

**FORM P (R1): PROPOSAL INFORMATION**

Bidder:	Bidder Rep:
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Notes:

1. The City reserves the right to clarify, investigate, and request additional information to confirm the Bidder's claim regarding any data provided.
2. The Bid Evaluation is not based solely upon the information submitted on this form.
3. This form is made available to Bidders in both PDF and Microsoft Word format. In the event of a discrepancy between the forms, the PDF version will take precedence.
4. Complete "Bidder Response" section in full. Failure to complete or submit required information may result in disqualification of the complete Bid.
5. If insufficient space is provided, attach additional sheets with required information.

Item	Description	Bidder Response										
<b>1.0</b>	<b>Product Lifecycle Guarantee</b>											
<b>1.1</b>	<b>Control System Lifecycle Guarantee</b>											
1.1.1	Are any proposed products scheduled to be removed from active sale and/or production? If yes, explain.	<input type="checkbox"/> No plans to remove the proposed products from active sale and/or production are in place. <input type="checkbox"/> Yes, but plans call for _____ more years of active sale/production. Describe products proposed to be removed from active sale: _____										
1.1.2	Is a guarantee provided that the Control System equipment, including all programmable controller and HMI equipment and software will be operable, maintainable and fully supported by the manufacturer for at least twenty-five (25) years from the award of the Contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, please identify the guarantee that can be provided:										
1.1.3	How many years since formal introduction have the proposed product line(s) been offered?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 70%;">Model Series:</th> <th style="text-align: left; width: 30%;">Years</th> </tr> </thead> <tbody> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </tbody> </table>	Model Series:	Years	_____	_____	_____	_____	_____	_____	_____	_____
Model Series:	Years											
_____	_____											
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_____	_____											

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1.1.4	Is a guarantee provided that spare parts will be available for a period of ten (10) years from the time that any of the proposed products are removed from active sale? This requirement shall exist for all hardware components, except if the hardware component is directly replaceable by a newer module without wiring or software modifications.	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, please identify the guarantee that can be provided:
<b>1.2</b>	<b>Motor Control Centre Lifecycle Guarantee</b>	
1.2.1	Is a guarantee provided that the motor control centers will be operable, maintainable and fully supported by the manufacturer for at least twenty-five (25) years from the date of delivery to the City?	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, please identify the guarantee that can be provided:
1.2.2	Is a guarantee provided that spare parts and component repair services will be available for a period of ten (10) years from the time that any of the proposed products are removed from active sale? This requirement shall exist for all hardware components, except if the hardware component is directly replaceable by a newer module without wiring or software modifications.	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, please identify the guarantee that can be provided:
<b>2.0</b>	<b>Programmable Controller</b>	
<b>2.1</b>	<b>General</b>	
2.1.1	Manufacturer Name	
2.1.2	Years of experience in the design and manufacture of programmable control systems	years

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<b>2.2</b>	<b>Installed Base</b>	
2.2.1	Describe existing installed base within Manitoba	
2.2.2	Describe existing installed base in North America	
2.2.3	Describe existing installed base globally.	
<b>2.3</b>	<b>3rd Party Components</b>	
2.3.1	Identify all third party components proposed. Any 3 <sup>rd</sup> party components proposed should be minor and in accordance with E2.1.1.	Manufacturer / Model / Description
<b>2.4</b>	<b>Processors</b>	
2.4.1	Number of different processors proposed as part of the proposal. Different models within the same series count as different processors.	
2.4.2	Firmware updates may be performed via:	<input type="checkbox"/> Remotely via Ethernet. <input type="checkbox"/> Locally via removable flash memory card. <input type="checkbox"/> Locally via USB <input type="checkbox"/> Other: _____
<b>2.5</b>	<b>Power Supply Modules</b>	
2.5.1	Number of different power supply models proposed as part of the proposal.	
2.5.2	While 24VDC power supplies are specified, are power supply modules with 120 VAC input power available for all proposed systems.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially If partially, please clarify: _____

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2.5.3	Is the capability to provide hot-swappable redundant power supply modules for each rack / chassis provided?	<input type="checkbox"/> Yes, for the Programmable Controller System 1 architecture. <input type="checkbox"/> Yes, for the Programmable Controller System 2 architecture. <input type="checkbox"/> Yes, for the Programmable Controller System 3 architecture. <input type="checkbox"/> Yes, for the remote I/O architecture proposed. <input type="checkbox"/> No.
<b>2.6</b>	<b>Remote I/O Communication</b>	
2.6.1	Remote I/O Communication Proposed	<input type="checkbox"/> Ethernet (Ethernet/IP) <input type="checkbox"/> Ethernet (Modbus TCP) <input type="checkbox"/> Ethernet (PROFINET) <input type="checkbox"/> Other:  Other Details: _____
2.6.2	For the Ethernet based Remote I/O protocols proposed, describe the type of Ethernet switches required.	<input type="checkbox"/> Any Ethernet switch produced by any vendor may be utilized. <input type="checkbox"/> Any vendor's Ethernet/IP compatible switch may be utilized. <input type="checkbox"/> A specialized switch from the control system manufacturer must be utilized. Describe below. <input type="checkbox"/> A specialized switch from the control system manufacturer is recommended. Describe below.  <input type="checkbox"/> Other: _____  If a specialized switch from the control system manufacturer is required/recommended, describe the specific functionality it has that other manufacturers do not have.  _____ _____ _____

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2.6.3	Does the proposed I/O system support redundant communication modules in each remote I/O rack, such that failure of a communication module will not inhibit remote I/O rack communications?	<input type="checkbox"/> Yes, separate redundant communication modules are included in the base proposal for all remote I/O associated with Programmable Controller System 1 and Programmable Controller System 2. <input type="checkbox"/> Separate redundant communication modules are available as an option. Describe configuration below. <input type="checkbox"/> Separate redundant communication modules are not supported.  <input type="checkbox"/> Other: _____ _____ _____ _____
<b>2.7</b>	<b>Instrument Integration</b>	
2.7.1	Describe the fieldbus protocol(s) proposed for integration of smart instruments.	<input type="checkbox"/> PROFIBUS DP/PA <input type="checkbox"/> Foundation Fieldbus <input type="checkbox"/> Other: _____
2.7.2	Describe the implementation method proposed for fieldbus communication.	<input type="checkbox"/> Via manufacturer in-rack module. <input type="checkbox"/> Via 3 <sup>rd</sup> party in-rack module. <input type="checkbox"/> Via external gateway.  Other details: _____
<b>2.8</b>	<b>I/O Modules</b>	
2.8.1	Names of different I/O series proposed as part of the proposal. (Fewer I/O series are desired)	1. 2. 3.
2.8.2	Describe the method proposed for HART Analog Input capability.  <i>If multiple I/O series are proposed, identify for each series.</i>	<input type="checkbox"/> Native in-rack modules <input type="checkbox"/> The HART I/O can be in the same rack as all other I/O <input type="checkbox"/> The HART I/O is in a separate rack. <input type="checkbox"/> 3 <sup>rd</sup> party in-rack modules. <input type="checkbox"/> External gateway modules. <input type="checkbox"/> Not provided.

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<p>2.8.3</p>	<p>Describe the method proposed for HART Analog Output capability.</p> <p><i>If multiple I/O series are proposed, identify for each series.</i></p>	<p><input type="checkbox"/> Native in-rack modules</p> <p><input type="checkbox"/> The HART I/O can be in the same rack as all other I/O</p> <p><input type="checkbox"/> The HART I/O is in a separate rack.</p> <p><input type="checkbox"/> 3<sup>rd</sup> party in-rack modules.</p> <p><input type="checkbox"/> External gateway modules.</p> <p><input type="checkbox"/> Not provided.</p>
<p>2.8.4</p>	<p>Discrete Input Module, 120 VAC</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Input Voltage Range: _____ to _____ VAC</p> <p>Input Frequency Range: _____ to _____ Hz</p> <p>Minimum On-State Voltage: _____ VAC</p> <p>Maximum Off-State Voltage: _____ VAC</p> <p>On-State Current: _____ mA</p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Input Voltage Range: _____ to _____ VAC</p> <p>Input Frequency Range: _____ to _____ Hz</p> <p>Minimum On-State Voltage: _____ VAC</p> <p>Maximum Off-State Voltage: _____ VAC</p> <p>On-State Current: _____ mA</p>
<p>2.8.5</p>	<p>Are 120VAC discrete input modules available, with each channel completely isolated?</p> <p><i>If multiple I/O series are proposed, identify for each series.</i></p>	<p><input type="checkbox"/> Yes</p> <p>Model Number: _____</p> <p><input type="checkbox"/> No</p>
<p>2.8.6</p>	<p>Discrete Input Module, 24 VDC</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p>
<p>2.8.7</p>	<p>Discrete Output Module, 24 VDC</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Current drive capability: _____ A</p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Current drive capability: _____ A</p>

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<p>2.8.8</p>	<p>Analog Input Module, 4-20 mA</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Galvanic Isolation b/w channels: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Hardware resolution: _____ bit</p> <p>Module error: _____ % of range</p> <p>Normal mode noise rejection: _____ dB @ 60 Hz</p> <p>Common mode noise rejection: _____ dB @ 60 Hz</p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Galvanic Isolation b/w channels: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Hardware resolution: _____ bit</p> <p>Module error: _____ % of range</p> <p>Normal mode noise rejection: _____ dB @ 60 Hz</p> <p>Common mode noise rejection: _____ dB @ 60 Hz</p>
<p>2.8.9</p>	<p>Analog Input Module, 4-20 mA, with HART</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Galvanic Isolation b/w channels: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Hardware resolution: _____ bit</p> <p>Module error: _____ % of range</p> <p>Input Impedance: _____ <math>\Omega</math></p> <p>Normal mode noise rejection: _____ dB @ 60 Hz</p> <p>Common mode noise rejection: _____ dB @ 60 Hz</p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Galvanic Isolation b/w channels: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Hardware resolution: _____ bit</p> <p>Module error: _____ % of range</p> <p>Input Impedance: _____ <math>\Omega</math></p> <p>Normal mode noise rejection: _____ dB @ 60 Hz</p> <p>Common mode noise rejection: _____ dB @ 60 Hz</p>

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<p>2.8.10</p>	<p>Analog Output Module, 4-20 mA</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Hardware resolution: _____ bit</p> <p>Maximum load impedance: _____ <math>\Omega</math></p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Hardware resolution: _____ bit</p> <p>Maximum load impedance: _____ <math>\Omega</math></p>
<p>2.8.11</p>	<p>Analog Output Module, 4-20 mA, with HART</p> <p><i>Note: The Optional checkbox is to be utilized if the indicated model is available, but not proposed for any of the Systems.</i></p>	<p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Hardware resolution: _____ bit</p> <p>Maximum load impedance: _____ <math>\Omega</math></p> <p>Model Number: _____</p> <p>Proposed for Systems: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Optional</p> <p>Number of channels per module: _____</p> <p>Hardware resolution: _____ bit</p> <p>Maximum load impedance: _____ <math>\Omega</math></p>
<p>2.8.12</p>	<p>Availability of Specialty Modules</p> <p><i>Note: No 3<sup>rd</sup> party modules are to be included in this section.</i></p>	<p>High-Speed Counter: <input type="checkbox"/></p> <p>Model Number: _____</p> <p>RTD Input: <input type="checkbox"/></p> <p>Model Number: _____</p> <p>Thermocouple Input: <input type="checkbox"/></p> <p>Model Number: _____</p> <p>Others:</p> <p>Description: _____</p> <p>Model Number: _____</p> <p>Description: _____</p> <p>Model Number: _____</p> <p>Description: _____</p> <p>Model Number: _____</p>



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<b>2.9</b>	<b>Hazardous Locations</b>	
2.9.1	Describe the proposed capability to install remote I/O nodes in hazardous locations.	<input type="checkbox"/> All the remote I/O proposed is rated for a Class I, Zone 2 location. <input type="checkbox"/> Optional remote I/O modules are available that are rated for a Class I, Zone 2 location. <input type="checkbox"/> The modules are functionally 100% equivalent to the proposed base remote I/O modules. <input type="checkbox"/> The modules are slightly different compared to the proposed base remote I/O modules. (Describe below) <input type="checkbox"/> Class I, Zone 2 modules are not available.  Other details: _____
<b>2.10</b>	<b>Communication</b>	
2.10.1	Describe the method proposed for Modbus TCP communication.	<input type="checkbox"/> Native via Ethernet Port on Controller / Processor. <input type="checkbox"/> Available via optional manufacturer in-rack module. <input type="checkbox"/> Available via 3 <sup>rd</sup> party in-rack module. <input type="checkbox"/> Requires external gateway.  Other details: _____
2.10.2	Describe the AS-Interface integration capabilities.	<input type="checkbox"/> Native in-rack module. <input type="checkbox"/> Available via 3 <sup>rd</sup> party in-rack module. <input type="checkbox"/> Requires external gateway.  Other details: _____
2.10.3	Communication, Ethernet (To Facility Process Network)	Communication speed: _____ Mbit Maximum number of connections: _____ <input type="checkbox"/> HTTP webpage, non-configurable <input type="checkbox"/> HTTP webpage, configurable <input type="checkbox"/> Access protection via IP access list Protocol compatibility: <input type="checkbox"/> Modbus/TCP <input type="checkbox"/> Ethernet/IP <input type="checkbox"/> PROFINET <input type="checkbox"/> Other: _____

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2.11	<b>Fieldbus Capabilities – High-End PLC/PAC (Systems 1 &amp; 2)</b>	
2.11.1	Ethernet/IP Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package
2.11.2	Modbus TCP Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package
2.11.3	PROFIBUS DP Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package  Modules certified by: <input type="checkbox"/> PROFIBUS International <input type="checkbox"/> Not certified <input type="checkbox"/> Other: _____

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2.11.4	PROFIBUS PA Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package  Modules certified by: <input type="checkbox"/> PROFIBUS International <input type="checkbox"/> Not certified <input type="checkbox"/> Other: _____
2.11.5	Foundation Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package  Modules certified by: <input type="checkbox"/> Fieldbus Foundation <input type="checkbox"/> Not certified <input type="checkbox"/> Other: _____

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2.11.6	AS-i Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package  Modules certified by: <input type="checkbox"/> AS-International <input type="checkbox"/> Not certified <input type="checkbox"/> Other: _____
2.11.7	HART Support	<input type="checkbox"/> Native HART modules available (offered by manufacturer) <input type="checkbox"/> Native HART modules available (offered by 3 <sup>rd</sup> party) <input type="checkbox"/> Requires external modules. <input type="checkbox"/> Manufacturer <input type="checkbox"/> 3 <sup>rd</sup> party  Fieldbus configuration implemented with: <input type="checkbox"/> Integral to programmable controller programming software <input type="checkbox"/> Additional software package
<b>2.12</b>	<b>Miscellaneous</b>	
2.12.1	Are all timestamps for point state/value changes generated at the controller and passed to the HMI and Historian?	<input type="checkbox"/> Yes <input type="checkbox"/> No Additional Information: _____
2.12.2	Is a comprehensive, integrated data point quality system provided, that propagates from the input module through to the HMI?	<input type="checkbox"/> Yes, it is fully integrated and automatic, and has all the desired specified features. <input type="checkbox"/> Partially compliant with desired features. <input type="checkbox"/> No Additional Information: _____

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<b>2.13</b>	<b>Environmental</b>	
2.13.1	Indicate the operating range for the programmable controller proposed:	<p><b>Programmable Controller System 1 / 2</b>  Temperature range, operating: _____ to _____ °C  Relative humidity, operating: _____ to _____ %  Vibration limit, operating: _____ g  Shock limit, operating: _____ g</p> <p><b>Programmable Controller System 3</b>  Temperature range, operating: _____ to _____ °C  Relative humidity, operating: _____ to _____ %  Vibration limit, operating: _____ g  Shock limit, operating: _____ g</p>
2.13.2	Is a hardened version of the proposed remote I/O available with conformal coating?	<input type="checkbox"/> Yes Model Series: _____ <input type="checkbox"/> No
<b>2.14</b>	<b>Programmable Controller System 1</b>	
2.14.1	Provide a system architecture diagram of the proposed solution.	<input type="checkbox"/> Included in proposal.
2.14.2	Complete model number of the programmable controller/processor proposed.	
2.14.3	Controller / Processor Memory	Total memory: _____ MB User (program) memory: _____ MB Tag and I/O memory: _____ MB Other: _____ MB  % Memory Utilization for Given Application: _____ % % Expansion Capability for Given Application: _____ %
2.14.4	Expected Controller / Processor Scan Time	With specified application: _____ ms With 100% expansion in place: _____ ms

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2.14.5	Controller / Processor built-in communications ports	<input type="checkbox"/> USB, qty: _____ <input type="checkbox"/> RS-232, qty: _____ <input type="checkbox"/> RS-485 (Modbus RTU), qty: _____ <input type="checkbox"/> RS-485 (PROFIBUS DP), qty: _____ <input type="checkbox"/> Ethernet (Modbus TCP), qty: _____ <input type="checkbox"/> Ethernet (Ethernet/IP), qty: _____ <input type="checkbox"/> Ethernet (PROFINET), qty: _____ <input type="checkbox"/> PROFIBUS DP/PA, qty: _____ <input type="checkbox"/> Other: _____, qty: _____
2.14.6	Controller / Processor built-in storage ports	<input type="checkbox"/> Secure Digital (SD), qty: _____ <input type="checkbox"/> Compact Flash, qty: _____ <input type="checkbox"/> Other: _____, qty: _____
2.14.7	Remote I/O Capabilities	Maximum remote discrete I/O: _____ Maximum remote analog I/O: _____ Total maximum remote I/O: _____
2.14.8	Identify the proposed redundancy solution between the redundant controllers and the remote I/O modules.	<input type="checkbox"/> Two independent Ethernet communication channels are provided between all devices, with separate Ethernet switches. <input type="checkbox"/> Two independent communication modules are provided in each remote I/O rack. <input type="checkbox"/> A single communication module with two ports is provided in each remote I/O rack. <input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for all devices. <input type="checkbox"/> The remote I/O communication modules have integrated switches compatible with a fault tolerant ring. <input type="checkbox"/> A dedicated switch per remote I/O node is utilized to provide fault tolerance. <input type="checkbox"/> Other: _____ <input type="checkbox"/> Communication redundancy is not provided. (Not acceptable)
2.14.9	Identify the proposed redundancy solution between the redundant controllers and the VFDs.	<input type="checkbox"/> Two independent Ethernet communication channels are provided to all VFDs, with separate Ethernet switches. VFDs have dual Ethernet ports. <input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for all VFDs. VFDs have dual Ethernet ports. <input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for the Ethernet network, but a single Ethernet line is provided to each VFD via switches on the ring. <input type="checkbox"/> A dedicated switch is provided per VFD. <input type="checkbox"/> Other: _____ <input type="checkbox"/> Communication redundancy is not provided. (Not acceptable)

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2.14.10	Identify the proposed Modbus TCP capabilities.	<input type="checkbox"/> Modbus TCP capability is natively provided by the redundant processors. <input type="checkbox"/> Modbus TCP capability is provided by redundant in-rack communication modules. <input type="checkbox"/> Modbus TCP capability is provided by an external gateway. <input type="checkbox"/> Other: _____
<b>2.15</b>	<b>Programmable Controller System 2</b>	
2.15.1	Provide a system architecture diagram of the proposed solution.	<input type="checkbox"/> Included in proposal.
2.15.2	Complete model number of controller / processor proposed.	
2.15.3	Controller / Processor Memory	Total memory: _____ MB User (program) memory: _____ MB Tag and I/O memory: _____ MB Other: _____ MB  % Memory Utilization for Given Application: _____ % % Expansion Capability for Given Application: _____ %
2.15.4	Expected Controller / Processor Scan Time	With specified application: _____ ms With 100% expansion in place: _____ ms
2.15.5	Controller / processor built-in communications ports	<input type="checkbox"/> USB, qty: _____ <input type="checkbox"/> RS-232, qty: _____ <input type="checkbox"/> RS-485 (Modbus RTU), qty: _____ <input type="checkbox"/> RS-485 (PROFIBUS DP), qty: _____ <input type="checkbox"/> Ethernet (Modbus TCP), qty: _____ <input type="checkbox"/> Ethernet (Ethernet/IP), qty: _____ <input type="checkbox"/> Ethernet (PROFINET), qty: _____ <input type="checkbox"/> PROFIBUS DP/PA, qty: _____ <input type="checkbox"/> Other: _____, qty: _____
2.15.6	Controller / processor built-in storage ports	<input type="checkbox"/> Secure Digital (SD), qty: _____ <input type="checkbox"/> Compact Flash, qty: _____ <input type="checkbox"/> Other: _____, qty: _____

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<p>2.15.7</p>	<p>Identify the proposed redundancy solution between the redundant controllers and the Remote I/O modules.</p>	<p><input type="checkbox"/> Two independent Ethernet communication channels are provided between all devices, with separate Ethernet switches.</p> <p><input type="checkbox"/> Two independent communication modules are provided in each remote I/O rack.</p> <p><input type="checkbox"/> A single communication module with two ports is provided in each remote I/O rack.</p> <p><input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for all devices.</p> <p><input type="checkbox"/> The remote I/O communication modules have integrated switches compatible with a fault tolerant ring.</p> <p><input type="checkbox"/> A dedicated switch per remote I/O node is utilized to provide fault tolerance.</p> <p><input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Communication redundancy is not provided. (Not acceptable)</p>
<p>2.15.8</p>	<p>Identify the proposed redundancy solution between the redundant controllers and the VFDs.</p>	<p><input type="checkbox"/> Two independent Ethernet communication channels are provided to all VFDs, with separate Ethernet switches. VFDs have dual Ethernet ports.</p> <p><input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for all VFDs. VFDs have dual Ethernet ports.</p> <p><input type="checkbox"/> An Ethernet ring is utilized to provide fault tolerance for the Ethernet network, but a single Ethernet line is provided to each VFD via switches on the ring.</p> <p><input type="checkbox"/> A dedicated switch is provided per VFD.</p> <p><input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Communication redundancy is not provided. (Not acceptable)</p>
<p>2.15.9</p>	<p>Identify the proposed redundancy of the proposed fieldbus.</p>	<p><input type="checkbox"/> Two redundant independent fieldbus networks are provided, with a maximum of ten devices (one branch) unavailable with a single cable / module failure.</p> <p><input type="checkbox"/> Multiple fieldbus branches are provided, such that a maximum of ten devices (one branch) is unavailable with a single cable / module failure.</p> <p><input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Fieldbus redundancy is not provided.</p>



**FORM P (R1): PROPOSAL INFORMATION**

<b>2.16</b>	<b>Programmable Controller System 3</b>	
2.16.1	Provide a system architecture diagram of the proposed solution.	<input type="checkbox"/> Included in proposal.
2.16.2	Complete model number of controller / processor proposed.	
2.16.3	Controller / Processor Memory	<p>Total memory: _____ MB</p> <p>User (program) memory: _____ MB</p> <p>Tag and I/O memory: _____ MB</p> <p>Other: _____ MB</p> <p>% Memory Utilization for Given Application: _____ %</p> <p>% Expansion Capability for Given Application: _____ %</p>
2.16.4	Expected controller / processor scan time	<p>With specified application: _____ ms</p> <p>With 100% expansion in place: _____ ms</p>
2.16.5	Controller / processor built-in communications ports:	<p><input type="checkbox"/> USB, qty: _____</p> <p><input type="checkbox"/> RS-232, qty: _____</p> <p><input type="checkbox"/> RS-485 (Modbus RTU), qty: _____</p> <p><input type="checkbox"/> RS-485 (PROFIBUS DP), qty: _____</p> <p><input type="checkbox"/> Ethernet (Modbus TCP), qty: _____</p> <p><input type="checkbox"/> Ethernet (Ethernet/IP), qty: _____</p> <p><input type="checkbox"/> Ethernet (PROFINET), qty: _____</p> <p><input type="checkbox"/> PROFIBUS PA, qty: _____</p> <p><input type="checkbox"/> Other: _____, qty: _____</p>
2.16.6	Controller / processor built-in storage ports:	<p><input type="checkbox"/> Secure Digital (SD), qty: _____</p> <p><input type="checkbox"/> Compact Flash, qty: _____</p> <p><input type="checkbox"/> Other: _____</p>
2.16.7	Is power supply redundancy available for the proposed Programmable Controller System 3?	<p><input type="checkbox"/> Yes, dual power supplies are included.</p> <p><input type="checkbox"/> Yes, dual power inputs are included to a single power supply.</p> <p><input type="checkbox"/> Yes, dual power supplies are available as an option.</p> <p><input type="checkbox"/> Yes, dual power inputs are available as an option.</p> <p><input type="checkbox"/> No, not available.</p> <p><input type="checkbox"/> Other: _____</p>

**FORM P (R1): PROPOSAL INFORMATION**

2.16.8	Identify the proposed redundancy for the Ethernet process network connection (to HMI system).	<input type="checkbox"/> Two independent Ethernet communication ports are available for connection to two independent redundant Ethernet networks. <input type="checkbox"/> A dedicated switch with dual homing capabilities is provided. <input type="checkbox"/> Other: _____ <input type="checkbox"/> Communication redundancy is not provided.  Are the two Ethernet ports on: <input type="checkbox"/> The processor <input type="checkbox"/> The processor and a communication module <input type="checkbox"/> Two communication modules <input type="checkbox"/> N/A
2.16.9	Ethernet/IP Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported
2.16.10	Modbus TCP Fieldbus Support	<input type="checkbox"/> Native via process Ethernet port (can be utilized as I/O) <input type="checkbox"/> Native via process Ethernet port <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported
2.16.11	PROFIBUS DP Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported

**FORM P (R1): PROPOSAL INFORMATION**

2.16.12	Foundation Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported
2.16.13	AS-i Fieldbus Support	<input type="checkbox"/> Native <input type="checkbox"/> With integrated in-chassis gateway offered by manufacturer. <input type="checkbox"/> With external gateway offered by manufacturer. <input type="checkbox"/> With integrated in-chassis gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> With external gateway offered by 3 <sup>rd</sup> party. <input type="checkbox"/> Not supported
2.16.14	HART Support	<input type="checkbox"/> Native HART modules available (offered by manufacturer) <input type="checkbox"/> Native HART modules available (offered by 3 <sup>rd</sup> party) <input type="checkbox"/> Requires external modules.
<b>2.17</b>	<b>Infi90 Termination Unit Cables</b>	
2.17.1	Indicate pre-manufactured cables with connectors that are proposed.	<input type="checkbox"/> Infi90 NRAI01 (AI) <input type="checkbox"/> Infi90 NRAO01 (AO) <input type="checkbox"/> Infi90 NRDI01 (DI) <input type="checkbox"/> Infi90 NRDO02 (DO) <input type="checkbox"/> Infi90 NTAI05 (AI) <input type="checkbox"/> Infi90 NTDI01 (DI) <input type="checkbox"/> Infi90 NTDI01 (AO) <input type="checkbox"/> Infi90 NTDO01 (DO) <input type="checkbox"/> Infi90 NTDO02 (DO)
2.17.2	Indicate the cable length that the pricing in Form B is based upon:	_____ m Note: 5m specified
2.17.3	Indicate the additional cable lengths available:	<input type="checkbox"/> Can be customized at the time of order <input type="checkbox"/> Fixed lengths as indicated below _____ m _____ m _____ m _____ m

**FORM P (R1): PROPOSAL INFORMATION**

<b>2.18</b>	<b>Programmable Controller Programming Software</b>	
2.18.1	Indicate the name and version number of the proposed programming software components.	<hr/> <hr/> <hr/> <hr/>
2.18.2	Can user defined function blocks be created?	<input type="checkbox"/> Yes <input type="checkbox"/> No Additional Details: _____
2.18.3	Are all function blocks and pre-engineered programs/libraries fully modifiable by the City? Base function blocks such as ADD, or XOR functions are excluded.	<input type="checkbox"/> Yes <input type="checkbox"/> No Additional Details: _____
2.18.4	Is a library of pre-built fuzzy logic control function blocks provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.18.5	Are pre-built function blocks for the following included?	<input type="checkbox"/> Smith predictor <input type="checkbox"/> Lead / Lag feed forward control.
2.18.6	Is a PID control loop auto-tune function included?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.18.7	How is auto-tuning performed?	<input type="checkbox"/> Integrated into Programming Software <input type="checkbox"/> Separate software tool provided <input type="checkbox"/> Not supported
2.18.8	The programming software environment includes the following integrated version control features.	<input type="checkbox"/> Integrated features to allow programmers to visually see software logic changes made, compare versions, and restore specific modifications, without moving system files. <input type="checkbox"/> No version control system is included. <input type="checkbox"/> The following version control features are available: Details: _____
2.18.9	Is the capability provided to automatically log all modifications, downloads, system changes, etc to the controller into a secure audit log, which shall include the date, time, user, and a detailed description of the operation performed.	<input type="checkbox"/> Yes <input type="checkbox"/> No Additional details:

**FORM P (R1): PROPOSAL INFORMATION**

2.18.10	Describe the organization of each facility programmable controller logic files.	<input type="checkbox"/> A single program file is present for the entire facility. The controllers are presented in a hierarchical listing within the software. <input type="checkbox"/> Each programmable controller has a dedicated program file. Other Details:
2.18.11	If a change is made to a pump control function block, how is this change propagated to all other pumps based upon this function block?	<input type="checkbox"/> The change is automatically propagated to all other pumps based upon the modified function blocks. Only a download to the controller is required. <input type="checkbox"/> Each pump function block instance must be updated via a simple one/two click operation. <input type="checkbox"/> Each pump function block instance must be manually replaced. Other Details:
2.18.12	Is controller emulation provided via a Windows application?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.18.13	Is it possible to emulate multiple controllers on a single PC?	<input type="checkbox"/> Yes Up to _____ controllers. <input type="checkbox"/> No Additional Details: _____
2.18.14	Can the controller emulator execute 100% of the hardware controller functionality?	<input type="checkbox"/> Yes <input type="checkbox"/> No The following functions are not supported in the emulator:
2.18.15	Indicate the controller emulator capabilities for emulation.	<input type="checkbox"/> Network connected motor starters. <input type="checkbox"/> Network connected variable frequency drives. <input type="checkbox"/> Fieldbus connected instruments <input type="checkbox"/> HART connected instruments <input type="checkbox"/> AS-i connected instruments Additional details:

**FORM P (R1): PROPOSAL INFORMATION**

3.0	Process Simulator	
3.1	General	
3.1.1	Information regarding proposed process simulator	<input type="checkbox"/> HMI Development / Runtime Package <input type="checkbox"/> Same as main HMI package <input type="checkbox"/> Different HMI package <input type="checkbox"/> Specific simulator software  Manufacturer: _____ Product Name: _____ Version: _____
3.1.2	Describe the scenario capabilities of the software.	<input type="checkbox"/> Not Provided <input type="checkbox"/> Provided  Describe:
3.1.3	Describe the scope of simulation that can be performed at a given time.	<input type="checkbox"/> Single Controller <input type="checkbox"/> Multiple Controllers: Qty: _____ <input type="checkbox"/> Entire Facility  Additional Details:
3.1.4	Describe the proposed included licencing for the process simulator and its ability to meet the City requirements. Identify any restrictions.	

**FORM P (R1): PROPOSAL INFORMATION**

<b>4.0</b>	<b>HMI System</b>	
<b>4.1</b>	<b>General</b>	
4.1.1	Manufacturer Name	
4.1.2	Years of experience in the design, manufacture of HMI systems	years
4.1.3	Provide a system architecture diagram of the proposed solution.	<input type="checkbox"/> Included in proposal.
4.1.4	Name and version of proposed HMI software	
4.1.5	Name and version of proposed HMI data server software	
4.1.6	Name and version of proposed terminal server software.	
4.1.7	Provide a system architecture diagram of the proposed solution.	<input type="checkbox"/> Included in proposal.
4.1.8	Do any proposed software runtime licences expire? (See E2.3)	<input type="checkbox"/> Yes (explain below) <input type="checkbox"/> No
4.1.9	Proposed HMI client (Operator Workstation) architecture	<input type="checkbox"/> Thin clients utilizing terminal services (no HMI client software on the thin clients). <input type="checkbox"/> Thick clients utilizing run-time HMI client software on the Operator Workstations computers.
4.1.10	Supported HMI server virtualization architectures	<input type="checkbox"/> All HMI Server components support running in a virtualized server system. The configuration has been fully tested. <input type="checkbox"/> Some HMI Server components support running in a virtualized server system. Details follow. <input type="checkbox"/> Running the HMI server system in a virtualized environment is not supported.  Recommended server virtualization system: _____  Additional details: _____

**FORM P (R1): PROPOSAL INFORMATION**

4.1.11	HMI Application Authoring and Deployment Features	<input type="checkbox"/> Changes to HMI application on primary server are automatically replicated to the secondary server. <input type="checkbox"/> Included HMI application backup and restore utility. <input type="checkbox"/> HMI tag import/export utility to/from CSV file or Excel spreadsheet. <input type="checkbox"/> HMI tag simulator. <input type="checkbox"/> HMI tag cross referencing system.
4.1.12	HMI Data Server / Data Access Protocol / Communication Capability	Protocol for Programmable Controller to HMI Communications _____  <input type="checkbox"/> Communication is "change-based" where variables are only communicated to the HMI system upon change. <input type="checkbox"/> For analog values, the deadband / exception threshold can be adjusted.  <input type="checkbox"/> Communication is polling based. <input type="checkbox"/> Polling rates can be varied by controller or by any subset group of tags <input type="checkbox"/> Polling rates can be varied by controller only. <input type="checkbox"/> Only a single polling rate may be configured.
4.1.13	HMI Data Server / Data Access Protocol – Automatic Tag Activation Does the system support automatic activation and deactivation of data retrieval from controllers based upon active use? For example, does it support retrieving a set of tags only when those values are currently being displayed on the HMI?	<input type="checkbox"/> Yes <input type="checkbox"/> Partial <input type="checkbox"/> No  Additional details: _____
4.1.14	OPC Client Support Provided	<input type="checkbox"/> OPC DA Version: _____ <input type="checkbox"/> OPC XML DA Version: _____ <input type="checkbox"/> OPC HDA (Historical Data Access) Version: _____ <input type="checkbox"/> OPC A&E (Alarms and Events) Version: _____ <input type="checkbox"/> OPC UA (Universal Architecture) Version: _____



**FORM P (R1): PROPOSAL INFORMATION**

4.1.15	OPC Server Support Provided	<input type="checkbox"/> OPC DA Version: _____ <input type="checkbox"/> OPC XML DA Version: _____ <input type="checkbox"/> OPC HDA (Historical Data Access) Version: _____ <input type="checkbox"/> OPC A&E (Alarms and Events) Version: _____ <input type="checkbox"/> OPC UA (Universal Architecture) Version: _____
4.1.16	Graphic Display Feature Support	<input type="checkbox"/> Customizable tag update rate. <input type="checkbox"/> Supports the use of parameters or tag placeholders in place of tag names. <input type="checkbox"/> User resizing and rescaling of popup graphic displays in the runtime client. <input type="checkbox"/> Graphic display rescaling to accommodate various client screen resolutions. <input type="checkbox"/> May insert ActiveX and OLE objects onto displays. <input type="checkbox"/> Direct referencing of programmable controller tags for display of tag value and object animation (no requirement for creating and using HMI tags).
4.1.17	Scripting Feature Support	<input type="checkbox"/> User-defined scripting using industry standard programming language such as JavaScript or BASIC. <input type="checkbox"/> Scripts are always executed on the HMI server <input type="checkbox"/> Scripts are always executed on the HMI client <input type="checkbox"/> Scripts may be configured to execute on either the HMI server or the HMI client.  Scripts may be run: <ul style="list-style-type: none"> <li><input type="checkbox"/> Upon HMI application start-up.</li> <li><input type="checkbox"/> Upon HMI application shutdown.</li> <li><input type="checkbox"/> Upon user login to HMI.</li> <li><input type="checkbox"/> Upon user logout from HMI.</li> <li><input type="checkbox"/> Upon opening of a graphic display</li> <li><input type="checkbox"/> Upon closing of a graphic display</li> <li><input type="checkbox"/> At specific time of day.</li> <li><input type="checkbox"/> Upon change of tag value.</li> <li><input type="checkbox"/> On a touch action, such as pressing a button or clicking a display object.</li> <li><input type="checkbox"/> Upon acknowledgment of alarm.</li> <li><input type="checkbox"/> Upon switchover from primary to secondary HMI server, and vice versa.</li> <li><input type="checkbox"/> Upon switchover from primary to secondary data server, and vice versa.</li> </ul>

**FORM P (R1): PROPOSAL INFORMATION**

4.1.18	Trending Feature Support	<input type="checkbox"/> Integration of real-time data and historical data from the local facility historian server or central historian server.
4.1.19	Alarming Feature Support	<input type="checkbox"/> User-definable alarm priorities. Quantity of alarm priority levels available: _____ <input type="checkbox"/> Configurable analog alarms: LL, L, H, HH <input type="checkbox"/> Bad quality alarms – Native without creating a tag  Available alarm notification methods: <input type="checkbox"/> Open an alarm graphic display <input type="checkbox"/> Set off an audible signal <input type="checkbox"/> Send a message to a printer <input type="checkbox"/> Send a message to a data source
4.1.20	Audit Trail Capabilities	<input type="checkbox"/> Operator login and logout. <input type="checkbox"/> Operator alarm acknowledgement. <input type="checkbox"/> Operator commands. <input type="checkbox"/> Operator messages. <input type="checkbox"/> System messages. <input type="checkbox"/> Logging to facility historian.
4.1.21	Object Oriented Capabilities. Describe the capabilities of the HMI system to create and implement custom object data and graphic structures.	<p><b>Data</b></p> <input type="checkbox"/> Custom data object classes may be created and stored in a central repository. <input type="checkbox"/> Centralized data object classes may be utilized to create specific data object instances <input type="checkbox"/> Modification of the central object data class will automatically be propagated to all object instances that were created.  <p><b>Graphics</b></p> <input type="checkbox"/> Custom graphic object classes may be created and stored in a central repository. <input type="checkbox"/> Centralized graphic object classes may be utilized to create specific graphic object instances <input type="checkbox"/> Modification of the central graphic object class will automatically be propagated to all graphic object instances that were created.  <p><b>Integration</b></p> <input type="checkbox"/> The data objects and graphic objects are inherently linked.
4.1.22	HMI Application Testing Capabilities	<input type="checkbox"/> Runtime testing of HMI application on development workstation without use of runtime client software / license. <input type="checkbox"/> Ability to recall and trend data for a specific date and time.

**FORM P (R1): PROPOSAL INFORMATION**

4.1.23	Proposed HMI Server Licences	<p>Reference specifications for minimum requirements.</p> <p>NEWPCC:          _____ points          _____ displays</p> <p>SEWPCC:          _____ points          _____ displays</p> <p>WEWPCC:          _____ points          _____ displays</p> <p>Point-based licencing is based upon:  <input type="checkbox"/> Tags from external sources such as controllers only.  <input type="checkbox"/> All external tags, including alarm tags  <input type="checkbox"/> Other</p> <p>Other Details:</p>
4.1.24	Expected system performance. Given number expected to be within 25% of final system performance.	<p>Time from clicking on a new mimic display until the display is opened and all data points are fully populated.          _____ ms</p> <p>Data update time from I/O to display.          _____ ms</p> <p>Time from clicking on a faceplate popup icon until the faceplate is open and all data populated.          _____ ms</p>
<b>4.2</b>	<b>Portable HMI Client Software</b>	
4.2.1	Name and version of proposed HMI client software	
4.2.2	Supported Portable HMI Client Implementations	<p><input type="checkbox"/> Terminal services based portable HMI client.  <input type="checkbox"/> Terminal services based client is fully compatible with the same HMI application used for the desktop HMI.</p> <p><input type="checkbox"/> Web based portable HMI client.  <input type="checkbox"/> Web based client is fully compatible with same HMI application used for the desktop HMI.</p>

**FORM P (R1): PROPOSAL INFORMATION**

4.2.3	Can each Portable HMI Client connect to all three facilities?	<input type="checkbox"/> Yes. <input type="checkbox"/> No, each Portable HMI Client must be tied to specific facility. <input type="checkbox"/> Other:  Additional Details:
4.2.4	Describe licensing system.	<input type="checkbox"/> Server based licence pool. Only active portable clients utilize a licence. <input type="checkbox"/> Licences are tied to a specific portable device. <input type="checkbox"/> Other:  Additional Details:
4.2.5	Describe alarm notification capability.	
<b>4.3</b>	<b>HMI Web Server System</b>	
4.3.1	Name and version of proposed web server software	
4.3.2	Proposed architecture	<input type="checkbox"/> One web server per facility. <input type="checkbox"/> Centralized web server. <input type="checkbox"/> Other:  Additional Details:
4.3.3	Describe proposed client licenses:	Licences floating for all three facilities: _____ NEWPCC Web Clients: _____ SEWPCC Web Clients: _____ WEWPCC Web Clients: _____  Additional Details:
4.3.4	Describe screen resolution scaling capabilities	

**FORM P (R1): PROPOSAL INFORMATION**

4.3.5	Supported web browsers	<input type="checkbox"/> Internet Explorer <input type="checkbox"/> Google Chrome <input type="checkbox"/> Mobile Browsers <input type="checkbox"/> Apple Safari <input type="checkbox"/> Google Chrome  Additional Details:
4.3.6	Describe automatic timeout and logoff of idle client devices to allow the licence to be returned to the pool.	<input type="checkbox"/> Default timeout and logoff capability is provided. Time: _____ <input type="checkbox"/> Configurable timeout and logoff capability is provided.  Additional Details:
<b>4.4</b>	<b>Touchscreen HMI - Hardware</b>	
4.4.1	Model Number of 305 mm (12") colour touch display, without membrane keys, Ethernet communications, NEMA Type 4X	
4.4.2	Display Size and Resolution Availability (round to nearest listed sizes as required)	<input type="checkbox"/> 152 mm (6") Resolution: ____ x ____ pixels <input type="checkbox"/> 203 mm (8") Resolution: ____ x ____ pixels <input type="checkbox"/> 254 mm (10") Resolution: ____ x ____ pixels <input type="checkbox"/> 305 mm (12") Resolution: ____ x ____ pixels <input type="checkbox"/> 381 mm (15") Resolution: ____ x ____ pixels
4.4.3	Display Colours	_____ colours
4.4.4	Available Communication Adapters	<input type="checkbox"/> Ethernet (Modbus TCP) <input type="checkbox"/> Ethernet (Ethernet/IP) <input type="checkbox"/> Ethernet (PROFINET) <input type="checkbox"/> Ethernet (Other) <input type="checkbox"/> PROFIBUS DP <input type="checkbox"/> USB (for local configuration only)
4.4.5	User (application) Memory	_____ kB or _____ MB
4.4.6	External Memory (for storage of historical data)	<input type="checkbox"/> Secure Digital (SD) <input type="checkbox"/> Compact Flash <input type="checkbox"/> USB (solid state flash storage drive)
4.4.7	Enclosure Type Proposed (Front Panel of Installed Unit)	<input type="checkbox"/> NEMA Type 12 <input type="checkbox"/> NEMA Type 4 <input type="checkbox"/> NEMA Type 4X <input type="checkbox"/> Other: _____

**FORM P (R1): PROPOSAL INFORMATION**

4.4.8	Operating Temperature Range	_____ to _____ °C
4.4.9	Power Supply Nominal Input Voltage Availability	<input type="checkbox"/> 24 VDC <input type="checkbox"/> 120 VAC, 60 Hz
4.4.10	Miscellaneous Features	<input type="checkbox"/> Dimmable Backlight <input type="checkbox"/> Touch calibration <input type="checkbox"/> Conformal coating <input type="checkbox"/> Base feature <input type="checkbox"/> Optional feature <input type="checkbox"/> Other:
<b>4.5</b>	<b>Touchscreen HMI - Runtime Software and Programming Software Capabilities</b>	
4.5.1	Configuration Software	<input type="checkbox"/> Same software as proposed HMI system <input type="checkbox"/> Dedicated touchscreen HMI Software
4.5.2	Available Document and Media Viewers	<input type="checkbox"/> Plain text document viewer <input type="checkbox"/> PDF document viewer <input type="checkbox"/> Word document viewer <input type="checkbox"/> Excel document viewer
4.5.3	Alarming and Event Capabilities	<input type="checkbox"/> Active and historical alarm summary viewer <input type="checkbox"/> Searchable by tag or description. <input type="checkbox"/> Customizable alarm state colours <input type="checkbox"/> Alarm groups, maximum quantity: _____ <input type="checkbox"/> Event viewer
4.5.4	Application Conversion Capabilities	<input type="checkbox"/> Fully automatic application conversion from desktop HMI application (per E23) to touchscreen HMI application. <input type="checkbox"/> Software is capable of performing majority of conversion from desktop HMI application (per E23) to touchscreen HMI application but requires some manual effort.
4.5.5	Scripting Capabilities	<input type="checkbox"/> Customizable scripting using industry standard language such as JavaScript or BASIC

**FORM P (R1): PROPOSAL INFORMATION**

4.5.6	Data Logging and Trending Capabilities	<input type="checkbox"/> Periodic data logging with custom sampling interval <input type="checkbox"/> Data logging on threshold change of value <input type="checkbox"/> Configurable trend display object: <input type="checkbox"/> Custom (fixed) horizontal and vertical axis scaling <input type="checkbox"/> Automatic horizontal and vertical axis scaling <input type="checkbox"/> Customizable pen colours <input type="checkbox"/> Customizable background colour <input type="checkbox"/> Customizable grid size and grid colour <input type="checkbox"/> Runtime pen / tagname selection. <input type="checkbox"/> Trend object zooming <input type="checkbox"/> View specific date/time in trend object
4.5.7	Simulation Capabilities	<input type="checkbox"/> Touchscreen HMI programming software includes ability to simulate the HMI on the development PC.
4.5.8	Describe any proposed licencing limitations (i.e. tag count limits)	
<b>5.0</b>	<b>Historian System</b>	
<b>5.1</b>	<b>General</b>	
5.1.1	Historian System Architecture	<input type="checkbox"/> Proposed system architecture diagram provided  <input type="checkbox"/> Buffers on data servers to buffer data in the event of historian failure. Expected maximum duration of historian outage before buffer overflows and data loss occurs: _____ days  <input type="checkbox"/> A local historian is provided at each facility. <input type="checkbox"/> A central historian is provided rather than a local historian at each facility (independent of any optional central archive historian).
5.1.2	Proposed Redundancy / Resiliency Capabilities	<input type="checkbox"/> Historian utilizes redundant data servers <input type="checkbox"/> Redundant historian servers proposed.  Other Details:
5.1.3	Describe how historical data is protected in the event of a historical data server failure or system upgrades. Describe any store and forward queues and expected duration prior to data loss.	

**FORM P (R1): PROPOSAL INFORMATION**

5.1.4	Historian Data Logging Capabilities	<input type="checkbox"/> Time-based <input type="checkbox"/> Event Based <input type="checkbox"/> Delta / Deadband based for analog values <input type="checkbox"/> Manual Entry <input type="checkbox"/> Import via Excel / CSV file <input type="checkbox"/> Manual Modification of Data Additional Details:
5.1.5	Supported Data Sources	<input type="checkbox"/> All proposed controllers <input type="checkbox"/> HMI events such as operator actions <input type="checkbox"/> OPC <input type="checkbox"/> Other vendor PLCs Others:
5.1.6	OPC Client Support Provided	<input type="checkbox"/> OPC DA Version: _____ <input type="checkbox"/> OPC XML DA Version: _____ <input type="checkbox"/> OPC HDA (Historical Data Access) Version: _____ <input type="checkbox"/> OPC A&E (Alarms and Events) Version: _____ <input type="checkbox"/> OPC UA (Universal Architecture) Version: _____
5.1.7	OPC Server Support Provided	<input type="checkbox"/> OPC DA Version: _____ <input type="checkbox"/> OPC XML DA Version: _____ <input type="checkbox"/> OPC HDA (Historical Data Access) Version: _____ <input type="checkbox"/> OPC A&E (Alarms and Events) Version: _____ <input type="checkbox"/> OPC UA (Universal Architecture) Version: _____



**FORM P (R1): PROPOSAL INFORMATION**

5.1.8	Calculation Capabilities	<input type="checkbox"/> Supports fully customizable calculations on any number of data points within the Historian package <input type="checkbox"/> Supports basic calculations such as sum, totalize, addition, subtraction, etc. <input type="checkbox"/> Calculations not supported Other Details:
5.1.9	Proposed Licences	Central Archive Server: _____ points NEWPCC _____ points SEWPCC: _____ points WEWPCC: _____ points Other Details:
5.1.10	Alarm and Event Logging	<input type="checkbox"/> Historian supports the collection and archiving of HMI alarm data, including alarm acknowledgments. <input type="checkbox"/> Alarm logging does not require any “per alarm” configuration. <input type="checkbox"/> Logging of alarms requires setting each individual alarm point to be logged. <input type="checkbox"/> Historian supports the collection and archiving of HMI event data, including user logins, logouts, and commands.
5.1.11	Alarm / Event Licensing	<input type="checkbox"/> Logging of alarms / events to the historian does not require points in the licence point count. <input type="checkbox"/> Logging of alarms / events requires licence point counts. Describe how specified licence requirements are met below:
5.1.12	Expected maximum continuous data storage rate (changes / second)	NEWPCC _____ points / second SEWPCC: _____ points / second WEWPCC: _____ points / second

**FORM P (R1): PROPOSAL INFORMATION**

5.1.13	Describe data archival and retrieval capabilities, once the data is no longer required in the primary data store.	
<b>5.2</b>	<b>Historian Client Software</b>	
5.2.1	Describe the proposed Historian client access licensing:	<p>NEWPCC:</p> <p><input type="checkbox"/> Unlimited users</p> <p><input type="checkbox"/> Floating pool users: _____</p> <p><input type="checkbox"/> Fixed named users: _____</p> <p>SEWPCC:</p> <p><input type="checkbox"/> Unlimited users</p> <p><input type="checkbox"/> Floating pool users: _____</p> <p><input type="checkbox"/> Fixed named users: _____</p> <p>WEWPCC:</p> <p><input type="checkbox"/> Unlimited users</p> <p><input type="checkbox"/> Floating pool users: _____</p> <p><input type="checkbox"/> Fixed named users: _____</p> <p>Other Details:</p>
5.2.2	Provided historical data access tools.	<p><input type="checkbox"/> Microsoft Excel add-in to allow query and analysis of data with Excel.</p> <p><input type="checkbox"/> Microsoft Word add-in to allow query historical data and integrate into a document.</p> <p><input type="checkbox"/> Stand-alone graphical trending tool (not integrated with Excel)</p> <p><input type="checkbox"/> Stand-alone reporting tool.</p> <p>Other Details:</p>
5.2.3	Describe any special data analysis tools provided.	

**FORM P (R1): PROPOSAL INFORMATION**

5.2.4	Historical data queries	<input type="checkbox"/> Intuitive interface requiring no SQL knowledge <input type="checkbox"/> SQL <input type="checkbox"/> Other Other Details:
<b>6.0</b>	<b>Low Voltage Intelligent Motor Control Centers</b>	
<b>6.1</b>	<b>MCC General</b>	
6.1.1	Manufacturer Name	
6.1.2	Years of experience in the design, manufacture of MCCs	years
6.1.3	Years of experience in the design, manufacture of intelligent MCCs	years
6.1.4	Model Series of proposed intelligent MCC	
<b>6.2</b>	<b>MCC Type, Size, and Rating Availability</b>	
6.2.1	Available Enclosure Types	<input type="checkbox"/> NEMA 1 <input type="checkbox"/> NEMA 1A <input type="checkbox"/> NEMA 2 <input type="checkbox"/> NEMA 3R <input type="checkbox"/> NEMA 12 <input type="checkbox"/> Other: _____
6.2.2	Available Structure Widths	<input type="checkbox"/> 508 mm (20") <input type="checkbox"/> 610 mm (24") <input type="checkbox"/> 762 mm (30") <input type="checkbox"/> 914 mm (36") <input type="checkbox"/> Other: _____
6.2.3	Available Structure Depths	<input type="checkbox"/> 381 mm (15") <input type="checkbox"/> 508 mm (20") <input type="checkbox"/> Other: _____
6.2.4	Available Back-to-Back Structure Depth	_____ mm _____ mm
6.2.5	Available Horizontal Bus Ratings	<input type="checkbox"/> 600 A <input type="checkbox"/> 800 A <input type="checkbox"/> 1200 A <input type="checkbox"/> 1600 A <input type="checkbox"/> 2000 A <input type="checkbox"/> Other: _____

**FORM P (R1): PROPOSAL INFORMATION**

6.2.6	Available Vertical Bus Ratings	<input type="checkbox"/> 300 A <input type="checkbox"/> 600 A <input type="checkbox"/> Other: _____
6.2.7	Available Bus Bracing (kA symmetric)	<input type="checkbox"/> 42 kA <input type="checkbox"/> 65 kA <input type="checkbox"/> 100 kA <input type="checkbox"/> Other: _____
<b>6.3</b>	<b>MCC Main Breaker</b>	
6.3.8	Available interrupting ratings for a 1200A main breaker.	_____ kA _____ kA _____ kA _____ kA
6.3.9	Indicate electronic trip capabilities.	<input type="checkbox"/> L (Long Time) Pickup adjustable from: _____ to _____  <input type="checkbox"/> S (Short Time) Pickup adjustable from: _____ to _____ Delay adjustable from: _____ to _____  <input type="checkbox"/> I (Instantaneous) Pickup adjustable from: _____ to _____ Delay adjustable from: _____ to _____  <input type="checkbox"/> G (Ground Fault) Pickup adjustable from: _____ to _____ Delay adjustable from: _____ to _____
<b>6.4</b>	<b>MCC Branch and Feeder Units</b>	
6.4.1	Standard Unit Heights – Moulded Case Circuit Breaker (for unit width of 508 mm (20"))	15 - 150A: _____ mm / alternately: _____ mm 175 - 250A: _____ mm / alternately: _____ mm 300 - 400A: _____ mm / alternately: _____ mm 450 - 600A: _____ mm / alternately: _____ mm
6.4.2	Available interrupting ratings with standard 15A moulded case breakers.	_____ kA _____ kA _____ kA _____ kA

**FORM P (R1): PROPOSAL INFORMATION**

6.4.3	Indicate optional electronic trip capabilities available.	15 - 150A: <input type="checkbox"/> L <input type="checkbox"/> S <input type="checkbox"/> I <input type="checkbox"/> G 175 - 250A: <input type="checkbox"/> L <input type="checkbox"/> S <input type="checkbox"/> I <input type="checkbox"/> G 300 - 400A: <input type="checkbox"/> L <input type="checkbox"/> S <input type="checkbox"/> I <input type="checkbox"/> G 450 - 600A: <input type="checkbox"/> L <input type="checkbox"/> S <input type="checkbox"/> I <input type="checkbox"/> G
<b>6.5</b>	<b>Size</b>	
6.5.1	Dimensions of proposed MCC System 1	Height: _____ mm Width: _____ mm Depth: _____ mm
6.5.2	Standard Unit Heights – FVNR Circuit Breaker Motor Starters with Intelligent Module (for unit width of 508 mm (20"))	NEMA Size 1 Starter: _____ mm NEMA Size 2 Starter: _____ mm NEMA Size 3 Starter: _____ mm NEMA Size 4 Starter: _____ mm
<b>6.6</b>	<b>MCC Network</b>	
6.6.1	Proposed Network Communications	<input type="checkbox"/> Ethernet IP <input type="checkbox"/> Ethernet - Modbus TCP <input type="checkbox"/> PROFINET <input type="checkbox"/> PROFINET to MCC, PROFIBUS DP within MCC <input type="checkbox"/> Other: _____
6.6.2	Confirm that multiple controllers can communicate with a single MCC. Write control for each starter would be dedicated to a single programmable controller.	<input type="checkbox"/> Yes, multiple programmable controllers may communicate with a single MCC. <input type="checkbox"/> No. Describe: _____

**FORM P (R1): PROPOSAL INFORMATION**

6.6.3	Indicate how a high level of availability is provided in the event of a fault.	<p>Between the Programmable Controllers and MCC</p> <p><input type="checkbox"/> Dual Ethernet networks including two switches are provided with complete redundancy.</p> <p><input type="checkbox"/> A fault tolerant Ethernet ring network is provided</p> <p><input type="checkbox"/> Other: _____</p> <p>Within the MCC to the individual devices (starters / VFDs)</p> <p><input type="checkbox"/> Dual Ethernet networks including two switches are provided with complete redundancy.</p> <p><input type="checkbox"/> Multiple switches are connected in a fault tolerant ring. All devices connect to a switch in a star fashion. The maximum number of devices per switch is : _____ (10 specified)</p> <p><input type="checkbox"/> All individual devices connect in a fault tolerant ring configuration.</p> <p><input type="checkbox"/> PROFIBUS PA/DP gateways are provided. The maximum number of devices per segment is: _____ (10 specified)</p> <p><input type="checkbox"/> Other: _____</p>
6.6.4	Network Cabling - Rating	<p><input type="checkbox"/> MCC network cabling is 600V rated.</p> <p><input type="checkbox"/> MCC network cabling is rated &lt; 600V but is approved for 600V MCC applications due to the following: Describe: _____</p> <p><input type="checkbox"/> MCC network cabling is rated &lt; 600V and is not approved for use in 600V MCCs.</p>
6.6.5	Network Cabling – Isolation Describe how the network cabling is isolated to prevent electric power transients and harmonics from being imposed on the network communications.	<p><input type="checkbox"/> Segregation (Describe below)</p> <p><input type="checkbox"/> Shielding (Describe below)</p> <p><input type="checkbox"/> Other (Describe below)</p> <p>Describe:</p>
6.6.6	Network Switch Power Supply	<p><input type="checkbox"/> Network switch power supply has dual 24 VDC power inputs, connected to independent power supplies.</p> <p><input type="checkbox"/> Network switch power supply has a single 24 VDC power input</p> <p>Additional details:</p>

**FORM P (R1): PROPOSAL INFORMATION**

<b>6.7</b>	<b>MCC Surge Protective Device</b>	
6.7.1	Rating Availability	<input type="checkbox"/> 60 kA per phase <input type="checkbox"/> 100 kA per phase <input type="checkbox"/> 200 kA per phase <input type="checkbox"/> 250 kA per phase <input type="checkbox"/> 300 kA per phase <input type="checkbox"/> Other: _____
6.7.2	Included Standard Features	<input type="checkbox"/> Status light for each phase – indicates whether each phase is operational / damaged. <input type="checkbox"/> Electrical Noise Filter: Noise Attenuation 10 kHz – 100 MHz : _____ dB <input type="checkbox"/> MOVs are thermally protected <input type="checkbox"/> Audible alarm <input type="checkbox"/> switchable on / off <input type="checkbox"/> Dry contact for monitoring <input type="checkbox"/> Surge counter with door mounted display
<b>6.8</b>	<b>MCC Power Meter</b>	
6.8.1	Metering Capabilities	<input type="checkbox"/> Line and/or phase voltages <input type="checkbox"/> Line currents <input type="checkbox"/> Average current <input type="checkbox"/> Current phase imbalance <input type="checkbox"/> Frequency <input type="checkbox"/> Power (real and reactive) <input type="checkbox"/> Power factor <input type="checkbox"/> Energy (real and reactive) <input type="checkbox"/> Harmonics – Voltage to _____ harmonic <input type="checkbox"/> Harmonics – Current to _____ harmonic <input type="checkbox"/> Other: _____
6.8.2	Accuracy	Volts: _____ % Amps: _____ % Power: _____ %
6.8.3	Network Connectivity	<input type="checkbox"/> Ethernet IP <input type="checkbox"/> Modbus TCP <input type="checkbox"/> Modbus TCP via Modbus RTU <input type="checkbox"/> PROFINET <input type="checkbox"/> PROFINET via PROFIBUS DP <input type="checkbox"/> Other: _____

**FORM P (R1): PROPOSAL INFORMATION**

<b>6.9</b>	<b>Intelligent Overloads / Motor Protection Relays</b>	
6.9.1	Power Supply Voltage Compatibility	<input type="checkbox"/> 24 VDC <input type="checkbox"/> 120 VAC
6.9.2	Complete model number of 120VAC powered module	
6.9.3	Metering Capabilities	<input type="checkbox"/> Line and/or phase voltages <input type="checkbox"/> Line currents <input type="checkbox"/> Ground current <input type="checkbox"/> Average current <input type="checkbox"/> Current phase imbalance <input type="checkbox"/> Frequency <input type="checkbox"/> Power (real and reactive) <input type="checkbox"/> Power factor <input type="checkbox"/> Energy (real and reactive) <input type="checkbox"/> Motor temperature sensor <input type="checkbox"/> Other: _____
6.9.4	Device Statistics capabilities	<input type="checkbox"/> Protection fault counts <input type="checkbox"/> Protection warning counts <input type="checkbox"/> Diagnostic fault counts <input type="checkbox"/> Fault history <input type="checkbox"/> Other: _____
6.9.5	Motor Statistics capabilities	<input type="checkbox"/> Cumulative run time <input type="checkbox"/> Motor starts per hour <input type="checkbox"/> Last start max current <input type="checkbox"/> Last start time <input type="checkbox"/> Other: _____
6.9.6	Diagnostics capabilities	<input type="checkbox"/> Communication loss <input type="checkbox"/> Controller internal temperature <input type="checkbox"/> Internal watchdog <input type="checkbox"/> Temperature sensor connection <input type="checkbox"/> Current connections <input type="checkbox"/> Other: _____



**FORM P (R1): PROPOSAL INFORMATION**

6.9.7	Available Protection Functions	<input type="checkbox"/> Thermal overload – definite <input type="checkbox"/> Thermal overload – inverse thermal <input type="checkbox"/> Current phase imbalance <input type="checkbox"/> Current phase loss <input type="checkbox"/> Current phase reversal <input type="checkbox"/> Overcurrent <input type="checkbox"/> Undercurrent <input type="checkbox"/> Ground current <input type="checkbox"/> Undervoltage <input type="checkbox"/> Overvoltage <input type="checkbox"/> Voltage phase loss <input type="checkbox"/> Voltage phase reversal <input type="checkbox"/> Under power <input type="checkbox"/> Over power <input type="checkbox"/> Under power factor <input type="checkbox"/> Over power factor <input type="checkbox"/> Long start <input type="checkbox"/> Motor temperature <input type="checkbox"/> Rapid cycle lockout <input type="checkbox"/> Jam <input type="checkbox"/> Stop on communication loss <input type="checkbox"/> Other: _____
6.9.8	Motor Temp Sensor Compatibility	<input type="checkbox"/> Thermistor <input type="checkbox"/> PTC binary <input type="checkbox"/> PTC analog <input type="checkbox"/> NTC analog <input type="checkbox"/> RTD <input type="checkbox"/> Ni100 analog <input type="checkbox"/> Ni1000 analog <input type="checkbox"/> Pt100 analog  <input type="checkbox"/> Other: _____
6.9.9	User Assignable Physical I/O – Base Module (for 120 VAC powered module)	<input type="checkbox"/> Discrete Inputs – 120VAC Max quantity: _____ <input type="checkbox"/> Discrete inputs – 24 VDC Max quantity: _____ <input type="checkbox"/> Discrete Outputs – Form A dry contact Max quantity: _____

**FORM P (R1): PROPOSAL INFORMATION**

6.9.10	I/O Expandability	<input type="checkbox"/> Discrete Inputs – 120VAC Max quantity: _____ <input type="checkbox"/> Discrete inputs – 24 VDC Max quantity: _____ <input type="checkbox"/> Discrete Outputs – Form A dry contact Max quantity: _____
6.9.11	Network Control Protocol Support	<input type="checkbox"/> Ethernet/IP <input type="checkbox"/> Modbus TCP <input type="checkbox"/> PROFIBUS/DP <input type="checkbox"/> PROFIBUS/DP with PROFINET to control system. <input type="checkbox"/> PROFINET <input type="checkbox"/> WWW (built-in web pages) <input type="checkbox"/> Other: _____
6.9.12	Network Interface Speed	Communication between programmable controller and MCC: <input type="checkbox"/> 10 Mbit <input type="checkbox"/> 100 Mbit <input type="checkbox"/> 1000 Mbit <input type="checkbox"/> Other: _____  Communication to each individual intelligent starter: <input type="checkbox"/> 10 Mbit <input type="checkbox"/> 100 Mbit <input type="checkbox"/> 1000 Mbit <input type="checkbox"/> Other: _____
6.9.13	Networking Features	<input type="checkbox"/> DHCP Support <input type="checkbox"/> Network Time Protocol Support <input type="checkbox"/> Automatic device reconfiguration upon replacement
6.9.14	Local HMI for Configuration and Maintenance	<input type="checkbox"/> Standard <input type="checkbox"/> Optional
6.9.15	Other	<input type="checkbox"/> PC-based Windows compatible programming and configuration software
<b>6.10</b>	<b>MCC Internal Network Redundancy</b>	
6.10.1	Describe the redundancy features of the internal network within the proposed MCC	

**FORM P (R1): PROPOSAL INFORMATION**

6.11	<b>Arc Flash / Arc Resistant Features</b>	
6.11.1	Identify the standard arc resistant features of the MCC, available in all MCCs, and included in the price in Form B.	
6.11.2	Is an optional maintenance mode switch available to modify the main breaker protection settings when maintenance activities are taking place?	<input type="checkbox"/> Yes, identify main breaker model number/series below. <p style="text-align: center;">_____</p> <input type="checkbox"/> No
6.11.3	Identify the optional arc resistant features available in the standard MCC offering by the manufacturer. Custom offerings are not to be included.	<input type="checkbox"/> Arc-flash resistant construction, tested in accordance with ANSI C37.20.7. <ul style="list-style-type: none"> <li><input type="checkbox"/> Entire MCC structure is arc resistant for faults anywhere within the MCC.</li> <li><input type="checkbox"/> Entire MCC structure is arc resistant for faults anywhere within the MCC, with the exception on the line side of the main breaker.</li> <li><input type="checkbox"/> The MCC structure is only arc resistant for faults downstream of the branch breakers.</li> </ul> <input type="checkbox"/> Reinforced door latches / fasteners. <input type="checkbox"/> Door reinforcements <input type="checkbox"/> Internal Venting <input type="checkbox"/> Roof venting <input type="checkbox"/> Manual Bus Shutters <input type="checkbox"/> Automatic Bus Shutters <input type="checkbox"/> Closed door racking. <input type="checkbox"/> Maintenance switch to provide 2 <sup>nd</sup> set of main breaker protection settings <input type="checkbox"/> Insulated horizontal bus <input type="checkbox"/> Insulated vertical bus <input type="checkbox"/> Through door voltage indicators <input type="checkbox"/> Infrared Inspection Ports  <input type="checkbox"/> Other: <p>_____</p> <p>_____</p> <p>_____</p> <p>Maximum ratings of arc resistant MCC:          Bus Rating: _____ A          SCCR Rating: _____ kA          Arcing Duration: _____ ms</p>

**FORM P (R1): PROPOSAL INFORMATION**

<b>6.12</b>	<b>Custom Capabilities</b>	
6.12.4	Identify and describe capabilities to include custom starters/controls into the MCC line-up.	<input type="checkbox"/> Can integrate custom engineered solutions in the factory. <input type="checkbox"/> Can supply empty structures and parts for integration by an independent panel shop. <input type="checkbox"/> Other: _____  Describe: _____
<b>7.0</b>	<b>Variable Frequency Drives</b>	
<b>7.1</b>	<b>Environmental Characteristics</b>	
7.1.1	Operating temperature range	_____ to _____ °C
7.1.2	Conformal coating on circuit boards	<input type="checkbox"/> Standard <input type="checkbox"/> Optional
7.1.3	Available drive enclosure types	<input type="checkbox"/> NEMA Type 1 <input type="checkbox"/> NEMA Type 4 <input type="checkbox"/> NEMA Type 4X <input type="checkbox"/> NEMA Type 12 <input type="checkbox"/> Other: _____
<b>7.2</b>	<b>Features</b>	
7.2.1	Operation Modes	<input type="checkbox"/> V/F (mandatory) <input type="checkbox"/> Sensorless Vector (mandatory) <input type="checkbox"/> Other: _____
7.2.2	Protective Functions	<input type="checkbox"/> VFD internal failure <input type="checkbox"/> Ground fault internal to VFD <input type="checkbox"/> Ground fault on VFD output <input type="checkbox"/> VFD output overcurrent <input type="checkbox"/> VFD output current unbalance <input type="checkbox"/> DC bus under/overvoltage <input type="checkbox"/> Input supply over or under voltage <input type="checkbox"/> Input supply voltage unbalance <input type="checkbox"/> DC link fault <input type="checkbox"/> 5% frequency deviation from setpoint <input type="checkbox"/> Loss of control signal <input type="checkbox"/> Control electronics fault <input type="checkbox"/> VFD over temperature <input type="checkbox"/> Motor over temperature <input type="checkbox"/> Motor stalled <input type="checkbox"/> Loss of load (underload) <input type="checkbox"/> Other: _____

**FORM P (R1): PROPOSAL INFORMATION**

7.2.3	Control Functions	<input type="checkbox"/> 2-wire and 3-wire control <input type="checkbox"/> Constant speed selection via digital input(s) <input type="checkbox"/> Selectable accel/decel ramp type: linear and s-curve <input type="checkbox"/> Selectable profile(s) via discrete input(s) <input type="checkbox"/> Internal PID controller <input type="checkbox"/> Adjustable PWM (switching) frequency <input type="checkbox"/> Other: _____
7.2.4	Maintenance	<input type="checkbox"/> Field-replaceable fans without removal of drive from enclosure. <input type="checkbox"/> Drive parameters can be saved to keypad and downloaded to replacement drive from keypad. <input type="checkbox"/> The user can reset all internal fault alarms, including fan failure. <input type="checkbox"/> The user has access to all drive parameters.
7.2.5	Drive Configuration Software	<p>Form of Software:</p> <input type="checkbox"/> The drive configuration software is an independent software package: Name: _____ <input type="checkbox"/> The drive configuration software is integrated into the programmable controller programming tool.
Capabilities:		<input type="checkbox"/> Drive parameters can be developed offline in the drive configuration software, and saved to / loaded from a file. <input type="checkbox"/> The drive configuration software communicates over the Ethernet network to the VFD.
Licences:		<input type="checkbox"/> A minimum of ten copies of the software are included in the proposal. <input type="checkbox"/> There is no cost to the software and it may be installed on an unlimited number of computers.
7.3	I/O	
7.3.1	Discrete Inputs	<input type="checkbox"/> 24 VDC, Quantity: _____ <input type="checkbox"/> 120 VAC, Quantity: _____
7.3.2	Discrete Outputs	<input type="checkbox"/> Dry Contact, Quantity: _____ Contact rating: _____ at 24 VDC _____ at 120 VAC <input type="checkbox"/> 24 VDC, Quantity: _____ <input type="checkbox"/> 120 VAC, Quantity: _____
7.3.3	Analog Inputs	<input type="checkbox"/> 0 to 10 VDC, Quantity: _____ <input type="checkbox"/> 4 to 20 mA, Quantity: _____

**FORM P (R1): PROPOSAL INFORMATION**

7.3.4	Analog Outputs	<input type="checkbox"/> 0 to 10 VDC, Quantity: _____ <input type="checkbox"/> 4 to 20 mA, Quantity: _____
<b>7.4</b>	<b>Display</b>	
7.4.1	Describe the keypad display	<input type="checkbox"/> Backlit LCD <input type="checkbox"/> Other: _____  Lines of text: _____  Other details:
<b>7.5</b>	<b>Communications</b>	
7.5.1	Proposed fieldbus to be included with all drives for monitoring and control.	<input type="checkbox"/> Ethernet/IP <input type="checkbox"/> PROFINET <input type="checkbox"/> PROFIBUS <input type="checkbox"/> Modbus TCP
7.5.2	Support for other protocols	<input type="checkbox"/> Ethernet/IP <input type="checkbox"/> Native. <input type="checkbox"/> With optional communications adapter offered by manufacturer. <input type="checkbox"/> PROFINET <input type="checkbox"/> Native. <input type="checkbox"/> With optional communications adapter offered by manufacturer. <input type="checkbox"/> PROFIBUS <input type="checkbox"/> Native. <input type="checkbox"/> With optional communications adapter offered by manufacturer. <input type="checkbox"/> Modbus TCP <input type="checkbox"/> Native. <input type="checkbox"/> With optional communications adapter offered by manufacturer.
7.5.3	Network Switch	<input type="checkbox"/> Integrated Ethernet Network Switch <input type="checkbox"/> Compatible with fault tolerant ring.
7.5.4	Supported Features	<input type="checkbox"/> Network time synchronization <input type="checkbox"/> Redundant communication adapters

**FORM P (R1): PROPOSAL INFORMATION**

<b>7.6</b>	<b>Device Replacement</b>	
7.6.1	Identify requirements to configure a replaced drive on the network.	<input type="checkbox"/> Manual configuration of the drive parameters is required. <input type="checkbox"/> Set an address switch and the remainder of the configuration is automatically downloaded to the new drive. <input type="checkbox"/> The configuration is stored in the keypad and will automatically download to the new drive. <input type="checkbox"/> Just plug in, and the device configures itself via the following: _____  <input type="checkbox"/> Other: _____  Other details:
<b>7.7</b>	<b>7.5 kW (10 hp) drive</b>	
7.7.1	Complete model number of 7.5 kW (10 hp) VFD proposed.	
7.7.2	Short-Circuit Current Rating (SCCR)	Without fusing: _____ kA at 600 V  With fusing: _____ kA at 600 V
7.7.3	Efficiency	Full load: _____ % 75% load: _____ % 50% load: _____ % 25% load: _____ %
7.7.4	Overload capability (fan / pump application)	110 % for _____ sec 150 % for _____ sec
<b>7.8</b>	<b>37 kW (50 hp) drive</b>	
7.8.1	Complete model number of 37 kW (50 hp) VFD proposed.	

**FORM P (R1): PROPOSAL INFORMATION**

7.8.2	Short-Circuit Current Rating (SCCR)	Without fusing: _____ kA at 600 V  With fusing: _____ kA at 600 V
7.8.3	Minimum input displacement power factor at all speeds and loads	
7.8.4	Efficiency	Full load: _____ % 75% load: _____ % 50% load: _____ % 25% load: _____ %
7.8.5	Overload capability (fan / pump application)	110 % for _____ sec 150 % for _____ sec
7.8.6	For the proposed 37 kW (50 HP) drive, indicate the current input harmonics.	<input type="checkbox"/> Current input harmonics are typical for a six-pulse drive. <input type="checkbox"/> Current input harmonics are better than a typical six-pulse drive. This is due to the following technology the drive has: _____  <input type="checkbox"/> Current input harmonics are provided in a separate document: _____  Other details:
7.8.7	Identify standard VFD options available to reduce the current input harmonics of a stand-alone 37 kW (50 HP) drive.	<input type="checkbox"/> 12-pulse drive <input type="checkbox"/> 18-pulse drive <input type="checkbox"/> 24-pulse drive <input type="checkbox"/> Active front end <input type="checkbox"/> Input filter: (Identify manufacturer of input filter) _____  Other details:



**FORM P (R1): PROPOSAL INFORMATION**

7.8.8	Identify standard VFD options available to reduce the current input harmonics of a MCC-mounted 37 kW (50 HP) drive, without custom engineering.	<input type="checkbox"/> 12-pulse drive <input type="checkbox"/> 18-pulse drive <input type="checkbox"/> 24-pulse drive <input type="checkbox"/> Active front end <input type="checkbox"/> Input filter: (Identify manufacturer of input filter)  _____ Other details:
<b>8.0</b>	<b>Non-Mandatory Software Systems</b>	
<b>8.1</b>	<b>Historian Central Archive Server</b>	
8.1.1	Is historian central archive server software being proposed as an option? If so, provide product name.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Already integrated into base proposal – No additional cost. Describe below:  _____ Product Name: _____
8.1.2	Replication Capabilities	<input type="checkbox"/> Collection of data from the three (3) historian facility servers. <input type="checkbox"/> Central server can filter and replicate only a portion of the data on the local historian servers. <input type="checkbox"/> Central server must replicate the entire data set on the local historian servers.
8.1.3	Provide a comprehensive description of the product features.	<i>Reference other documents as applicable.</i>
8.1.4	Identify how the historian central archive server integrates with the proposed base products.	<i>Reference other documents as applicable.</i>

**FORM P (R1): PROPOSAL INFORMATION**

<b>8.2</b>	<b>Version Management Software</b>	
8.2.1	Is version management software being proposed as an option? If so, provide product name.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Integrated into Programmable Controller and HMI Programming Software – No additional cost  Product Name: _____
8.2.2	Provide a comprehensive description of the product features.	<i>Reference other documents as applicable.</i>
8.2.3	Identify how the version management software integrates with the proposed base products.	<i>Reference other documents as applicable.</i>
<b>8.3</b>	<b>Information Server</b>	
8.3.1	Is information server software being proposed as an option? If so, provide product name.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Integrated into proposed Historian offering – No additional cost  Product Name: _____
8.3.2	Identify the proposed server configuration.	<input type="checkbox"/> One central server is proposed that will serve all three facilities. <input type="checkbox"/> Three servers are proposed, one for each facility.  Other details:
8.3.3	Provide a comprehensive description of the product features.	<i>Reference other documents as applicable.</i>

**FORM P (R1): PROPOSAL INFORMATION**

8.3.4	Identify how the information server software integrates with the proposed base products.	<i>Reference other documents as applicable.</i>
<b>8.4</b>	<b>Metrics Server Software</b>	
8.4.1	Is metrics server software being proposed as an option? If so, provide product name.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Integrated into proposed Historian offering – No additional cost <input type="checkbox"/> Integrated into Optional Information Server Software – No additional cost  Product Name: _____
8.4.2	Identify the proposed server configuration.	<input type="checkbox"/> One central server is proposed that will serve all three facilities. <input type="checkbox"/> Three servers are proposed, one for each facility.  Other details:
8.4.3	Provide a comprehensive description of the product features.	<i>Reference other documents as applicable.</i>
8.4.4	Identify how the metrics server software integrates with the proposed base products.	<i>Reference other documents as applicable.</i>

**FORM P (R1): PROPOSAL INFORMATION**

<b>8.5</b>	<b>Enterprise Database Integration Software</b>	
8.5.1	Is enterprise database integration software being proposed as an option? If so, provide product name.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Integrated into base proposed products.  Product Name: _____
8.5.2	Identify the proposed server configuration.	<input type="checkbox"/> One central server is proposed that will serve all three facilities. <input type="checkbox"/> Three servers are proposed, one for each facility.  Other details:
8.5.3	Provide a comprehensive description of the product features.	<i>Reference other documents as applicable.</i>
8.5.4	Identify how the enterprise database integration software integrates with the proposed base products.	<i>Reference other documents as applicable.</i>
8.5.5	Identify the desired City's Computerized Work Management System features that will be supported by the proposed software.	<input type="checkbox"/> Abnormal events, such as an alarm or a high process level, can be configured to automatically generate a work order with the appropriate parameters. <input type="checkbox"/> Utilize equipment runtimes to automatically generate work orders with the appropriate parameters. <input type="checkbox"/> Manually initiate a work order from the HMI. (lower priority) <input type="checkbox"/> View work orders for specific equipment from the HMI. (lower priority)  Other details:

**FORM P (R1): PROPOSAL INFORMATION**

8.5.6	Identify any previous experience implementing the desired Computerized Work Management System Features utilizing the proposed software.	<p>Number of projects:</p> <hr/> <p><b>Project 1</b> Name:</p> <hr/> <p>Client:</p> <hr/> <p>Description:</p> <hr/> <p><b>Project 2</b> Name:</p> <hr/> <p>Client:</p> <hr/> <p>Description:</p> <hr/>
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**FORM P (R1): PROPOSAL INFORMATION**

<b>8.6</b>	<b>Other Packages</b>	
8.6.1	Identify other software packages offered that may be of interest to the City and integrate with the proposed products. Do not include the price of these products in Form B, unless proposed as part of the base package.	<p>Name: _____</p> <p>Description: _____</p> <p>_____</p> <p>Name: _____</p> <p>Description: _____</p> <p>_____</p> <p>Name: _____</p> <p>Description: _____</p> <p>_____</p> <p>Name: _____</p> <p>Description: _____</p> <p>_____</p> <p><i>Provide product datasheets for all indicated products.</i></p>
<b>9.0</b>	<b>Integration Capabilities</b>	
<b>9.1</b>	<b>Software Engineering Tools</b>	
9.1.1	Identify the complete set of software engineering tools proposed. The list should be comprehensive of all products within this RFP.	
9.1.2	Describe the high-level integration capabilities between the indicated software engineering tools.	

**FORM P (R1): PROPOSAL INFORMATION**

<b>9.2</b>	<b>Programmable Controller and HMI Integration</b>	
9.2.1	Describe the integration of the programmable controller and HMI tag database.	<input type="checkbox"/> The controller and HMI utilize a common database. It is not possible for them to be out of sync. <input type="checkbox"/> The HMI tag database is automatically updated and synchronized with the controller database. <input type="checkbox"/> Database export / import tools are provided to synchronize the databases. Other Details:
9.2.2	Are object structures (user defined data types) in the programmable controller common to, and synchronized with the HMI? Describe:	<i>Reference other documents as applicable:</i>
9.2.3	Describe the integrated system's ability to provide a central repository of pre-configured and customized library of objects.	<input type="checkbox"/> A central repository of objects is provided on a server. <ul style="list-style-type: none"> <li><input type="checkbox"/> All programming workstation software packages communicate continuously with the server and any new function blocks or modifications made are inherently made on the central server and accessible to all programming workstations.</li> <li><input type="checkbox"/> All programming workstation software packages provide the ability to transfer function blocks to and from the central server, integrated within the programming software packages.</li> </ul> <input type="checkbox"/> A central repository of objects can be configured via copying function blocks between the specific project and a library project. <input type="checkbox"/> A central repository of objects is not available. Other Details:  <i>Reference other documents as applicable:</i>
9.2.4	Describe the proposed systems ability to share a central repository between the three wastewater treatment facilities.	

**FORM P (R1): PROPOSAL INFORMATION**

9.2.5	Describe the integration of the alarming system.	<p>The alarming system is managed by:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alarms are managed by the programmable controller <ul style="list-style-type: none"> <li><input type="checkbox"/> Alarm state and acknowledgement is stored in the controller.</li> <li><input type="checkbox"/> Date / time stamping is performed in the controller.</li> </ul> </li> <li><input type="checkbox"/> Alarms are managed by the HMI system <ul style="list-style-type: none"> <li><input type="checkbox"/> Date / time stamping is performed in the controller.</li> <li><input type="checkbox"/> Date / time stamping is performed at the HMI.</li> </ul> </li> </ul> <p>Individual alarms must be configured in:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Programmable controller</li> <li><input type="checkbox"/> HMI</li> </ul> <p>Other details:</p>
9.2.6	<p><b>In Service Flag</b> Is an integrated feature provided (without additional coding) to flag whether each individual piece of equipment is in service? This would primarily be utilized during commissioning, but could also be utilized during maintenance.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Yes, an integrated flag is provided. It is called a: _____ <ul style="list-style-type: none"> <li><input type="checkbox"/> The flag disables the equipment when not in service.</li> <li><input type="checkbox"/> The flag is visually displayed on the graphics via shading or similar means.</li> </ul> </li> <li><input type="checkbox"/> The identified in-service feature can be provided through customized coding.</li> <li><input type="checkbox"/> The feature is not available.</li> </ul>
9.2.7	Time Synchronization Features	<ul style="list-style-type: none"> <li><input type="checkbox"/> Time synchronization between all controllers and the HMI is automatically performed without coding.</li> <li><input type="checkbox"/> Time synchronization between all controllers and the HMI may be performed with minimal coding.</li> <li><input type="checkbox"/> A limited time synchronization feature set is available.</li> </ul> <p>Additional details:</p>



**FORM P (R1): PROPOSAL INFORMATION**

9.3	Process Library		
9.3.1	<p>Identify functions provided within the process library. Only check the faceplate field if the faceplate communicates with the programmable controller function block via a pre-configured interface, that requires at maximum a single link to the function block.</p>	<p style="text-align: center;">Programmable Controller Function Block</p> <p>Standard PID Controller <input type="checkbox"/></p> <p>Cascade PID Controller <input type="checkbox"/></p> <p>Ratio Controller <input type="checkbox"/></p> <p>Controller with Split Range <input type="checkbox"/></p> <p>Manual Loader <input type="checkbox"/></p> <p>Analog Value Monitoring     With alarm signal <input type="checkbox"/></p> <p>Motor Start / Stop     With interlocks <input type="checkbox"/></p> <p>Two speed motor control <input type="checkbox"/></p> <p>Reversing motor control <input type="checkbox"/></p> <p>Variable speed motor control <input type="checkbox"/></p> <p>On/Off Valve Control     with feedback monitoring <input type="checkbox"/></p> <p>Modulating Valve Control     With feedback monitoring <input type="checkbox"/></p> <p>Motorized valve control     With feedback monitoring <input type="checkbox"/></p> <p>Other:</p> <p>Additional Details:</p> <p><i>Reference other documents as applicable.</i></p>	<p style="text-align: center;">HMI Faceplate</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
9.3.2	<p>Are the colors and shapes of the graphic symbols in the process library completely customizable?</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> Partially</p> <p><input type="checkbox"/> No</p> <p>Additional Details:</p>	

**FORM P (R1): PROPOSAL INFORMATION**

9.3.3	Describe the included graphic library's compliance with the shades-of-gray operational philosophy, as discussed in the ASM Consortium Guidelines.	<input type="checkbox"/> Yes, the library completely follows the shades-of-gray concept. <input type="checkbox"/> Yes, the library is fully customizable to meet the shades-of-gray concept. <input type="checkbox"/> The library is partially compliant. <input type="checkbox"/> The library is not compliant.  Additional Details:
<b>9.4 Historian Integration</b>		
9.4.1	How are historian tags configured?	<input type="checkbox"/> From the HMI configuration software. <input type="checkbox"/> From the Historian configuration software, with a direct link to the HMI tag database. <input type="checkbox"/> From the Historian configuration software, with a separate tag database, with export / import capabilities.  Additional Details:
9.4.2	Describe historical data integration into the HMI.	<input type="checkbox"/> Historical data may be incorporated seamlessly into the historical trend displays on the HMI. <input type="checkbox"/> Historical data reports may be incorporated seamlessly into the HMI. <input type="checkbox"/> Historical data may be queried from the local historian. <input type="checkbox"/> Historical data may be queried from the central historian.  Additional Details:

**FORM P (R1): PROPOSAL INFORMATION**

9.4.3	Describe the proposed system capabilities regarding integration of laboratory analysis data into the historian.	<input type="checkbox"/> The system allows for automated data entry into the system via the following interface: <hr/> <input type="checkbox"/> Laboratory analysis data may be manually entered into the historian. <input type="checkbox"/> Other (describe below)  Additional Details:
<b>9.5</b>	<b>Intelligent Field Device Integration</b>	
9.5.1	Intelligent Field Device Management Software	Name of software tool providing intelligent device management: <hr/> Is the same tool utilized for motor starters, VFDs, and fieldbus instruments? <input type="checkbox"/> Yes <input type="checkbox"/> No  Is the same tool utilized for all supported protocols? <input type="checkbox"/> PROFIBUS <input type="checkbox"/> Foundation Fieldbus <input type="checkbox"/> HART <input type="checkbox"/> Modbus TCP  Other Details:
9.5.2	Intelligent Field Device Management Software - EDDL Support	Are EDDL (Electronic Device Description Language) device files supported? <input type="checkbox"/> Yes <input type="checkbox"/> No  Other Details:

**FORM P (R1): PROPOSAL INFORMATION**

9.5.3	Intelligent Field Device Management Software – Device Diagnostics	<p>The software tool can provide the following diagnostic states:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communication Fault</li> <li><input type="checkbox"/> Configuration Error</li> <li><input type="checkbox"/> Maintenance Required</li> <li><input type="checkbox"/> Maintenance Recommended</li> <li><input type="checkbox"/> Process Error</li> </ul> <p>The software tool can provide an measurable indication of the communication signal waveform distortion to allow for predictive maintenance of a deteriorating network.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Measurement of network distortion</li> </ul> <p>Other Details:</p>
9.5.4	Can new intelligent field devices be added to the fieldbus network without taking the network out of service?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Yes, for all controllers (redundant or not).</li> <li><input type="checkbox"/> Yes, for all redundant controllers.</li> <li><input type="checkbox"/> No, the fieldbus network must be briefly taken out of service.</li> </ul>
9.5.5	Intelligent Motor Starter / VFD Diagnostics  Describe in detail how a maintenance technician would troubleshoot a motor starter / VFD remotely. Identify software tools utilized and the steps required.	<i>Reference other documents as applicable:</i>
9.5.6	Intelligent Instrument Diagnostics  Describe in detail how a maintenance technician would troubleshoot a fieldbus instrument remotely. Identify software tools utilized and the steps required.	<i>Reference other documents as applicable:</i>

**FORM P (R1): PROPOSAL INFORMATION**

<p>9.5.7</p>	<p><b>VFD Integration</b></p> <p>Describe in detail the pre-built integration capabilities to minimize the manual configuration of VFDs, from the VFD, through the controller, and to the HMI.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> A pre-built comprehensive programmable controller function block is provided to manage all VFD functions including:             <ul style="list-style-type: none"> <li><input type="checkbox"/> VFD communications</li> <li><input type="checkbox"/> control</li> <li><input type="checkbox"/> monitoring</li> <li><input type="checkbox"/> diagnostics and fault capability</li> <li><input type="checkbox"/> process interlocking capability</li> </ul> </li> <li><input type="checkbox"/> A pre-built HMI faceplate is provided to link to the controller VFD function block. The faceplate provides:             <ul style="list-style-type: none"> <li><input type="checkbox"/> control</li> <li><input type="checkbox"/> monitoring</li> <li><input type="checkbox"/> diagnostics and fault display capability</li> <li><input type="checkbox"/> process interlocking display</li> </ul> </li> <li><input type="checkbox"/> Only one link between the HMI faceplate and controller function block must be established.</li> </ul> <p>Provide additional details and reference other documents as applicable.</p>
<p>9.5.8</p>	<p><b>Intelligent Motor Starter Integration</b></p> <p>Describe in detail the pre-built integration capabilities to minimize the manual configuration of intelligent motor starters, from the motor starter, through the controller, and to the HMI.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> A pre-built comprehensive programmable controller function block is provided to manage all motor starter functions including:             <ul style="list-style-type: none"> <li><input type="checkbox"/> starter communications</li> <li><input type="checkbox"/> control</li> <li><input type="checkbox"/> monitoring</li> <li><input type="checkbox"/> diagnostics and fault capability</li> <li><input type="checkbox"/> process interlocking capability</li> </ul> </li> <li><input type="checkbox"/> A pre-built HMI faceplate is provided to link to the controller starter function block. The faceplate provides:             <ul style="list-style-type: none"> <li><input type="checkbox"/> control</li> <li><input type="checkbox"/> monitoring</li> <li><input type="checkbox"/> diagnostics and fault display capability</li> <li><input type="checkbox"/> process interlocking display</li> </ul> </li> <li><input type="checkbox"/> Only one link between the starter faceplate and controller function block must be established.</li> </ul> <p>Provide additional details and reference other documents as applicable.</p>

**FORM P (R1): PROPOSAL INFORMATION**

<b>9.6</b>	<b>Ethernet Switch Integration</b>	
9.6.1	Describe the Ethernet switch diagnostic features available natively in the control system, with the proposed products.	<input type="checkbox"/> All Ethernet switch diagnostic data is fully provided to the control system, as described below. <input type="checkbox"/> Basic Ethernet switch operation status is provided to the control system, as described below. <input type="checkbox"/> No Ethernet switch / control system integration is provided.  Describe:

**FORM P (R1): PROPOSAL INFORMATION**

<p><b>9.7</b></p>	<p><b>User Security</b></p>	
<p>9.7.1</p>	<p>Describe the integrated user security capability features of the proposed complete integrated system.</p>	<p>Programmable Controller</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The programmable controller and HMI/Historian systems have an integrated authentication system</li> <li><input type="checkbox"/> The programmable controller and HMI/Historian systems have a separate authentication system</li> </ul> <p>HMI / Historian / Web Server</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The HMI system, Historian system, and web server all have an integrated authentication system.</li> <li><input type="checkbox"/> User authentication is integrated with Microsoft Windows.             <ul style="list-style-type: none"> <li><input type="checkbox"/> User authentication via Microsoft Active Directory.</li> <li><input type="checkbox"/> Other (Describe below)</li> </ul> </li> </ul> <p>Inter-Facility – If a user at the SEWPCC wishes to log on to the WEWPCC HMI, will they be utilizing the same user account at the SEWPCC and the WEWPCC? If a change is made to the user account, can it be made in one place only?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes, the security / user authentication system is shared / common between the three facilities.             <ul style="list-style-type: none"> <li><input type="checkbox"/> A communication failure between the facilities will not affect user authentication.</li> <li><input type="checkbox"/> A communication failure between the facilities will affect user authentication.</li> </ul> </li> <li><input type="checkbox"/> User authentication is set individually for each facility.</li> </ul> <p>Provide additional details and reference other documents as applicable.</p>

**FORM P (R1): PROPOSAL INFORMATION**

<b>9.8</b>	<b>Enterprise System Integration</b>	
9.8.1	Identify enterprise system integration capabilities.	<i>Reference other documents as applicable:</i>
9.8.2	Describe support for ISA S95 standards, as well as included and optional software modules to allow for ISA S95 compliant integration. Ensure any components not included in the proposal are clearly identified.	<i>Reference other documents as applicable:</i>
<b>10.0</b>	<b>Service and Support</b>	
<b>10.1</b>	<b>General</b>	
10.1.1	Proposed Bidder account manager:	Name: _____ Responsibilities: _____ Relevant Experience: _____ Certifications: _____
10.1.2	Other personnel	Name: _____ Responsibilities: _____ Relevant Experience: _____ Certifications: _____
10.1.3	Hours of business	
10.1.4	Describe Bidder's relationship with the manufacturer.	
10.1.5	Describe Bidders' local support capabilities. Does the Bidder employ factory trained service personnel? Where are they located?	
10.1.6	Describe manufacturer's local support capabilities. Does the manufacturer employ factory trained service personnel? Where are they located?	



**FORM P (R1): PROPOSAL INFORMATION**

10.1.7	In the event that telephone / e-mail technical support is required, who will provide the first level of support?	<input type="checkbox"/> Bidder <input type="checkbox"/> Manufacturer <input type="checkbox"/> Other  Other: _____
10.1.8	Describe Bidder's local telephone / e-mail support capabilities. How many trained personnel? Describe years of experience.	
10.1.9	In the event that field service is required, who will provide the first level of support?	<input type="checkbox"/> Bidder <input type="checkbox"/> Manufacturer <input type="checkbox"/> Other  Other: _____
<b>10.2</b>	<b>Design Assistance</b>	
10.2.10	Confirm that design assistance will be available as per E8.  <i>Note: Proposals without design assistance services may be deemed non-responsive.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

**FORM P (R1): PROPOSAL INFORMATION**

10.2.11	Identify any other design assistance services proposed, in addition to those specified in E8.	
<b>10.3</b>	<b>Systems Integrators</b>	
10.3.1	Identify the manufacturer's requirements for systems integrators.	<input type="checkbox"/> Any systems integrator may integrate the manufacturer's products. No restrictions exist <input type="checkbox"/> A certification program is in place to certify systems integrators who have demonstrated capabilities with the manufacturer's products. <input type="checkbox"/> Any systems integrator may integrate the manufacturer's products. Some restrictions exist. Describe below. <input type="checkbox"/> Only approved systems integrators may integrate the manufacturer's products.  Additional Details:
10.3.2	Identify local systems integrators approved to integrate the proposed products.	Name: _____ Certification: _____ Years of experience with manufacture's products: _____ City: _____  Name: _____ Certification: _____ Years of experience with manufacture's products: _____ City: _____  Name: _____ Certification: _____ Years of experience with manufacture's products: _____ City: _____  Name: _____ Certification: _____ Years of experience with manufacture's products: _____ City: _____  <input type="checkbox"/> Additional approved local systems integrators are indicated in attached documentation.

**FORM P (R1): PROPOSAL INFORMATION**

<b>10.4</b>	<b>Support Services Without Service and Support Agreements</b>	
10.4.1	Is manufacturer telephone technical support available without a service / support agreement?	<input type="checkbox"/> Yes – complete technical support <input type="checkbox"/> Limited technical support (complete details below) <input type="checkbox"/> Not available.  Details: _____
10.4.2	Availability of telephone technical support, without service and support agreement?	<input type="checkbox"/> 24/7 <input type="checkbox"/> Other (complete below)  Other: _____
10.4.3	Are the indicated manufacturer website technical resources available without a service / support agreement?	<p><b>Programmable Controllers:</b></p> <input type="checkbox"/> Application Notes <input type="checkbox"/> Knowledgebase (Complete access) <input type="checkbox"/> Manuals / Datasheets <input type="checkbox"/> Sample architectures <input type="checkbox"/> Sample programs <input type="checkbox"/> Tech Notes <input type="checkbox"/> User forums  <p><b>HMI / Historian:</b></p> <input type="checkbox"/> Application Notes <input type="checkbox"/> Knowledgebase (Complete access) <input type="checkbox"/> Manuals / Datasheets <input type="checkbox"/> Sample architectures <input type="checkbox"/> Sample programs <input type="checkbox"/> Tech Notes <input type="checkbox"/> User forums  <p><b>Motor Control (MCC / VFDs):</b></p> <input type="checkbox"/> Application Notes <input type="checkbox"/> Knowledgebase (Complete access) <input type="checkbox"/> Manuals / Datasheets <input type="checkbox"/> Sample architectures <input type="checkbox"/> Sample programs <input type="checkbox"/> Tech Notes <input type="checkbox"/> User forums  Details: _____
10.4.4	Are programmable controller firmware updates available without a service / support agreement?	<input type="checkbox"/> Yes <input type="checkbox"/> No  Details: _____

**FORM P (R1): PROPOSAL INFORMATION**

<p><b>10.5</b></p>	<p><b>Programmable Controller Annual Support Service (With Service and Support Agreement)</b></p>	
<p>10.5.1</p>	<p>Telephone Technical Support (with service and support agreement)</p>	<p> <input type="checkbox"/> Local number provided  <input type="checkbox"/> Toll-Free number provided  <input type="checkbox"/> Long-Distance number provided         </p> <p>Technical Support Availability:</p> <p> <input type="checkbox"/> Monday – Friday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Saturday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Sunday                            Hours: _____ to _____ CST         </p> <p>Service Provided By:</p> <p> <input type="checkbox"/> Local Winnipeg distributor personnel  <input type="checkbox"/> Local Winnipeg manufacturer personnel  <input type="checkbox"/> Remote distributor personnel  <input type="checkbox"/> Remote manufacturer personnel         </p> <p>Call answered by:</p> <p> <input type="checkbox"/> Machine - Voicemail  <input type="checkbox"/> Machine with transfer to technical support personnel  <input type="checkbox"/> Operator with transfer to technical support personnel  <input type="checkbox"/> Technical support personnel  <input type="checkbox"/> Other: _____         </p> <p>Other Relevant Information: _____</p> <p>_____</p>
<p>10.5.2</p>	<p>Describe e-mail technical support policies and capabilities. Describe personnel who are providing the service.</p>	

**FORM P (R1): PROPOSAL INFORMATION**

10.5.3	Describe self-serve technical support services and capabilities. Provision of a web address and user id (if required) is encouraged.	
10.5.4	Describe other services included.	
10.5.5	Are there any limits on the number of users (City personnel) who have access to the Programmable Controller Hardware Technical Support Services?	<input type="checkbox"/> Technical support services may be accessed by an unlimited number of users. (User Ids not required or sharing is permitted). <input type="checkbox"/> Technical support services are available to _____ users. <i>Note: A minimum of ten users is a mandatory requirement.</i>

**FORM P (R1): PROPOSAL INFORMATION**

<p><b>10.6</b></p>	<p><b>HMI and Historian Annual Support Service (With Service and Support Agreement)</b></p>	
<p>10.6.1</p>	<p>Telephone Technical Support (with service and support agreement)</p>	<p> <input type="checkbox"/> Local number provided  <input type="checkbox"/> Toll-Free number provided  <input type="checkbox"/> Long-Distance number provided         </p> <p>Technical Support Availability:</p> <p> <input type="checkbox"/> Monday – Friday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Saturday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Sunday                            Hours: _____ to _____ CST         </p> <p>Service Provided By:</p> <p> <input type="checkbox"/> Local Winnipeg distributor personnel  <input type="checkbox"/> Local Winnipeg manufacturer personnel  <input type="checkbox"/> Remote distributor personnel  <input type="checkbox"/> Remote manufacturer personnel         </p> <p>Call answered by:</p> <p> <input type="checkbox"/> Machine - Voicemail  <input type="checkbox"/> Machine with transfer to technical support personnel  <input type="checkbox"/> Operator with transfer to technical support personnel  <input type="checkbox"/> Technical support personnel  <input type="checkbox"/> Other: _____         </p> <p>Other Relevant Information: _____</p> <p>_____</p>
<p>10.6.2</p>	<p>Describe e-mail technical support policies and capabilities. Describe personnel who are providing the service.</p>	

**FORM P (R1): PROPOSAL INFORMATION**

10.6.3	Describe self-serve technical support services and capabilities. Provision of a web address and user id (if required) is encouraged.	
10.6.4	Describe other services included.	
10.6.5	Are there any limits on the number of users (City personnel) who have access to the Programmable Controller Hardware Technical Support Services?	<input type="checkbox"/> Technical support services may be accessed by an unlimited number of users. (User Ids not required or sharing is permitted). <input type="checkbox"/> Technical support services are available to _____ users. <i>Note: A minimum of ten users is a mandatory requirement.</i>

**FORM P (R1): PROPOSAL INFORMATION**

<p><b>10.7</b></p>	<p><b>Motor Control Annual Support Service (With Service and Support Agreement)</b></p>	
<p>10.7.1</p>	<p>Telephone Technical Support (with service and support agreement)</p>	<p> <input type="checkbox"/> Local number provided  <input type="checkbox"/> Toll-Free number provided  <input type="checkbox"/> Long-Distance number provided         </p> <p>Technical Support Availability:</p> <p> <input type="checkbox"/> Monday – Friday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Saturday                            Hours: _____ to _____ CST         </p> <p> <input type="checkbox"/> Sunday                            Hours: _____ to _____ CST         </p> <p>Service Provided By:</p> <p> <input type="checkbox"/> Local Winnipeg distributor personnel  <input type="checkbox"/> Local Winnipeg manufacturer personnel  <input type="checkbox"/> Remote distributor personnel  <input type="checkbox"/> Remote manufacturer personnel         </p> <p>Call answered by:</p> <p> <input type="checkbox"/> Machine - Voicemail  <input type="checkbox"/> Machine with transfer to technical support personnel  <input type="checkbox"/> Operator with transfer to technical support personnel  <input type="checkbox"/> Technical support personnel  <input type="checkbox"/> Other: _____         </p> <p>Other Relevant Information: _____</p> <p>_____</p>
<p>10.7.2</p>	<p>Describe e-mail technical support policies and capabilities. Describe personnel who are providing the service.</p>	



**FORM P (R1): PROPOSAL INFORMATION**

10.7.3	Describe self-serve technical support services and capabilities. Provision of a web address and user id (if required) is encouraged.	
10.7.4	Describe other services included.	
10.7.5	Are there any limits on the number of users (City personnel) who have access to the Motor Control Technical Support Services?	<input type="checkbox"/> Technical support services may be accessed by an unlimited number of users. (User Ids not required or sharing is permitted). <input type="checkbox"/> Technical support services are available to _____ users. <i>Note: A minimum of 20 users is a mandatory requirement.</i>

**FORM P (R1): PROPOSAL INFORMATION**

<b>10.8</b>	<b>Spare Parts</b>	
10.8.1	Describe the manufacturer and wholesaler capabilities with respect to spare parts and rapid delivery upon placement of a rush order.	<i>Reference additional documents as required.</i>
<b>10.9</b>	<b>Additional Training</b>	
10.9.1	PLC System Training - Describe the manufacturer's additional training courses offered, along with cost and typical locations.	<i>Reference additional documents, such as a course catalogue, as required.</i>
10.9.2	HMI System Training - Describe the manufacturer's additional training courses offered, along with cost and typical locations.	<i>Reference additional documents, such as a course catalogue, as required.</i>
10.9.3	MCC System Training - Describe the manufacturer's additional training courses offered, along with cost and typical locations.	<i>Reference additional documents, such as a course catalogue, as required.</i>

**FORM P (R1): PROPOSAL INFORMATION**

10.9.4	VFD Training - Describe the manufacturer's additional training courses offered, along with cost and typical locations.	<i>Reference additional documents, such as a course catalogue, as required.</i>
<b>10.10</b>	<b>Delivery</b>	
10.10.5	Proposed delivery timeframe for programmable controller system, HMI, and historian components from date of order.	Average: _____ calendar days Maximum: _____ calendar days (not to exceed 30)
10.10.6	Proposed delivery timeframe for individual motor control equipment from date of order.	Average: _____ calendar days Maximum: _____ calendar days (not to exceed 30)
10.10.7	Proposed delivery timeframe for intelligent MCCs from date of order. Allow 15 days for shop drawing reviews.	Average: _____ calendar days Maximum: _____ calendar days (not to exceed 120)