



## Remote SST Cold Spray Process Offers Corrosion Protection

### Background

A major Canadian based company that produces radioactive isotopes for the medical imaging industry was seeking a solution for applying a corrosion resistant coating to the outside of a repaired nuclear reactor wall. Previously, a heavy water leak at the base of the reactor vessel prompted a temporary shutdown, which was necessary in order to completely defuel the entire reactor, ascertain the full extent of the corrosion to the vessel, and execute the repairs.

### The Problem

During the assessment and repair stages, the customer was challenged by the restricted access to the repair area. Due to residual radioactivity in the reactor vessel, the repair site could only be accessed remotely from a distance of at least eight (8) meters.

### The Solution

As a solution to the leak repair, the customer used a leading edge welding technology to weld aluminum plates to the interior wall of the reactor. To provide long term corrosion protection, the **SST™ Cold Spray** process was chosen to apply a protective commercially pure aluminum spray coating on the corresponding exterior areas of the reactor vessel where the welding repairs were performed.

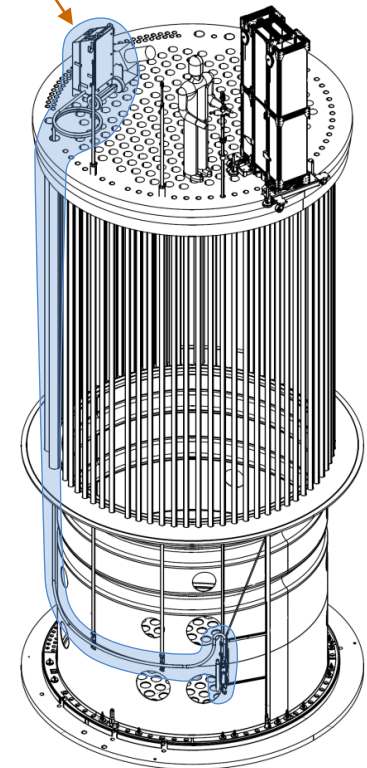
To solve the restricted access issue, CenterLine partnered with an engineering firm that had extensive experience designing and building remote tooling. The combined competencies of the two companies resulted in the development of a practical coating delivery solution. Three standard CenterLine SST Series P Cold Spray Machines equipped with standard UltiFlow™ Modular Nozzles were designed, built, and delivered to be remotely manipulated from the top deck of the reactor. SST custom-designed the CP aluminum powders SST-A5008 and SST-A5001 for this particular coating application.

### Customer Benefits

The customer's operator training and test applications were successful and approved by all governing authorities. The customer is now fully capable of accessing the repair area and remotely applying the necessary coatings on the reactor wall during the planned shutdowns.

If you require more information about this project, please contact CenterLine, the SST Division.

SST Cold Spray System (shaded blue)



Cold Spray Gun Inside the Reactor Annulus