

MOHINDER S. KALSI, P.E.

EXPERIENCE SUMMARY

Consultant for **138KV GIS Substation for NYPA**, implementation of **Fuel Cell and Solar P**: Appendix-R, Lead Electrical Engineer and Project Manager with experience for more than 30 years in Pharmaceutical, Nuclear plant engineering and Substations, electrical design & distribution, I&C, startup and operation, testing & troubleshooting of several systems and **M-G sets, power supplies (UPS), variable frequency design (VFD)**. Prepared budget request, schedules and supported maintenance of electrical, mechanical and I&C systems including normal and emergency power systems (low, medium & high voltages, DC Systems, UPS, Battery & Battery chargers) compressors, chillers and HVAC units. Developed and implemented **10CFR50.63 Station Blackout (SBO), Arc Flash NFPA 70E** requirements; **fire protection** and **upgraded security system** to code. Conducted energy audit, prepared report and implemented energy optimization. Supported installation and commissioned 4 MW emergency **diesel generators (EDG)** and synchronized to the 5KV line for Bio-Tech Facilities. Implemented **SPCC Rule - 40CFR112** (Spill Prevention, Control and Countermeasures) at the site. As a team lead, resolved technical challenges to achieve objectives, promoted sharing of knowledge across organizational boundaries through personal interactions and effective communications. Effectively utilized networking with customers as well as external supplier, vendors and consultant to achieve positive outcomes. Managed construction of new security center and participated in the validation process.

In addition:

- Developed 138KV, 115KV, 5KV, and 480VAC substation switching procedure, SF6 Circuit switchers, upgrading 138KV GIS Substation, Station Blackout guidelines and prepared electrical safety manual. Performed circuit analysis for NFPA 805 program; evaluated electrical systems and conducted arc flash study (NFPA 70E) and fire protection systems. Developed and reviewed logic, control circuit schematics and sized equipment, performed design and voltage drop calculations, short circuit calculations, protective relay coordination study, 125 VDC and 24 VDC battery sizing, breaker, fuse and cables sizing and startup of electrical systems. Provided support to I&C and mechanical systems.
- Prepared statement of requirements (SOR), basis of design (BOD) documents, design change packages to address design deficiencies enhance reliability and single point vulnerability. Evaluated different options for modifications and, prepared budget, design change packages (DCP), schedule and implemented design changes. Applied design guidelines and standards to achieve cost effective functionally finished projects such as fire suppression system and security center upgrade.
- Developed and turned over projects on schedule and under budget for projects: Upgrade Control room chart recorder, upgrade breaker replacement and emergency generator governor control, main generator rewind. Participated in power up- rate projects, turbine upgrade and computer upgrade for NMP site and security center at BMS facilities
- Prepared and reviewed Standard Operating Procedures (SOPs), preventative maintenance procedures (PM), performed design verification, monitored operational events (OE), analyzed degraded components and conducted failure analysis of electrical systems, prepared job plans, presented safety evaluations 10CFR50.59 applicability reviews and Engineering Supporting Analysis (ESA) and Operability determination (OD).
- Conducted load study and developed Station Blackout (SBO) program in accordance with 10CFR50.63, Sized, designed large switch-gears, control panel, transformer and performed calculations to support the design and developed schematic circuits. Prepared electrical (1-line & 3-line) diagrams and connection diagrams. Sized electrical equipments (transformers, safety switches, panels, cables, breakers), performed load, short circuits and voltage regulation calculations.
- Successfully worked with vendors, internal & external auditors and government agencies (FDA, FAA; NRC and other agencies) and demonstrated planning and organization skills and self-confidence. Maintained knowledge of IEEE, NEC, NFPA 70E & 805 and OSHA standards.

EDUCATION, LICENSES AND REGISTRATIONS

- M.S., Electrical Engineering, McGill University, Canada, 1977
- B.S., Electrical Engineering, Punjabi University, India, 1975
- Professional Engineer (P.E), State of New York, License # 0062446
- Professional Engineer (P.E), State of Washington, License # 0021965
- Professional Engineer (P.E), Province of Ontario, License # 22804504
- Certified "Level III Test Engineer" per ANSI N.45.2.6

ADDITIONAL TRAINING

- Project Management Course -Nine Mile Point Nuclear Training Center and Bristol-Myers Squibb, Co.

Williams Electrical Mechanical Group, Inc.

- Seminars on NEC, Electrical Grounding & Bonding, Protection Implementation of Energy Saving Measures, Power Factor Correction, Transfer Switches, Shaft Currents, Medium Voltage Cables and Intrinsically Safe Barriers.
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PROFESSIONAL EXPERIENCE (Mohinder Kalsi)

New York Power Authority (NYPA)

May 2012 – Present

- Consultant to NYPA, providing engineering service to Energy Services Group to upgrade **138KV Substation, Power Transformers and 27KV Switchgear with GIS technology, protective relays and controls for 5KV emergency Generators with associated support equipment** for Metro-North Railroad (MNR) in New York City as follows:
 - Review and or modify & design electrical one line diagrams and schematic for protection and control circuits associated with HV substation & switching stations, SEL & GE relay setting, and miscellaneous controls, alarms monitoring devices, transformers controls, breakers controls, SCADA, AC Power and DC controls as well as witnessing Factory Acceptance Tests (FAT) of GIS, transformers, switchgears and control panels.
 - Worked with electrical, civil designers and engineers, system protection, construction and field personals. Make visits to the construction site and check field conditions on the assigned projects as required.

Constellation Energy Group and Southern Nuclear Company:

2010 – February 2012

- Consultant to Nuclear facilities; Analyzed controls and performed circuit analysis for **NFPA 805 program/Appendix-R** for Ginna and Hatch Nuclear Stations. Assessment of Probabilistic Risk Assessment (PRA) based components; PRA and Non-PRA interlocks and cable selection of safe shutdown equipments. Identification of fire zones, review of cable routing information and verification of equipment-to cable selection, interlocks and its relationship for fire PRA cables to mitigate core damage frequency (CDF).

Bristol Myers Squibb Co. (Syracuse, NY)

2005 - 2010

- As a Lead Electrical Engineer and Engineering Project Manager, developed 1-Line diagram for the electrical systems; prepared switching instruction for **115KV Switchyard with SF6 Circuit switchers**, 5KV, 480V distribution, SBO guidelines, VFD training manuals and training shop personnel. Prepared job plans for the VFDs PM program. Conducted energy audit, prepared report and implemented energy optimization. Implemented SPCC Rule - 40CFR112 (Spill Prevention, control and Countermeasures) at the site. Completed arc flash study (NFPA 70E), fire protection; security requirements and implemented its recommendations. Implemented NFPA 70E; fire protection and upgraded security system to code. Performed load study for the site and decommissioned one substation. Emphasized cost control, maximize performance and optimized resources.
- As an Engineering Project Manager, prepared registration, recognition gates and capital appropriation request (CAR) for numerous projects, supported reconstruction projects and provided alternate power sources. Built a new security center and installed new security system within budget. Supported installation and commissioned 4 MW backup emergency diesel generators (EDG) to mitigate SBO and synchronized to the 5KV line for Bio-Tech Facilities.

Niagara Mohawk / Constellation Energy Group (Nine Mile Nuclear Stations)

1989 - 2005

- As a Senior Engineer in Engineering Group (Plant Engineering / Design / Project Management / Plant Evaluation). Reviewed logic and developed control circuit schematics, sized equipment, performed design calculations, protective relays coordination study, short circuit study, conducted evaluations and defined safety margins for electrical systems. Conducted walk-down of equipment and prepared design change packages (DCP) to enhance reliability, single point vulnerability and obsolescence issues for many systems. Prepared and presented safety evaluations for SORC approval, updated safety analysis reports. Completed selective coordination studies for AC/DC systems (low and medium voltages) and calculations for Station Blackout (SBO), UPS sizing, batteries and DC short circuit calculation for NMP2 and 10CFR Part 21 applicability issues.
- Performed Station Blackout-out (SBO) studies, calculations, generated SBO bases document, reviewed SBO procedures and fully implemented NMP site **SBO program in accordance with NUMARC 87-00**. Conduct evaluation and recommend resolution for degraded system performance; monitored OE issues, reviewed **Appendix-R** and participated in the breaker refurbishment program at NMP site. Prepared DBD for the NMP2 main 1250 MW generator and exciter system. Reviewed packages for DC design basis reconstitution for NMP1 and ensured documentation is complete, accurate and consistent. Evaluated system, installation and testing of plant modification and provided technical assistance to resolve equipment problems. Evaluated test results and made recommendations. Prepared 10 CFR 50.59 safety evaluations and supporting analysis with operability determination for continued operation of Nuclear Power Stations.

Williams Electrical Mechanical Group, Inc.

- As a project engineer, prepared project reports, budgets, schedules, established priorities, coordinated the implementation of projects, maintained knowledge and assisted in implementation of modification including testing on the T-G rotor system and the replacement of obsolete breakers, auxiliary relays for NMP Nuclear Station.

Stone & Webster (Cherry Hill, NJ)

1983 – 1989

- As a Senior Engineer assigned to NMP2 as Test & Startup Engineer and WNP-2 Nuclear Station Washington. Performed system reviews, design, logic, schematic, connection diagrams and test to verify system operation and compliance to the design basis of electrical, and I&C systems and recommended design changes as required. Verified control logic and conducted troubleshooting of control circuit for electrical systems, supported mechanical and I&C systems. Performed inspection, testing and maintenance of systems. Prepared test procedures, performed acceptance and pre-operational tests, reviewing tests and test data.

United Engineers (Philadelphia, PA)

1981 – 1983

- Startup Engineer assigned to WNP-2 Nuclear Station Washington – Same duties as above.

Federal Pioneer (Ontario, Canada)

1980 - 1981

- Supervisor of Switchgear Projects - Resolved equipment and engineering design problems. Developed control circuit for medium and low voltage switchgear and unit substations, designed protective scheme, prepared wiring diagrams and interconnecting cables and harness layouts. Prepared coordination study and test instruction for circuit verification.

ESB Corporation (Kent, England)

1977 – 1980

- As a development engineer, conducted tests on AC and DC motors, high frequency MG sets & UPS and control panels for aircraft and military applications. Analyzed test results and conducted failure analysis.