

OT and Industrial Network Cybersecurity Specialist (Water and Wastewater)

Job Number: 2778

Job Type: Full-Time

Location: 2069 Ottawa St S - Mannheim Water Treatment Plant

Job Category: Information Technology

Number of Positions: 1

Department: SCADA and Operational Technology

Division: Engineering and Environmental Services

Hours of Work: 35. Monday - Friday 8:30 AM - 4:30 PM

Union: Management/Management Support

Grade: Management/Management Support Grade 06

Salary Range: \$91,291.20 - \$114,114.00 per year

Posting Date: May 5, 2025

About Us!

The Region of Waterloo is a thriving, diverse community committed to fostering opportunities for current and future generations. Waterloo Region is part of the Dish with One Spoon wampum, a treaty guiding our commitment to:

Taking only what we need

Leaving some for others

Keeping the dish clean

This agreement underpins our vision, mission, and core value, and reinforces our dedication to meaningful reconciliation and equity.

Waterloo Region is home to over 674,000 residents and expected to grow to nearly one million by 2051.

Guided by our 2023-2027 Strategic Plan, "Growing with Care," we prioritize homes for all, climate aligned growth, equitable services and opportunities and a resilient and future ready organization. Our mission is to provide essential services that enhance the quality of life for all residents, while our core value emphasizes caring for people and the land we share. Join us and be part of a team dedicated to making a meaningful difference in our community.

The Role

Administers the cybersecurity program for water and wastewater operational technology (OT) and supervisory control and data acquisition (SCADA) systems. Implements, configures, coordinates, controls, maintains, supports, and monitors systems as it relates to cybersecurity, including OT/SCADA system-specific cybersecurity policies. Develops documentation related to the OT/SCADA system cybersecurity program, and works with the corporate Information Technology Services (ITS) team and external resources to support cybersecurity in Water and Wastewater Division(s).

Consults and coordinates with ITS staff to ensure compliance with the corporation's cybersecurity program, policies, standards, and corporate technologies, ensuring alignment with Water and Wastewater standards and policies. Acts as a technical resource for projects as it relates to OT/SCADA system cybersecurity. Collaborates with other Water and Wastewater staff to ensure programs, policies and procedures are implemented and followed.

Leads the implementation of the water and wastewater cybersecurity program, including working with ITS and external experts, and providing direction to others.

Duties/Responsibilities

Monitors water and wastewater OT/SCADA system security using corporate and OT-specific intrusion detection/prevention systems (IDS/IPS), security information and event management (SIEM) systems, and other security tools. Works with the ITS team to leverage corporate tools and ensure compliance with corporate ITS programs, guidelines policies and technologies.

Conducts regular vulnerability assessments and penetration testing of OT/SCADA systems to identify and mitigate security weaknesses.

Develops and implements security policies, procedures, and standards specific to OT/SCADA environments, including existing Water and Wastewater and ITS policies, in compliance with industry best practices (e.g., NIST, ISA/IEC 62443).

Responds to, investigates, and mitigates security incidents impacting OT/SCADA systems, including malware infections, unauthorized access attempts, and denial-of-service attacks.

Collaborates with teams in Water and Wastewater, ITS, and Design & Construction to ensure security is integrated into all phases of OT/SCADA system design, implementation, and maintenance.

Supports ITS security awareness programs and provides specific OT/SCADA system security awareness training to others involved in the operation and maintenance of OT/SCADA systems.

Stays current on cybersecurity threats and vulnerabilities impacting industrial control systems (ICS) and OT/SCADA systems, recommends and/or implements appropriate countermeasures.

Maintains detailed documentation of security configurations, incident response procedures, and vulnerability assessments in alignment with corporate ITS programs and standards.

Participates in incident response exercises and simulations to ensure preparedness for cyberattacks. Contributes to the development and maintenance of a comprehensive cybersecurity program for water and wastewater infrastructure and OT/SCADA systems.

Supports and provides direction to OT/SCADA staff to ensure the water and wastewater cybersecurity program is implemented and maintained.

Provides direction and advice to staff at all levels in Water and Wastewater and other intersecting divisions (e.g. Design and Construction, ITS) as needed when collaborating on projects requiring support.

Performs related duties as required.

Knowledge, Skills, and Abilities

Knowledge and skills are normally acquired through a Bachelor's degree in Computer Science, Cybersecurity, Engineering, or related field, plus progressively responsible related experience.

Strong understanding of networking, operating systems, and security technologies with experience implementing and upgrading OT/SCADA technologies focusing on security and architectures (e.g. NIST, Purdue Model).

Expertise with ICS and SCADA architectures and devices, including PLCs, RTUs, networking, and HMIs.

Knowledge of cybersecurity frameworks and standards, including NIST Cybersecurity Framework, C2M2, NIST SP 800-82, and ISA/IEC 62443, and experience developing related policies and procedures.

Experience with security tools such as IDS/IPS, SIEM, vulnerability scanners, and penetration testing tools.

Analytical, problem-solving, and communication skills. Ability to work independently and as part of a team.

Knowledge of regulatory requirements for critical infrastructure protection, including water and wastewater systems.

Mechanical aptitude and analytical and technical skills to analyze hardware and software conditions, probe for information, apply principles, and resolve system problems. Ability to apply information from technical references, periodicals, and seminars to maintain technical knowledge.

Ability to organize time effectively, prioritize work, meet immediate and inflexible deadlines, and achieve results.

Human relations and communication skills to work with end users at all levels of computer skill and knowledge; identify and understand the use of software and hardware to support cybersecurity functions and achieve desired outputs; and participate as an effective team member.

Ability to represent Water and Wastewater interests and provide technical expertise at interdepartmental client meetings, including those involving consultants and contractors.

Ability to read, understand, and apply information found in publications and trade journals, software and hardware manuals, and system design and development documentation to maintain knowledge on cybersecurity technology trends and identify automation opportunities in OT/SCADA systems.

Ability to discuss needs with outside companies, exchange technical application information with Water and Wastewater staff, and communicate technical information to non-technical and technical users and support individuals. Ability to respond to user requests in person or using software, and instruct others on using new and modified equipment and procedures.

Ability to document cybersecurity-related policies and procedures and prepare business continuity, disaster recovery, and monitoring reports.

Ability to flex schedule to meet deadlines, respond to system issues, and provide support to extended and 24/7 operations.

Ability to travel within Waterloo Region.

Ability to support and demonstrate the Region's values.

The Region of Waterloo is an equal opportunity employer dedicated to an inclusive and accessible recruitment process. We actively encourage applications from diverse groups, including Black, racialized, First Nations, Métis, Inuit individuals, women, people with disabilities, and 2SLGBTQIA+ persons, and are committed to equity, diversity, accessibility, and inclusion in the workplace.

For an accommodation request, please contact us and we will work with you to meet your accessibility needs. Alternate formats of this document are available upon request. Please contact the Service First Contact Centre at phone number (519) 575-4400 to request an alternate format, or email talentmanagement@regionofwaterloo.ca.

Please note: candidates will be provided an update on their application. Please check your spam or junk folder occasionally as some candidates have noticed our emails in those folders (Gmail and Hotmail in particular).

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