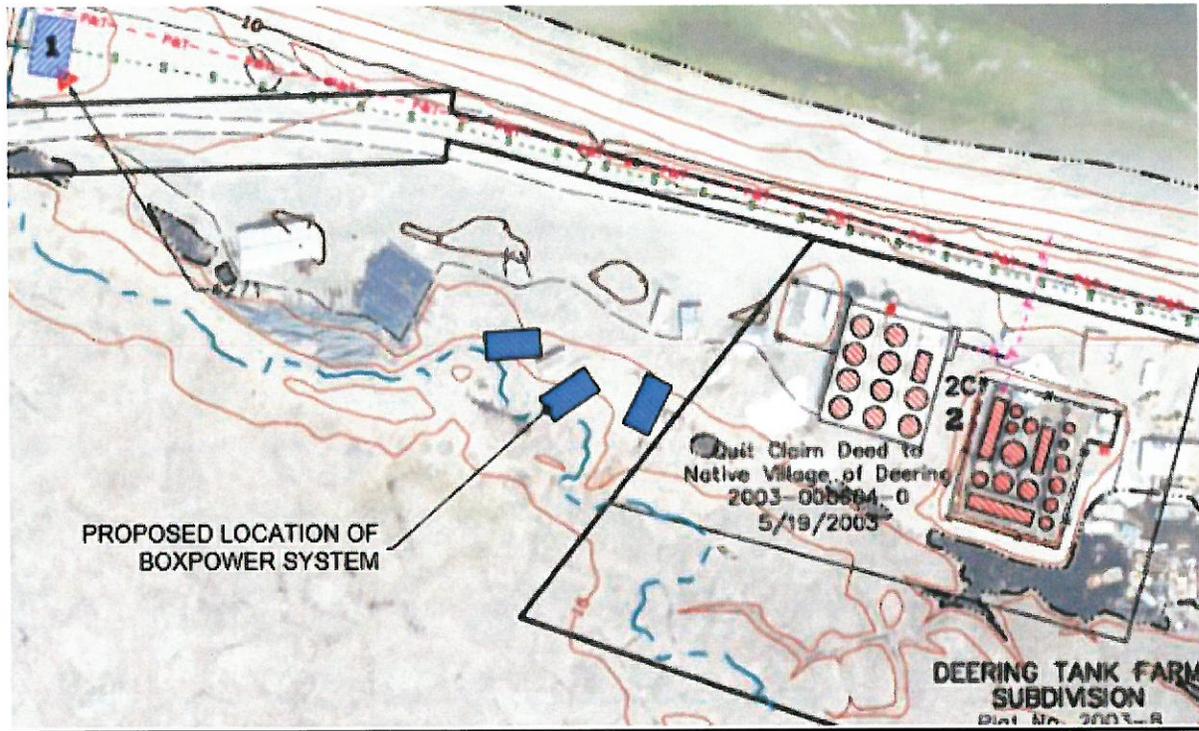


Figure 1. Solar array location (Blue rectangles)

Placement of fill:

IPNATCHIAQ will be using approximately 120 cubic yards, which is about 12 dump truck loads. The gravel pad will be approximately 50' x 150' upon which the connex's and solar arrays will be anchored. The pad will consist of a layer of foam resting directly on the ground that will be covered by standard geo-fabric and then covered by an approximately 18-inch thick layer of gravel. Four duckbill anchors – 1 on each side of the connex – will be driven to approximately 5 feet in depth at a 45 degree angle.

The gravel is stockpiled at Mile 5 on the Deering road. It has been stockpiled prior to this project and is being made available by the community of Deering. No gravel extraction will occur as a result of this project and no reclamation plan will be required as a result of this project.

Other 'Uses':

Each individual connex will support an approximately 16 kW solar array, consisting of 42 Hanwha Q-cell solar panels rated at 385 Watts each, for a total of 126 solar panels over the



three connex's and a total nameplate power production capacity of 48.5 kW. The overall construction process consists of the following:

1. Establish stable foundation for each individual connex (Described in more detail below)
2. Secure each connex with sufficient ballast (weight provided by gravel) and 4 duckbill anchors – 1 on each side of the connex
3. Erect galvanized steel racking on south-facing length of connex (BoxPower will be leading this aspect of the project)
4. Measure and rig lines to properly place and fasten solar PV panels to racking, using small hand tool-powered winches and pulleys
5. Connect each solar panel in pre-configured wire arrangement
6. Connect each connex to a single SMA string inverter
7. Install conductor and conduit from SMA inverter to transformer/power pole

The three connex's will be arranged in a U-shaped pattern with the central connex facing directly due south and the other connex's facing south-southeast and south-southwest. This orientation reduces negative impact on the diesel-electric grid by reducing peak output while extending the time throughout the day for which the solar arrays collectively will be producing power, thus "spreading out" the solar generation and reducing demands on the diesel generators and battery energy storage system.

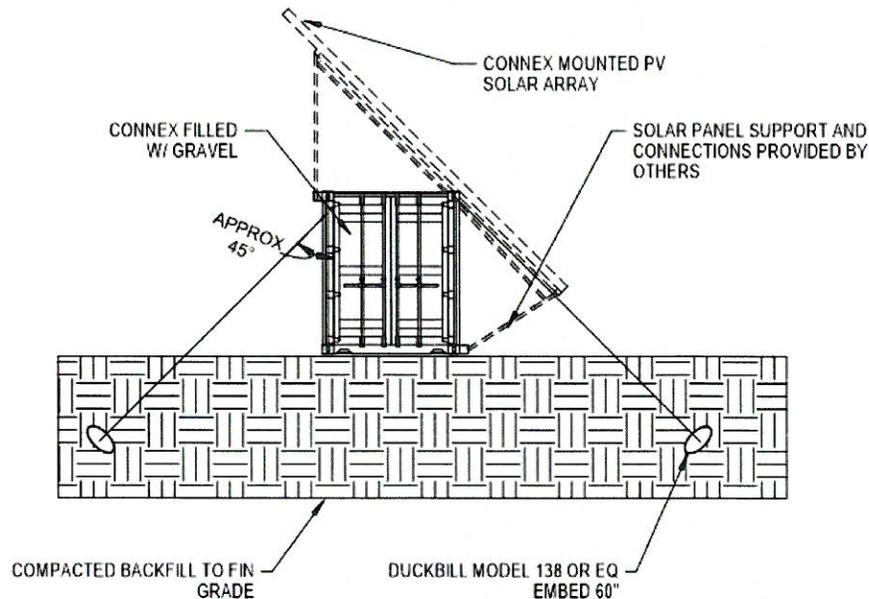


Figure 2. Solar array configuration on connexes

Timeline:

The proposed timeline for this project is provided in the following table.

Task	Start Date	End Date
1. Mobilize equipment & materials	8/26/19	9/6/19



2. Construct gravel pad	9/9/19	9/13/19
3. Place & Anchor connex's	9/16/19	9/20/19
4. Construct PV arrays/fasten to connex's	9/23/19	9/27/19
5. Site wiring	9/30/19	10/3/19
6. De-mobilize	10/4/19	10/6/19

Permit Authorization and Documentation:

IPNATCHIAQ submitted a Title 9 Land Use Permit application (20-02-101) for the following Use: 'Placement of fill in a wetland, less than one acre' and 'Other "uses"' are Minor Uses in the Village District.

The Title 9 application was received on July 19, 2019. On August 27, 2019 the Borough Planning Department deemed the application was complete.

Permit fees totaled \$250 for the project. IPNATCHIAQ requested a waiver of fees because the project will benefit the residents of Deering. The Title 9 Administrator granted the waiver of fees.

The Planning Director has the authority to permit 'Placement of fill in a wetland, less than one acre' and 'Other "uses"' as Minor Uses in the Village District, pursuant to NABC 9.12.020.

Permit Terms and Conditions:

Administrative approval is hereby GRANTED to permit 'Placement of fill in a wetland, less than one acre' and 'Other "uses"' as described, subject to the permit terms and conditions stated herein.

1. The Ipnatchiaq Electric Company (IPNATCHIAQ) shall comply with the terms of the permission/permits agreements granted by the federal government, State of Alaska, and/or local governments.
2. IPNATCHIAQ 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.



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4. IPNATCHIAQ is subject to all penalties and civil actions pursuant to section 9.08.240 for violation of the permit conditions and stipulations prescribed herein.
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 **Deering** 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 Deering 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



- 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. IPNATCHIAQ shall immediately notify the borough (at least within 24 hours) of any change in the project plans and seek modification of the permit. IPNATCHIAQ shall suspend uses until approval is given by the Planning Director/Title 9 Administrator. If the proposed action(s) constitutes an emergency, IPNATCHIAQ 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, 2020, unless revoked by the Title 9 Administrator and/or IPNATCHIAQ.



Permit Approval

NORTHWEST ARCTIC BOROUGH

Martha Siikauraq Whiting, Planning Director/Title 9 Administrator

August 29, 2019

Date

CC: Deering IRA Council, NANA Regional Corporation, Maniilaq Association,
AVEC, ANTHC

Posted at: www.nwabor.org