Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 26 05 00 - Common Work Results for Electrical.

1.2 REFERENCES

.1 Treasury Board of Canada Secretariat (TBS), Occupational Safety and Health (OSH)

.1 Fire Protection Standard-10.

.2 Underwriter's Laboratories of Canada (ULC)

.1 CAN/ULC-S524-06(R2008), Standard for the Installation of Fire Alarm Systems.

.2 CAN/ULC-S526-07, Visible Signal Devices for Fire Alarm Systems, Including Accessories.

.3 CAN/ULC-S527-11, Standard for Control Units for Fire Alarm Systems.

.4 CAN/ULC-S537-04, Standard for the Verification of Fire Alarm Systems.

.3 Alberta Codes:

.1 Latest edition of the Alberta Building Code (National Building Code of Canada with the applicable amendments for the province of Alberta).

.2 Latest edition of the Alberta Fire Code (National Fire Code of Canada with the applicable amendments for the province of Alberta)

.3 Latest edition of the Alberta Electrical Code (CEC with the applicable amendments for the province of Alberta).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for all devices connected to the Fire Alarm System and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Shop Drawings:

.1 As per Section 26 05 00 - Common Work Results for Electrical.

.2 Indicate on shop drawings:

.1 Detail assembly and internal wiring diagrams for control unit.

.2 Revised overall system riser wiring diagram identifying initiating circuit changes; identifying terminations, terminal numbers, conductors and raceways.

.3 Details for devices.

.4 Details and performance specifications for control, annunciation and peripherals with item by item cross reference to specification for compliance.

.5 Step-by-step operating sequence, cross referenced to logic flow diagram for new devices.

1.4 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for new devices for incorporation into manual.

.3 Include:

.1 Instructions for complete fire alarm system to permit effective operation and maintenance.

.2 Technical data - illustrated parts lists with parts catalogue numbers.

.3 Copy of approved shop drawings with corrections completed and marks removed except review stamps.

.4 List of recommended spare parts for system.

1.5 MAINTENANCE MATERIAL SUBMITTALS

.1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

1.6 DELIVERY, STORAGE AND HANDLING

.1 As per Section 26 05 00 - Common Work Results for Electrical.

Part 2 Products

2.1 DESCRIPTION

.1 Regulatory Requirements:

.1 To TBS Fire Protection Standard.

.2 Subject to Fire Commissioner of Canada (FC) approval.

.3 Subject to FC inspection for final acceptance.

2.2 SYSTEM OPERATION

.1 Actuation of supervisory devices (generator fuel management system common alarm / system unavailable) to:

.2 Activates a fire alarm panel trouble alarm at the local fire alarm panel.

.1 Activates an Electrical Substation trouble alarm at the central (master) fire alarm panel for the site.

.2 Cause electronic latch to lock-in supervisory state at central control unit.

.3 Indicate respective supervisory zone at central control unit and at display.

.4 Cause audible signal at central control unit to sound.

.5 Activate common supervisory sequence.

.3 Trouble on system to:

.1 Indicate circuit in trouble at central control unit.

.2 Activate "system trouble" indication, buzzer and common trouble sequence. Acknowledging trouble condition to silence audible indication; whereas visual indication to remain until trouble is cleared and system is back to normal.

2.3 CONTROL PANEL

.1 Central control unit (CCU).

.1 All new trouble alarm wiring and signals to be compatible with the existing system installed within the building.

2.4 POWER SUPPLIES

.1 Fire alarm panel to power the dry contacts from the Diesel Generator Fuel Management system.

2.5 WIRING

.1 Twisted copper conductors: rated 300 V.

.2 Control circuits / generator fuel management system trouble: 14 AWG minimum, and in accordance with manufacturer's requirements.

2.6 AS-BUILT RISER DIAGRAM

.1 Fire alarm system riser diagram: to suit existing minimum size 600 x 600 mm. Obtain existing riser diagram from client and provide an as-built showing the inclusion of the diesel generator fuel management system alarm(s).

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for fire alarm installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

.1 Install systems in accordance with CAN/ULC-S524 and TB Fire Protection Standard.

.2 Connect trouble alarming circuits to main control panel.

.3 Splices are not permitted.

.4 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.

.5 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.

.6 Identify circuits and other related wiring at central control unit, annunciators, and terminal boxes.

3.3 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical, CAN/ULC-S537 and manufacturer's recommendations.

.2 As per Part 4 - Commissioning of this Section.

3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

.2 Place materials defined as hazardous or toxic waste in designated containers.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by fire alarm system installation.

3.6 CLOSEOUT ACTIVITIES

.1 Provide on-site lectures and demonstration by fire alarm equipment manufacturer to train operational personnel in use and maintenance of fire alarm system.

3.7 MAINTENANCE

.1 Provide individual price on tender form for subsequent PROM re-burns. Price: good for 2 years from date of project completion.

.2 Provide individual price on tender form for temporary program changes during construction period, to include zone labels, control functions, system operation.

Part 4 Commissioning

4.1 COMMISSIONING ORGANIZATIONS

.1 Certified member of ECAO or CFAA.

4.2 QUALIFICATIONS

.1 Qualifications: fire alarm system programming and commissioning work to be carried out by a qualified, fire alarm technician for the existing system holding a valid System Specific Alarm Technician certificate.

4.3 PROCEDURES

.1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical, CAN/ULC-S537 and manufacturer's recommendations.

.2 Inspect wiring connections to all devices comprising the system.

.3 Fire alarm system:

.1 Test such device and alarm circuit to ensure manual stations and detectors transmit alarm to control panel and actuate general alarm.

.2 Provide final PROM program re-burn for system Departmental Representative incorporating program changes made during construction.

.3 Test operation of all new devices and 10% of each device type on the system to verify its function.

4.4 WITNESS

.1 Final commissioning of all electrical equipment and fire alarm system changes shall be performed in the presence of the Engineer of Record representative in accordance with the Alberta Building Code, latest edition.

.2 The contractor shall provide two (2) weeks' notice to the Departmental Representative and Engineer of Record of the commissioning day in order for travel for the Engineer of Record to be arranged. If the commissioning is cancelled for whatever reason and requires rescheduling, the contractor shall be responsible for all travel costs, delays, fees and expenses for the Engineer of Record to be present for the rescheduled date(s).

.3 The Engineer of Record is only scheduled to be present on site for one commissioning visit. All commissioning for electrical equipment and fire alarm system changes must be performed during this one visit. Additional Engineer of

Record site visits to witness the contractors commissioning is at the expense of the contractor.

END OF SECTION