



Working together with our community

Council-In-Committee Meeting – April 12, 2022

Subject: Sole Source Supplier of Programmable Logic Controllers (PLCs)
Report Number: EIS-22-018
Division: Environmental and Infrastructure Services
Department: Environmental Services
Purpose: For Decision

Recommendation(s):

THAT Council approve the use of Allen Bradley Compact Logix Series Programmable Logic Controllers (PLCs) at Norfolk County's water and wastewater treatment plants as well as at all County booster stations and sewage pumping stations as the preferred equipment.

Executive Summary:

Staff are requesting the approval of Council to establish the Allen Bradley Compact Logix Series PLCs as the preferred equipment for the use at Norfolk County's water and wastewater treatment plants as well as at all County booster stations and sewage pumping stations. Doing this will allow for the water and wastewater treatment plants to continue to function as required in accordance with the facilities Environmental Compliance Approvals and Drinking Water Works Permits and Licences as issued by the Ministry of Environment, Conservation and Parks (MECP) in a safe and cost effective manner. The use of multiple PLCs from different manufacturers would increase the required number of spare parts to be stocked as well as the number of paid subscriptions to different software programs, thereby increasing operating inefficiencies and adding to the workloads of staff.

Discussion:

Norfolk County operates eight water treatment plants for the supply of clean drinking water to its residents and five wastewater treatment plants through a contract with the Ontario Clean Water Agency (OCWA). As part of the operation of these facilities there are many processes which are controlled by computerized systems and the required parameters used to operate the systems are gathered centrally by a programmable logic controller (PLC). This PLC effectively serves as the brains of the operation and feeds the data to the Supervisory Control and Data Acquisition (SCADA) system which turns on and off the operations or processes as needed. The use of these PLCs is essential to safe and economical operations.

There are different manufacturers that market PLCs, all which are unique in the computer programming languages used within the PLC, which directs what it is to do and how it acquires each piece of data. Unfortunately, this programming is controlled by each manufacturer and in order to use it appropriately, an organization must purchase a license in order to undertake modifications to the PLC programming as well as perform troubleshooting. In addition, with each licensed program, are different operating languages which are required to be mastered in order to make changes to the program or in the data that is acquired.

With each PLC purchased and placed into operation, there is also a requirement to guarantee that it can be supported by ensuring that there is sufficient spare parts and other items so that the units can be effectively repaired and placed back into service in an efficient manner. As each PLC controls several major processes which ensures that a function or operation in the facility is properly controlled by that unit, this has direct implications on staff's ability to ensure that we are able to meet our responsibilities set out by the facilities Environmental Compliance Approval and Drinking Water Works Permits and Licences, as well as ensuring that there is not an insurance liability that might be created by a failure in a critical piece of equipment.

Operations staff have been using the Allen Bradley Compact Logix Series PLCs in all applications within the water and wastewater systems. Staff have paid for the licensing to be able to program these PLCs and have assembled a stockpile of appropriate parts to ensure that any breakdown occurring with a PLC is able to be dealt with in an appropriate period of time.

With the recent change in the Operating Authority at our wastewater treatment plants, OCWA is also required to ensure that equipment under warranty continues to be serviced by the licensed agent of the manufacture. OCWA is also required to obtain services over \$10,000 in value in accordance with Norfolk County purchasing procedures. As there are both regular servicing requirements as well as unscheduled repair needs, staff would like to bring the purchasing process for all of the needs under one umbrella, thereby ensuring adherence to Purchasing Policy CS-02. This would require an approval from Council to establish the Allen Bradley Compact Logix Series PLCs as the preferred equipment for the use at Norfolk County's water and wastewater treatment plants.

The funds to support the purchases of new PLCs as well as the required maintenance and repair for these purchases are found in the Operations and Maintenance budgets for the respective operations or within the capital projects. Purchases of new PLCs would follow the usual process depending on the need i.e., a capital project for a new process or from the rate supported budget for that area. The local authorized agent for the sale of Allen Bradley PLCs would be the supplier that staff acquires replacement parts from but, for the installation of new PLCs as part of capital construction projects this would become part of the specification process. Another avenue for the installation of a new PLC would likely come through the use of a qualified electrician who would purchase the new PLC as part of their contracted maintenance and repair services.

Financial Services Comments:

There are no direct financial implications of approving the recommendations within this report, as the primary objective is to ensure policy adherence. Approving the recommendations as read, would allow for Allen Bradley Compact Logix Series PLCs to be considered the preferred equipment to be used in Norfolk County's Water and Wastewater Treatment Plants.

Norfolk County has been using this equipment in applications within the Water and Wastewater systems, and all costs associated with licensing and required parts for repairs have been accommodated within the Approved 2022 Rate Supported Operating Budget. As such, there would be no budget impact to approving the single source procurement of this equipment.

Interdepartmental Implications:

Purchasing Services has reviewed the report and relevant industry background as provided within the report and based on this information, advise that Norfolk County Policy CS-02 Section 4.8.4 and 4.8.5 requires all sole source procurements to be authorized prior to the purchase through resolution of Council. Sole source supply is defined where there is only one available supplier for the required goods or services.

Risk Management has reviewed the report and confirmed that the potential inability to meet regulatory requirements due to a breakdown in operations could result in a liability exposure if the breakdown caused damage or injury to a third-party.

Consultation(s):

Engineering Department, Finance Department, Risk Management and the Purchasing Department

Strategic Plan Linkage:

This report aligns with the 2019-2022 Council Strategic Priority "Build and Maintain Reliable, Quality Infrastructure".

Explanation: It is the County's responsibility to provide water and wastewater services to the residents of Norfolk County in an efficient and cost effective manner and the ability to have the Allen Bradley Compact Logix Series PLCs as the preferred equipment will allow for this, as well as, increasing the efficiency of procuring required services and maintenance in accordance with the Purchasing Policy CS-02.

Conclusion:

Allen Bradley have established themselves as a leader in automation and control as well as having their PLCs being used in a majority of the market in water and

wastewater systems throughout the province of Ontario. An approval for the standardization of Allen Bradley Compact Logix Series PLCs for use at all Norfolk County water and wastewater treatment plants as well as all County booster stations and sewage pumping stations as the preferred equipment will ensure that water and wastewater treatment plants will continue to be operated in both an economically efficient manner and ensure that we are able to continue to meet our regulatory requirements and our Environmental Compliance Approvals and Drinking Water Works Permits and Licences as issued by the Ministry of Environment, Conservation and Parks (MECP) and minimize the risks of future insurance liabilities.

Attachment(s):

None

Approval:

Approved By:
Al Meneses
Chief Administrative Officer

Reviewed By:
Stephanie Davis
Manager, Water and Wastewater Compliance

Prepared By:
L. G. Conrad, P. Eng.
Director, Environmental Services