

FORCON INTERNATIONAL

GORDON S. STOBELAAR, P.E.

EDUCATION

Masters of Science in Electrical Engineering - Michigan Technological University
Bachelor of Science Electrical Engineering - Michigan Technological University

ADDITIONAL TRAINING

Manager Development Course - General Electric
Radioactive Source Handling - Process Measuring Devices
Power System Coordination - Multiamp
Design For Six Sigma - General Electric

CERTIFICATIONS

Professional Engineer - Commonwealth of Virginia # 0402013878
Professional Engineer - State of Michigan # 6201022768
Six Sigma Green Belt

CAREER HISTORY

FORCON International - Consultant

General Electric - Drives and Energy Division - Salem, Virginia. Department Manager, Project Manger, Application Engineer, Design Engineer, Installation Supervision and Commissioning.

- R&D Alternate Energy. Wind Machines, Fuel Cells, Battery Storage, & Photovoltaic.
- Gas Turbine Starting Control Systems.
- Pump-Fan-Compressor Drive Systems (Complete Packages including Building)
- Continuous Process Lines. Galvanizing Lines, Pickle Lines, Coating Lines (Drive Control, Man-Machine Interface, Instrumentation, Software)
- Bar and Rod Mills
- Engine Test Stands
- Paper Mill Drive Control
- Electric Shovel Drives
- Wind Tunnel Drive Control

Tilden Mining Company - National Mine, Michigan. Cleveland-Cliffs Iron Company Operator

- Electrical Maintenance Superintendent. Hematite Open Pit Mining, Grinding, Chemical Separation and Floatation Beneficiation. Final product 8 million tons of iron pellets per year.

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Cleveland Cliffs Iron Company - Ishpeming, Michigan

- Electrical Engineer. Iron Ore Beneficiation Plants (US and Canada), Forest Products Lumber Mill. Automation improvements, maintenance schedules, and operation improvements.

Collins Radio Company (North American Rockwell) - Cedar Rapids Iowa

- R&D Engineer for Space Craft Communications. Designed, built proto-types, tested, and certified low-voltage DC-DC inverters for MOL space craft power systems

PUBLICATIONS

10 Mega Watt Battery Storage System - 1990-EPRI Funding for Chino Substation.
Self-Propelled Tripper System - Engineer Mining Journal 1981

ADDITIONAL INFORMATION

Mr. Stobbelaar's 40 year career in the electrical industry has involved all the disciplines necessary for successful electrical system operation including system proposals, schedules, design, equipment specifications, manufacture, testing, analysis, installation and commissioning. System requirements included 24hour/7 days per week up time. Customers included US-domestic, Pacific Rim and Europe.

System Applications and Equipment include the following list:

- Vibration Signature Analysis
- Emergency and Uninterruptible Power Systems
- Steam Boiler and Kiln Control Systems (Coal-Oil-Gas)
- High-Medium-Low Voltage Cables and Termination Systems. Copper and Aluminum
- Open Pit Mining Power Distribution Systems. Substations, Pole Lines, Switch Shacks, Trailing Cable, Cable Splicing, etc.
- Industrial Plant High-Medium-Low Voltage Power Distribution Systems to 200 Mw (including coordination and lightning protection). Both Green Field and Existing
- Residential Wiring and Code Requirements.
- Two-way Communication Systems
- Remote Control and Monitoring Systems (Pumping Stations, Material Distribution and Storage, etc)
- Bridge Crane Radio Control
- Alternate Energy Systems (Wind-Fuel Cell-Lead Acid Battery-Photovoltaic). Including Residential to Utility Interface Agency Requirements. UL and NEC.
- Variable speed AC and DC Drive Systems to 60,000 Horsepower. Pumps, Fans, Drive Trains, Conveyors, Kilns, etc.)
- Continuous Process Line Drive and Control Systems
- Man Machine Interface Control
- Process Line Instrumentation (Pneumatic, Electric, Mechanical) Closed loop process control

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- Programmable Logic Controllers
- Equipment Specifications (Motors, motor control, transformers, logic control, instrumentation, etc.) Testing and Agency requirements.
- Equipment Performance Evaluation and Acceptance.
- Real Time Critical Event Project Schedules and Recovery Analysis.
- Computer System Modeling
- Non-Destructive Data Measurement and Analysis. (Contract and Non-Contract Devices; RTD's, Thermocouple, Infrared, piezo-electric, inductive, sonic, microwave etc.)
- Conveyor Belt Scales (Mechanical and Nuclear)
- Training
- System Documentation. (Operation Manuals, Spare Parts, Failure Analysis Tree)
- National Electric Code Application and Interpretation.
- Breakers, Panel Boards,
- Customer Support and product failure analysis. (Motors, controllers, breakers, printed circuit boards, relays, switches, solid-state devices, terminals, software, firmware, etc.)
- Emergency Break down repair schedules
- Planned major maintenance schedules.
- Lighting Systems (Parking Lots, High Bay, Rooms)
- Testing and Test Equipment. (Cable locators, High Voltage Meggers, Multi-meters, 4-20ma Sources, Thermocouple and RTD Testers, pneumatic testers)
- Pole Line Power Distribution (HV-MV-LV). Switches, Poles and Hardware, Cable, etc.
- Sound Recording and Analysis Equipment.
- Material Transportation Systems. Conveyors, Slurry, Truck (electric and petro)