

Part 1 General

1.1 SUMMARY

- .1 Section Includes:
 - 1 The existing system is Siemens MXL. The work of this contract is to maintain the existing system to accommodate renovations. Work to include the following:
 - .1 Remove and re-install existing devices.
 - .2 Add new devices as shown on the drawings.
 - .2 Coordinate with the site to schedule system outages and temporarily remove devices from the system.
 - .3 Add new relays for “Emergency Generator Run” annunciation, and “Fire Pump Trouble” annunciation.
 - .4 Make modifications to the existing main annunciators to accommodate new lamps indicating “Emergency Generator Run” and “Fire Pump Trouble”.
- .2 All fire alarm system wiring shall be installed in conduit and all conductors shall be rated for the equipment application. Provide shielded conductors as required. Wiring to match existing installation.

1.2 Related Sections:

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3 Section 26 05 21 - Wires and Cables (0-1000 V).
- .4 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .5 Section 26 36 23 - Automatic Load Transfer Equipment

1.3 REFERENCES

- .1 Government of Canada
 - .1 TB OSH Chapter 3-03, 1997-01-28, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-03, Standard for Fire protection Electronic Data Processing Equipment.
 - .2 TB OSH Chapter 3-04, 1994-12-22, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-04, Standard for Fire Alarm Systems.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

- .3 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S524-06, Standard for the Installation of Fire Alarm Systems.
 - .2 CAN/ULC-S537-04, Verification of Fire Alarm Systems
- .4 National Fire Protection Agency
 - .1 NFPA 72-2002, National Fire Alarm Code.
 - .2 NFPA 90A-2002, Installation of Air Conditioning and Ventilating Systems.

1.4 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Include:
 - .1 Layout of equipment.
 - .2 Complete wiring diagram, including schematics of modules.
- .3 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .2 Instructions: submit manufacturer's installation instructions.
 - .3 Manufacturer's Field Reports: manufacturer's field reports specified.
- .4 Closeout Submittals:
 - .1 Submit maintenance and engineering data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals in accordance with ANSI/NFPA 20.
 - .2 Submit following:
 - .1 System wiring diagrams:
 - .1 Submit complete wiring diagrams of system showing points of connection and terminals used for electrical connections in the system.
 - .2 Show modules, relays, switches and lamps in control panel.

1.5 QUALITY ASSURANCE

- .1 Provide services of representative or technician from manufacturer of system, experienced in installation and operation of type of system being provided, to supervise installation, adjustment, preliminary testing, and final testing of system and to provide instruction to project personnel.

Part 2 Products

2.1 MATERIALS

- .1 Equipment and devices: ULC listed and labelled and supplied by single manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 INSTALLATION

- .1 All work on the fire alarm system shall be done outside of facilities normal operating hours. Provide building operators 48hours notice advance of any work to be performed on the fire alarm system. Do not proceed without prior approval from building operators.
- .2 System to remain fully operational at all time during construction period.
- .3 Pre-Verification: The Electrical contractor and equipment supplier shall conduct a system pre-verification and submit a letter to the Departmental Representative that the system is 100% complete and ready for testing. The system verification will not proceed until the pre-verification is complete.
- .4 System Inspection: The electrical contractor and fire alarm equipment supplier's technical stall or technical agent to carry out a complete inspection test of the existing and new system on completion of installation to ensure the following:
 - .1 System is complete and functional in accordance with the drawings, specifications and regulatory requirements.
 - .2 System is installed in accordance with manufacture's recommendations.
 - .3 Regulations covering circuitry supervision are adhered to.
 - .4 During the period of inspection, one electrician and one apprentice to assist.
 - .5 All auxiliary equipment has been connected and is operational.
 - .6 On completion of inspection, and only after all obvious work has been completed, Electrical contractor to provide a written statement to the Departmental Representative stating that the system inspection is complete and ready for verification.
- .5 Performance Verification:
 - .1 The Departmental Representative will direct the performance Verification of Fire Alarm System in accordance with CAN/ULC S537-04, standard for Verification of Fire Alarm System Installations.
 - .2 Prior to requesting performance verification by Departmental Representative, ensure that fire alarm system is fully operable and that subsequent work to be performed on system will not invalidate examinations and tests performed during verification procedure.

- .3 Electrical subcontractor and fire alarm system manufacturer's representative shall be present at all times during the verification procedure and shall assist the Departmental Representative as follows:
 - .1 Provide all required testing equipment and tools.
 - .2 Disassemble and re-assemble system components.
 - .3 Disconnect and reconnect wiring.
 - .4 Perform required field adjustments.
 - .5 Replace defective components.
 - .6 Perform all other work on the system required by the verification procedure.
- .6 Electrical contractor to include in his base bid all costs for fire alarm system verification and any additional costs to change or alter operation or installation to meet intent of the specification or regulatory code requirements.
- .7 Hemisphere Engineering's fee for performance verification is \$2,500.00, plus GST.
- .8 Notify Departmental Representative 1 week in advance of verification being performed.

END OF SECTION