GESCO

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Robert Lee Poitras, P.E.

PRINCIPAL ENGINEER – POWER PLANT ELECTRICAL SPECIALIST

Education & Certification:

MSEE - Naval Postgraduate School Monterey, CA.
Naval Nuclear Propulsion Training (Engineer Officer Qualified)
BS United States Naval Academy Annapolis, MD.
Registered Professional Engineer, Electrical – 1998 (California 15993)

Professional Experience:

1996 - Present -- Engineer, POWERPLANT Consultants/Generation Equipment Services Company

Familiarity With: Gas Turbines, Steam Turbines, Steam Generation Boilers, Heat Recovery Steam Generators, Micro-Turbines, Reciprocating Engines, Nuclear Power Plants, Oil Field Systems, Transformers, Switchgear, Power Plant Auxiliary Equipment, Controls, Distribution, and Air Quality Permits & Reporting.

Project Engineer at Generation Equipment Services Company providing technical services to the industrial power generation industry. During 1996 to 2001, emphasis of projects was for critical use facilities such as hospitals, major data processing centers, industrial cogeneration plants, small utility power projects and similar municipal and industrial plants. More recently since early 2001, emphasis has been on large Utility size 1,000 MW gas fueled power plants using both gas turbines and steam turbines, and for electrical testing and maintenance programs associated with both older plants and new construction projects. Project Test Engineer for an intense switchgear testing and commissioning program for the U.S. Army in Alaska. Expertise in all disciplines of power plant engineering, maintenance and repair including mechanical, electrical and controls.

Consulting Engineer for field maintenance and troubleshooting, plant modifications & upgrades, and project / contract management for a wide range of short-term, high intensity projects. Special emphasis on industrial controls, systems integration, electrical systems installation and testing in critical work environments. Projects have involved a wide variety of power generation technologies (reciprocating engine, gas turbine, steam turbine, etc.) and other industrial processes and systems (pumping, air & gas compression, hydraulics, fuel storage & management, oil field systems and processes, etc.) Analyzes older technology and proposes present day solutions and logic changes to prime mover controls including excitation, load/speed control and remote site control of units. Several projects have involved design, installation and commissioning of precision metering systems for gaseous and liquid process systems. Most project work involves use of programmable logic or other programmable, micro-processor based controls. Evaluated present technologies and built a model for economic use of digester gas in large reciprocating engines for County Sanitation Districts of Orange County. Analyzed cause and implemented solutions for voltage dip downtime at THUMS Long Beach. Has led many critical

troubleshooting projects at power plants and oil fields to quickly restore operation.

Emgineering and Maintenance Manager. For a half year critical period, provided interim management of all engineering and maintenance activities at Long Beach Generating Station for seven 60 MW combined cycle gas turbines for NRG. Tasking included keeping an aged plant operational under tight budget constraints. Required to propose innovative and cost effective solutions to maintain operation of old equipment built as early as 1920. Diagnosed, troubleshot and led repair efforts on mechanical and electrical systems throughout the power plant to maximize availability during the summer peak season. Inspected repairs on hydraulic, mechanical and electrical systems performed by outside contractors.

Design Engineer/Project Manager for time critical upgrade of existing controls on two 1,250 kW EMD emergency diesel generators at LA County/USC Medical Center General Hospital. Analyzed system failure, developed recommended solution, and developed quotation to customer. Designed interface between existing early 1970's analog controls and new digital governor, digital load control/synchronizer, voltage regulator, and fuel actuator. Job included tracing out control circuitry for one engine control with no documentation or prints. Oversaw installation, start-up, system tuning, and acceptance testing of upgraded emergency generator control system. Designed and implemented numerous controls upgrades to gas turbines, steam turbines and reciprocating generators.

Engineer in Charge of Planning & Conducting Y2K Testing Procedures for two Bank of America Data Centers, the two largest private data processing centers in the world. One system included 5 interconnected Allen Bradley PLC-5 series Programmable Logic Controllers with complex sequencing and "voting" logic. Conducted analysis of ladder programs, research on hardware compatibility, actual design of testing procedures, and supervision of the execution of the system testing. Also served as project manger for telecom Y2K consulting team for LADWP. Interfaced with customer and managed over twenty computer/telecom technicians to help LADWP meet legislated deadlines.

Test Engineer for hybrid power plant used by the Carnegie Institute Observatories in Chile. Responsible for ensuring proper integrated operations of the power plant during system testing prior to shipment to Chile. Personally recommended and implemented several control system and electrical changes so plant would operate correctly and reliably in a very remote, critical application. Wrote all testing procedures, inspected all test wiring, and successfully conducted all testing. Plant included a PLC controlled, frequency converting, motor generator; PLC controlled diesel generator; closed transition transfer switch and PLC controlled adjustable automatic peak shaving. Also configured and ran a hybrid vehicle micro turbine to test new portable power concepts for Los Alamos National Laboratories. Trained Los Alamos National Laboratories personnel on operation of the same micro turbine system.

Project Manager & Engineer for Standby Emergency Power (SEP) Switchgear Replacement at the Bank of America San Francisco Data Center, the world's second largest bank data center. Responsible for designing interface of four 3 MW Allison 501-KB gas turbine generators and turbine controls to new PLC controlled switchgear. Wrote and executed generator cutover procedures for each turbine while maintaining remaining turbines in a standby, ready for use condition. Inspected all

wiring and devices related to the project for correct installation. Attended all design and testing meetings as GESCO representative and technical expert on the SEP turbine system.

Engineer for Gas Turbine Auxiliary Systems during building reactivation for Bank of America Brea Center. Designed, installed, and programmed new electronic fuel metering systems for natural gas and diesel fuel required for SCAQMD compliance. Designed an automatic air shutoff system for the air starter on a gas turbine generator. Also responsible for entire facility SCAQMD permit revisions and all reporting of monthly Nox emissions as well as all annual reports to SCAQMD. Also redesigned and implemented new synchronization and load controls for these same turbines.

Programmed & Designed a prototype PLC interface to communicate directly with the DDECIII / EMDEC Electronic Control Module. Trouble shot and repaired an industrial PC computer used for remote and local monitoring of gas turbines. Designed and operated a temporary thermocouple array used for emissions testing of a cogeneration plant. Designed, built, and tested a custom hydraulic test rig for turbine Jet Fuel Starters.

1993 - 1996 -- Navigator/Operations Officer, USS La Jolla (SSN 701)

Development & Execution responsibilities for ship's schedule, exercises, and plans. Coordinated testing of various classified R & D projects with many diverse contracting organizations. Inspected jobs and worksites within own department for safety and completion prior to testing. Trained and qualified junior officers in all aspects of submarine operations.

Managed & Lead in the maintenance, training, and employment of all electronic navigation, communications, and electronic support systems. Supervised operation of a nuclear fast attack submarine. Expertise in tactics and high pressure decision making resulted in being selected as Battle Stations Officer of the Deck. Directed critical damage control efforts and casualty response as Officer in Charge of Damage Control Central for entire ship.

1990 – 1993 -- MSEE Naval Postgraduate School Monterey, CA

Attended the Naval Postgraduate School in Monterey, California under Electronics and Communications Engineering Curriculum. Earned MSEE degree as well as BSEE equivalent. Selected as a member of “Eta Kappa Nu” Electrical Engineering Honor Society. Class emphasis placed in digital electronics, computers, systems engineering and optical electronics. Master’s thesis "Microprocessor Controlled Instrumentation / Navigation Package for Hostile Marine Environments".

1987 - 1990 -- Division Officer USS James Monroe (SSBN 622)

Managed & Supervised personnel, training and maintenance related to ship's reactor instrumentation, reactor protection circuitry, steam turbines, reactor chemistry, radiological health, sonar, and electronic hydraulic pneumatic weapons system. Performed detailed inspections of equipment in area of responsibility. Included in this work was operation, maintenance and troubleshooting / testing of all ships steam propulsion and electrical generation systems. Qualified all in all possible watch

stations as well as a ***Nuclear Engineer Officer***. Supervised deactivation of a Ballistic Missile Submarine and a Nuclear Reactor.

1985 – 1986 -- Naval Nuclear Propulsion Training Orlando, FL. Arco, ID.

Completed Graduate Level Instruction in electrical engineering, physics, mechanical engineering, chemistry, materials, and thermodynamics emphasizing application to an integrated nuclear propulsion system. Qualified as an Engineering Officer of the watch on the S1W prototype reactor, the world's first nuclear engine.

1985 -- Assistant Ship Superintendent Long Beach Naval Shipyard

Coordinated various trades and inspection teams during the reactivation of USS Missouri including steam propulsion, steam power generation, hydraulics, sea water cooling and many other systems. Continually inspected progress and correctness for equipment repair and installation by shipyard contractors and service companies. Area of responsibility included several critical path projects that allowed overall completion to occur on time.