



FULL LIST OF SERVICES FOR CCP ENGINEERING INC. – REV OCT.24, 2013

Contact Nino Balbaa for more information: nino@ccpeng.ca, 647-469-6466

Industrial Safety

➤ **Fire Safety:**

- **Area classifications** of flammable and/or combustible liquids, vapours and dusts for Electrical Code compliance using NFPA, FM Global and other standards.
- **Fire Code audits** against National and Provincial Fire Codes, NFPA Standards such as NFPA 101, applicable sections of Provincial Building Codes, and best practices.
- **Fire Safety Plans** (facility, equipment or operation specific).
- Design and construction management for **Flammable Storage & Dispensing facilities and other rooms** requiring special provisions (eg. compressed flammable gas, laboratories, aerosol filling, etc.)
- Pre-Start Health & Safety Review for **Flammable Liquid Storage & Dispensing** applications (trigger 1 of the Table in S.7 of Ontario Regulation 851)
- Pre-Start Health & Safety Review for any 'Process That Involves The **Risk Of Ignition Or Explosion**' (trigger 4 of the Table in S.7 of Ontario Regulation 851)
- Pre-Start Health & Safety Review for **Dust Collectors** (trigger 5 of the Table in S.7 of Ontario Regulation 851)
- Design of **Dust Control Systems**
- Design and specification of **Fire Protection Systems**

➤ **Machinery:**

- Pre-Start Health & Safety Review for **Machine Guarding** applications (trigger 2 of the Table in S.7 of Ontario Regulation 851)
- Custom machine **guarding design** (perimeter fencing or 'form-fitting' sheet metal / Lexan / wiremesh guards)
- **Electrical** safety circuit **design** for control reliability
- **PLC** programming, especially relating to safety circuits (safety PLC's and programmable safety relays).
- **Pneumatic / hydraulic** circuit **design** for control reliability
- Safe distance and machine **stop time analysis**.
- **Press Control** Design (Mechanical - Hydraulic).
- Responses to **Ministry of Labour orders** such as "54(1)K," and "54(1)L," orders, which require a Certificate of "Not Likely to Endanger" before the machine can operate again.
- **Mechanical Design & Engineering**.
- Hazard warning **labels**.
- **Turnkey safety integration** projects, where CCP Engineering can design, supply, manage and sign-off on the safety upgrade project.

➤ **Equipment** (other than machinery):

- Pre-Start Health & Safety Review for **Lifting Devices** And Automotive Lifts (trigger 7 of the Table in S.7 of Ontario Regulation 851)





- Pre-Start Health & Safety Review for **Racking Systems** (trigger 3 of the Table in S.7 of Ontario Regulation 851)
- **Lockout / tagout** review, including the evaluation of equipment and generation of procedures to meet the requirements of CSA Z460
- Structural analysis of **cranes** and **lifting devices**.
- **Laser Safety** Reviews per CAN/CSA E60825-1, CSA Z386 and CAN/CSA-C22.2 NO. 60601-2-22-01.

- **Processes:**
 - Pre-Start Health & Safety Review for **Foundries** (trigger 6 of the Table in S.7 of Ontario Regulation 851)
 - Pre-Start Health & Safety Review for **Industrial Hygiene** (trigger 8 of the Table in S.7 of Ontario Regulation 851)
 - **Warehouse** safety including: forklift, fire protection, dock safety, racking damage assessment and good practices
 - **Workwell audits**
 - **Ergonomic analysis** to increase productivity and improve occupational health and safety.
 - **Industrial hygiene and noise audits.**
 - **Ventilation studies** including:
 - Dilution Ventilation Design
 - Heating, Ventilation & Air Conditioning,
 - Heat Loss Calculations,
 - Duct Design,
 - Fume Extraction Systems,
 - Air Compressors and Dryers.

Construction Safety

- **Construction Safety**, including:
 - Detailed work procedures and instructions in compliance with OHSA.
 - Safety policy manuals.
 - Engineered repair procedures.
 - Safe welding procedures and practices.
 - Site inspection and site safety administration.
 - Mechanical access equipment including mast climbing work platforms,
 - Worker-pedestrian and motorized vehicle awareness training: worker-vehicle interaction, increased "people" awareness, workplace specific examples, rigging and hoisting practice, slings and rigging inspection, and lift equipment inspection.
 - Inspection and preparation of repair procedures for construction equipment such as backhoes, skid steers, scrapers, bulldozers, concrete pumps, piling rigs, etc.
 - Certification of truck-mounted aerial devices, elevating work platforms, tower, mobile and overhead cranes, forklifts and mast climbers.
 - Design and certification of fall arrest, rigging systems, anchorage connections and static lines.
 - Design and analysis of ladder systems.
 - Equipment inspection and non-destructive testing.
 - Crane operations, engineered lifts, rigging, hoisting and associated material handling including safe crane operations.



- **Safety audits** for construction machinery, including:
 - Tunnel boring machines,
 - Mobile Cranes,
 - Mining vehicles,
 - Aerial devices,
 - Elevating work platforms,
 - Tower Cranes
- **Tower Crane** mechanical & electrical inspections. *Note: the Ministry of Labour in Ontario has placed a great deal of emphasis on the requirement for mechanical & electrical inspection (not just structural).*

General

- Development of **Purchasing Specifications** to ensure that safety is built into the design phase or that the responsibility for safety and compliance are shifted to the equipment supplier.
- **Forensic Engineering & Litigation Support** services, including:
 - Accident investigation and failure analysis for industrial, construction and mining accidents
 - Fire and explosion investigations
 - Accident reconstruction and computer animation of accidents
 - Litigation support
 - Expert witness services in court
 - Field testing of control systems on machinery, vehicles, etc.
 - In-house facilities to carry out strength testing, slip testing, hardness testing, and other mechanical tests.
 - Collaborations with metallurgical testing facilities
- **Structural Analysis / Finite Element Analysis¹**, including:
 - Static / dynamic / thermal stress analysis
 - Linear and non-linear analysis
 - Mechanical event simulation
- **Training** on-site or off-site in all aspects of safety and legal issues in relation to industrial establishments and construction projects.
- **Health & Safety Programs** (manuals, training, monitoring). Integration of Safety Information into Manuals.
- **JHSC setup** and coaching.
- **Accident/Incident Investigations & Training.**
- **WHMIS** training and development.
- **CAD and Solid Modeling** of parts, assemblies and bill of materials; for machines, mechanical equipment, piping layouts and ducting layouts.
- 3D scanning and modeling using the technique of **Photogrammetry**
- **Project Management** including Budget Estimates, Critical Path Scheduling, Procurement, Specifications, Tender Administration, Contractor Selection, Progress Payments, Project Documentation, Filing for Various Permits.
- **Construction Management** including Site Management, Procurement, Specifications Adherence, Contractor Co-ordination, Quality Assurance, Schedule Adherence.
- **Confined Space** assessment and development of entry requirements.
- **Crane and Elevating Work Platform** Inspection & Engineering, including:

¹ Utilizing software packages such as Solidworks Simulation



- Code compliance testing & certification
- Annual inspection
- Repair procedures
- Load chart certification
- Special Access **Elevating Devices**², with services including:
 - Engineering design analysis
 - Control circuit reviews for safety
 - Design permit application support
 - Field reviews for applicable Code compliance
 - Field physical testing
 - Final commissioning reviews
 - Material hoist reviews
- **Fall Protection System Design & Engineering**
 - Complete custom design of fall protection systems including fall arrest, fall restraint, travel restraint, etc. for a wide range of applications.
 - Full turnkey services including design and installation by experienced professionals.
 - Peer reviews of existing systems designed and installed by others.
 - Prepare procedures for operating, maintenance, fall protection, and confined space.
 - Annual inspection and load testing of fall arrest and fall protection systems. Non-destructive testing and re-certification.
- **HAZOP**³, Risk Analysis. Feasibility Study, Compliance & Risk Engineering
- Safety Integrity Level (**SIL**) **Assessment** per EN62061, ISA 84.01 and IEC 61511 standards.
- Performance Level (**PL**) **Assessment** per ISO 13849-1.

² Please note that these are not commercial 'Elevators', which are covered entirely by TSSA, but rather specialized types that require variance applications to the Regulatory Authorities.

³ Utilizing software packages such as PHA/Pro