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Project News

## Robins Air Force Base Upgrades SCADA System to Remotely Monitor Underground Corrosion

By Cynthia Greenwood

Situated next to the small town of Warner Robins on nearly 8,500 acres south of Atlanta in Georgia's heartland, Robins Air Force Base (AFB) is the largest industrial complex in the state. Home of Warner Robins Air Logistics Center and the 78<sup>th</sup> Air Base Wing, Robins AFB possesses Georgia's largest aircraft runway. The base also employs 13,215 civilians and 6,557 active duty men and women, whose salaries inject \$1.4 billion each year into middle Georgia's economy.

Beneath Robins' industrial complex is a vast underground infrastructure that requires constant upkeep. Aided by funding from the Office of the Secretary of Defense (OSD) Corrosion Policy and Oversight Office, the Air Force Civil Engineer Support Agency (AFCESA) is taking steps to improve the maintenance of all underground piping systems, tanks, and water towers. Robins AFB officials have begun upgrading the base's remote-controlled SCADA (supervisory control and data acquisition) systems, currently used to inspect and maintain its power grid, sanitary lift stations, industrial lift stations, and power generators.

Currently, the base's water, electrical, and sewage systems are managed using SCADA technology, said Bill Fowler, Superintendent of Infrastructure at Robins AFB. By enhancing the current SCADA systems, maintenance officials can remotely inspect the cathodic protection (CP) systems that are vital for detecting corrosion on the base's natural gas line, fuel, and water pipe systems. SCADA CP instrumentation includes hardware and radio units that transmit real-time voltage and current readings back to a central monitoring station.

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"The modified SCADA system will allow us to monitor all our underground infrastructure," said Johnny McCranie, Cathodic Protection Technician at Robins AFB. "With the upgraded system, I can now raise and lower the taps to adjust the rectifier output voltage from my office and monitor the test stations to see the readings change in the field."

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McCranie is the only CP expert on base. Twelve years ago, he began researching a way to install a new remote-monitoring system. But the project proved to be too costly and funding was hard to find, McCranie recalled. "Within the last three years we have been able to receive the necessary support and funding from OSD and AFCESA, and I'm seeing the light at the end of the tunnel," he said. "The work being done here will make our cathodic protection system more manageable for one person."

With the help of a remote-monitoring system, McCranie can monitor the entire CP system by himself. The job used to require five people, so the upgraded system will immediately save on manpower costs. "Cathodic protection is very important," Fowler said. "It's going to save Johnny and his contractors a tremendous amount of time in the field. He can check the system every morning and print readings out daily if he wants to."

By conducting routine CP maintenance remotely, Robins' maintenance officials can monitor all metallic underground systems as needed to comply with environmental standards, avoiding potential leaks, spills, costly clean-up, and fines. In addition, McCranie's research and design of functional remote CP monitoring systems will provide prototypical design and installation techniques for all military services under the Department of Defense, said Nancy Coleal, Air Force Facility Corrosion Engineer.