

Customer Success Story: Steam Generator Inspection

Zetec Innovations Help Reduce Steam-Generator Inspection Time by One Full Day

Planning is essential to an efficient steam generator inspection. When that inspection is particularly complex, the best time to plan is before the previous inspection wraps up.

“Some of the most productive and creative in-service inspection planning happens during post-ISI (in-service inspection) briefings, when the team is still assembled and their assessments of the project scope, methods, and results are fresh,” says Scott Hower, Zetec account executive. “As an eddy current technology provider, when we’re in those post-inspection discussions, we can identify ways to use equipment and software to improve performance during the next inspection event.”



Collaborative Approach

Hower recalls working with a customer whose goals included increasing the productivity of the crew and reducing human exposure to radiation during a pressurized water reactor steam generator ISI.

The customer uses an all-Zetec solution that consists of a MIZ-80 eddy current instrument and probe-delivery mechanism; an SM-series robot; and EddyNet software to drive the robotics and acquire the data.

It’s a highly efficient system because the components are designed to work together, Hower said. However, the amount of time it took to schedule and suit up personnel to enter a radiologically contaminated environment in order to reposition conduit nearly offset the productivity gains from the inspection system.

“During the post-ISI briefing we started brainstorming about how to automate certain tasks and work remotely to alleviate the need for a person to go into containment, which would save a substantial number of hours,” Hower explained.

Two New Inventions in 18 Months

As a result, Zetec developed two custom hardware solutions during the 18 months between ISI events.

The first is a conduit switcher, which allows the customer to run multiple calibration standards that are not in-line with the test system.

"We created a Y-splitter in the conduit which allows us to drive the probe forward through a set of calibration standards, pull it back, and switch to another line of conduit like a train in a switching yard," Hower explained. "The customer can continue testing without having to send a person into a radiological area to do the work by hand. It's a simple concept and it helps the customer accomplish its goals to reduce exposure and save man-hours."

The second product is a moveable platform that holds the MIZ-80 tester and probe-pusher device. It allows a technician outside the containment area to automatically guide the instrument and probe pusher to and from the manway opening.

As the robot works its way farther from the entrance to the steam generator, the conduit that connects it to the MIZ-80 can get tight and restrictive. Conversely, when the robot comes back toward the man-way door, the conduit can coil up and become an obstacle.

"Normally, the client would have to send in a person to add a section of conduit to extend it or to move it out of the way," said Hower. "With this remote-controlled sliding platform, the client can keep the conduit nice and taut safely and without direct contact."

Improving Efficiency and Safety

The Y-splitter and moveable platform are simple concepts yet these new solutions helped the client improve the efficiency of three successive ISIs.

"Given the time required for a technician to suit up, enter the radiological area, and do these tasks by hand, we were able to eliminate approximately two hours of inspection downtime each day," Hower said. "That translates to at least one full day in a 10-day inspection period and considerably less radiation exposure to a human being."

A Feather in the Cap

Results like these helped Zetec's client secure additional eddy current inspection business with its end customer.

"The efficiency gains and savings caught the attention of the non-nuclear operations of this particular asset owner and our client has been able to expand its business," Hower said. "It's a big feather in our client's cap and we're proud to play a role as their supplier. It shows the value of tackling inspection challenges as early as possible and including Zetec in the process."



Zetec holds ISO 9001
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certifications



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