**1.1 Related Requirements**

.1 Section 01 35 29 - Health and Safety

**1.2 References**

.1 Canadian Standards Association (CSA).

- .1 CSA C22.1-06 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
- .2 CAN/CSA C22.3 No.1-06 - Overhead Systems.
- .3 CSA C22.3 No.7-06 - Underground Systems.

.2 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

**1.3 Definitions**

.1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.

.2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.

.3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).

.4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.

.5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

.6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.4 Compliance Requirements

.1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:

- .1 Canadian Electrical Code
- .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
- .3 Regulations and code of practise as applicable to mechanical equipment or other machinery being de-energized.
- .4 Procedures specified herein.

.2 In event of conflict between any provisions of above authorities the most stringent provision will apply.

1.5 Submittals

.1 Submit copy of lockout procedures, sample of lockout permit and lockout tags proposed for use in accordance with Section 01 33 00 - Submittal Procedures. Submit within 14 calendar days of acceptance of bid.

1.6 Isolation of Existing Services

.1 Obtain Departmental Representative's written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.

.2 To obtain authorization, submit to Departmental Representative the following documentation:
- .1 Written request to isolate the particular service or facility and;
- .2 Copy of Contractor's Lockout Procedures.

.3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, as follows:
- .1 Fill-out standard form in current use at the Facility as provided by Departmental Representative or;
- .2 Where no form exist, make written request indicating:
  - .1 The equipment, system or service to be isolated and its location;
  - .2 Duration of isolation period (i.e.: start time & date and completion time & date).
  - .3 Voltage of service feed to system or equipment being isolated.
  - .4 Name of person making the request.

.4 Do not proceed with isolation until receipt of written notification from Departmental Representative granting the Isolation Request and authorizing to proceed with the work.
- .1 Note that Departmental Representative may designate another person at the Facility being authorized to grant the Isolation Request.

.5 Conduct safe, orderly shutdown of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.

.6 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require isolation of existing services.

.7 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Facility Manager. Minimize impact and downtime of Facility operations. Follow Departmental Representative's directives in this regard.

.8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 0135 29 - Health and Safety Requirements.

1.7 Lockouts

.1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.

.2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.

.3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tagout it's sources of energy.

.4 Include as part of the Lockout Procedures a system of lockout permits managed by Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.

.1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.

.2 Duties of person managing the permit system to include:

.1 Issuance of permits and lockout tags to workers.

.2 Determining permit duration.

.3 Maintaining record of permits and tags issued.
.4 Making a Request for Isolation to Departmental Representative when required as specified above.
.5 Designating a Safety Watcher, when one is required based on type of work.
.6 Ensuring equipment or facility has been properly isolated.
.7 Collecting and safekeeping lockout tags returned by workers as a record of the event.

.5 Clearly establish, describe and allocate responsibilities of:
.1 Workers.
.2 Person managing the lockout permit system.
.3 Safety Watcher.
.4 Subcontractor(s) and General Contractor.

.6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.
.1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the Departmental Representative.
.2 Clearly label the document as being the Lockout procedures applicable to work of this contract.

.7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.

.8 Use industry standard lockout tags.

.9 Provide appropriate safety grounding and guards as required.

1.8 Conformance

.1 Brief all workers and subcontractors on requirements of this section.
Stringently enforce use and compliance.

1.9 Documents On Site

.1 Post Lockout Procedures on site in common location for viewing by workers.

.2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.

.3 Upon request, make available to Departmental Representative or to authorized safety Representative for inspection.

END OF SECTION