



# JACOB POMERANZ, P.E.

## Contact Information

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## Professional Registrations

**Professional Electrical Engineer, State of Alaska, License No. 13379**

## Summary of Qualifications

Mr. Pomeranz has over sixteen years of experience as an electrical engineer. and includes the design, integration, commissioning, and testing of power plants, substations, turbines, and generators. His experience also includes project management and lead engineer for large multidiscipline projects. Mr. Pomeranz has organized logistics, multidiscipline engineering, and construction crews. The project management tasks included project scheduling, budgets, weekly cost reports and progress reports to the client. Mr. Pomeranz has also presented technical aspects of projects along with construction details to clients throughout projects to give clients a detailed understanding of project status.

## Relevant Experience

### **Basler Electric Field Service Engineering Highland, IL**

Field service engineer for multiple commissioning, startup and troubleshooting projects for Basler Electric. Projects include large synchronous motors and generator excitation systems. Generator excitation systems include static and rotating systems on steam and gas turbines, hydro turbines and reciprocating engines. Synchronous motor controls for large mines, petrochemical facilities, pump/hydro plants, compressor stations and water/wastewater facilities.

### **NERC Compliance Field Service Engineering**

#### ***United States- Various***

Field service engineer performing model validation testing for facilities around the United States. Completed MOD25/26/27 testing for facilities for steam turbines, gas turbines and hydro plants. Created test plans and executed testing onsite with plant personnel. Provided detailed test results to modeling engineer to perform model validation using PSSE or PSLF.

### **Clear Air Force Base Long Range Discriminatory Radar Power Plant**

*2019-Present*

#### ***Clear AS, Anderson, AK***

Lead electrical and integration engineer for the new 28.5MVA generation facility. The project include 7 Caterpillar C175 Generators rated at 3.25MW and an operation voltage of 12.47kV. Building medium voltage switchgear consists of redundant bus feeds and includes redundant feeders to the campus. The station service is also redundant for the building and feeds power plant auxiliaries. The power control and monitoring systems (PCMS) operates and monitors all plant

equipment, it also includes plant automation for all generators and automatically operates during an outage from the utility. Project tasks include technical oversight over 5-6 engineers as well as coordinating with onsite installation crews. Determined project schedules, reviewed material submittals and created test plans for factory acceptance testing of equipment.

**Nushagak Electric and Telephone, Power Plant Upgrades**

2017

***Dillingham, AK***

Principle electrical and integration engineer for the project. Performed technical oversight and electrical design for the entire project. Tasks include coordinating with multiple engineering disciplines, plant integration with the existing electrical systems, technical lead, generator controls, switchgear, and communications design. Project includes designing new power plant paralleling switchgear, power transformers and adding two CAT 3608 generators, Woodward generator controls, SEL-700G relays, including a new power control and monitoring system. Integration of the new PCMS with the existing plant PCMS was critical during construction phasing to reduce power plant and system outages. Responsible for development of both the cutover plan and commissioning plan for the PCMS integration of the new switchgear, two new engines and modification of the existing switchgear and controls for the fuel delivery system

**Naknek Electric Association, Power Plant Addition**

2018

***Naknek, AK***

Principle electrical and integration engineer for the project. Performed technical oversight and electrical design for the entire project. Tasks included coordinating with multiple engineering disciplines, plant integration with the existing electrical systems, generator controls, switchgear and communications design. Project included designing new power plant paralleling switchgear, generator step up substation with distribution feeders and adding two CAT C280-12 generators, Woodward generator controls, Schweitzer Engineering Laboratories (SEL) relays, and a new power control and monitoring system. The plant is designed to run in parallel with the existing power plant. A new PCMS was designed to monitor and control all generator functions, switchgear and fuel system components. The plant will be commissioned in early 2019 under the direction of Mr. Pomeranz.

**Homer Electric Association Seldovia Standby Power Plant Design**

2017

***Homer, AK***

Principle electrical and integration engineer for the project. Performed technical oversight and electrical design for the entire project. Tasks include coordinating with multiple engineering disciplines, plant integration with the existing electrical system, generator controls, switchgear and communications design. Project includes replacing the existing standby power and designing new standalone paralleling switchgear, a new CAT C32 generator package alongside an older 1.2 MW unit that was integrated into the existing Homer Electric Association electrical system to provide backup power for the City of Seldovia. Equipment included in the design includes Woodward generator controls, SEL-700G relays, a new power control and monitoring system. Integration of the new plant PCMS with the existing Homer Electric DDC system required close coordination with the end user.

**AECOM Technical Services Eareckson Air Base Power Plant Upgrades**

2013-2015

***Eareckson Air Station, Shemya Island, AK***

Principle electrical and integration engineer on the project. Performed technical oversight and electrical design throughout the project including, design, integration, start up and commissioning. Responsible for coordinating outages, operating constraints and design requirements with the Cobra Dane Radar facility. Tasks included coordinating with multiple engineering disciplines, serving as the technical expert, paralleling generator controls, generator and plant feeder switchgear design and integration, PCMS and communications design. e paralleling switchgear design included A and B bus breakers for all feeders and new generators. e project included designing a fully redundant PLC based PCMS system for the entire plant. e power plant design required strict frequency and voltage control and Mr. Pomeranz served as the commissioning representative for ensuring the caterpillar engines met the performance requirements and he completed the tuning of the generator excitation system. Designed and commissioned IEC 61850 communications-based under-frequency scheme to meet facility requirements. e power plant provides power to the Cobra Dane Radar and communication systems between the radar and the power plant were required for loading and unloading of the radar. Designed and commissioned an SEL mirrored bits data transfer scheme to communicate between the power plant and the radar. Additional projects at the site included designing a new 4000 kW loadbank and integrating it into the new fully redundant PCMS system. e PCMS monitors and controls the complete plant, including the substation switchgear, generation switchgear, generator controls, HVAC, fuel supply system and station power down to 600 V MCCs and panelboards. Developed the commissioning plan for the entire project and was the lead engineer in performing and certifying the completed commissioning. Drawing package for project included ~1,000 drawings. Supervised up to six engineers during the design, integration and commissioning process.

**Doyon Utilities Landfill Gas Power Plant**

2012-2013

***Joint Base Elmendorf Richardson, AK***

Lead integration, design and onsite electrical engineer. Completed the design for the generator installation and integration with the substation switchgear. Completed generator performance requirements was instrumental in developing test plans and control changes required in the governor control system to permit the units to meet the performance specifications. Developed commissioning plan for entire facility. Performed start up and commissioning of new Land Fill Gas Power Plant and integrated the new plant into the existing JBER electrical system. Commissioning included load testing generators against the utility as well as Schweitzer relays, ABB voltage regulator and General Electric governor controls. Tested and commissioned relays, tuned governor and voltage regulator, as well as switching orders for plant phasing and integration into the overall system. Onsite supervision of technicians, while coordinating with the local utility during start up and generator testing. Testing and commissioning of PCMS system integrated and controlling the generators, generator switchgear, substation switchgear, plant HVAC, remote gas processing facility and plant ancillary equipment.

**Alyeska Pipeline Service Company Steam Turbine Controls Upgrade**

***Alyeska Terminal, Valdez, Alaska***

Worked on all aspects of design for the Alyeska Power Vapor steam turbine controls upgrade. Design included new governor controls and integration into existing PCMS system. Upgrade required no plant outage and maintain system reliability during construction. e design required replacement and upgrade of existing analog Woodward controls modern microprocessor-based controls. Plant integration included two standby CAT C175 diesel generators. All controls had to integrate with existing DDC system.

**Doyon Utilities Fort Wainwright Power House Station Service Upgrade**

***Doyon Utilities, Ft Wainwright, AK***

Lead integration and onsite engineer. Performed integration, start up and commissioning of new Station Service Substation for the existing coal red power plants auxiliary loads. Commissioning included three different voltage levels (12.47kV, 4.16kV and 480V) and required no plant outages during cut over and integration of the new substation. Tested and commissioned relays and communications, as well as switching orders for plant phasing and integration to the new substation. e new substations PCMS system was integrated into the existing PCMS during the project. Onsite project management and supervision of technicians and electricians. Coordinated with power plant and government personnel during startup and cut over.

**Palau Public Utilities Communications Upgrade**

***Palau Public Utilities, Koror, Republic of Palau***

Performed inspection and replacement of failed equipment for the existing SCADA and communication system. Replaced and commissioned failed components as well as made recommendations for future upgrades. Equipment included programmable logic controllers (PLC), protocol converters and radios. Coordinated with plant personnel during testing and commissioning. Integration of new SCADA systems to existing island wide PCMS system.

**Doyon Utilities Fort Greely Power Plant Enterprise Generator Upgrades**

***Doyon Utilities, Ft Greely, AK***

Lead electrical design engineer and onsite integration engineer. Worked on all aspects of design and field commissioning for the Fort Greely Power Plant Enterprise Upgrade. Design included converting of electromechanical relays, mechanical governor and rotating exciter controls to modern day microprocessor based controls. Performed start up and commissioning of updated analog controls on 1959 Enterprise Engines. Integrated the new controls on the generators with the existing plant PCMS system. Completed switching orders and phasing. Load tested generators against Golden Valley Electric Association. Commissioning included Schweitzer relays, Woodward governors and Static Basler exciters. Coordinated with plant personnel and the government during startup and integration.

**Guam Power Authority Unit Testing and Tuning**

***Guam Island***

Designed and applied test equipment for steam, diesel and combustion turbine unit testing. Set up and tested several different governors and exciters. Recommended correct tuning for governors and retested units for correct response to system

disturbances. Completed several unit speed and voltage step responses, which are used to model the generators with computer software

### **Doyon Utilities Fort Richardson D Street Power House and Substation**

#### ***Joint-Base Elmendorf-Richardson, AK***

Electrical design and onsite integration engineer. Designed and implemented generator controls design and provided oversight for the startup and old commissioning for the Fort Richardson Power House. Design included paralleling switchgear and integrating three (3) CAT C175 generators into the existing substation. The plant is designed as a standby plant in the event of a utility outage. The design also included a new PCMS system for the three new standby units and was integrated into the base's electrical PCMS system. The integration of the plant was critical to mission requirements to provide reliable backup power during a utility outage. Unit acceptance testing on Caterpillar C175 diesel units and analyzed governor and voltage regulator response. Tuned and retest units for desired unit response. Completed phasing and commissioning of the existing system to the new standby power plant.

### **Ongoing Cobra Dane Radar Upgrades and Radar Electrical System Technical Support- Brice Environmental Services Corporation**

#### ***Eareckson Air Station, Shemya Island, AK***

Principal electrical and integration engineer. Designed and integrated a new radar cooling system and cooling system PCMS. Design included new PCMS for the cooling system and to integrate into the facilities existing Johnson Controls PCMS. Project included new 480V breakers and MCC for the cooling system. Additional projects onsite include replacement of failed Woodward generator controls on standby generators. Replaced generator controllers and provided onsite startup and commissioning as well as programming on generator controls. Continuous technical support for the radar's electrical infrastructure.

### **Hawaiian Electric Company Unit Testing**

#### ***Honolulu, HI***

Designed and applied test equipment for steam and combustion turbine performance testing to meet the National Electric Reliability Standards. Created test plans and completed onsite testing of several different generator governors and exciters. Generator performance was recorded and analyzed to ensure proper performance for islanded power systems. Testing included unit speed/frequency and voltage/VAR step responses. Added data to transient response software and supported modeling engineers for generator performance.

### **Doyon Utilities Fort Wainwright Power House Upgrade**

#### ***Ft Wainwright, AK***

Electrical design and field commissioning engineer for the Fort Wainwright Power House Upgrades. The project included replacing all existing turbine deck paralleling switchgear as well as existing base feeders while keeping the coal re power plant operating. Design included high pressure hydraulic units for turbine controls as well as new Woodward Steam turbine controls. The existing rotating excitation system was replaced with new Basler Electric DECS- 400 static exciters. Provided

technical oversight of the removal of existing switchgear in sections while plant was operation and integrated existing generators into new switchgear. Designed and commissioned governor controls, exciter controls, switchgear controls and station service and provided onsite design oversight for new PCMS system.

### **Doyon Utilities Fort Greely Power House Upgrade**

#### ***Ft Greely, Delta Junction, AK***

Worked on all aspects of design and commissioning under the direction of a professional engineer for the Fort Greely Power House Upgrades. The project included new 10MVA transformer and replacing (2) two 1950's vintage Enterprise Diesel Generators with new CAT C175 diesel generators. New paralleling switchgear and indoor metal clad switchgear was included in the project. Designed and commissioned Woodward generator controls, CDVRs and relay controls. Tuning and start up on governors and voltage regulators as well as completed switchgear commissioning. Supported onsite load testing of generators and wrote up integration plans. New design also included a new PCMS system. Performed commissioning and onsite supervision of PCMS system.

### **Kodiak Electric High Substation Design**

#### ***Kodiak, AK***

Worked on all aspects of design for the KEA High Substation, under direction of a professional engineer. Project included design of step up transformers, bus layouts and recloser controllers. Expansion of existing substation was required for the addition of three new wind turbines. Tasks included cost estimation, outdoor structural steel/bus design, controls and protection, and relay settings.

### **381st Elmendorf Air Force Base Back Up Power Generation**

#### ***Joint-Base Elmendorf-Richardson, Anchorage AK***

Worked on all aspects of design and commissioning of generator and switchgear controls upgrade. Integrated new controls into existing facility that provides power to the 381ST intelligence squadron on Elmendorf Air Force Base. Provided design to upgrade and add new microprocessor relays. Created relay settings and added auto synchronizers to create an unmanned system. Tuned and balanced loading of generators while running in parallel. Load tested generators against local utility and performed outage testing. Wrote all switching orders and phasing plans for integration into the existing system.

## ***Education***

**B.S. Electrical Engineering, University of Idaho, 2007**