

## Value Delivered

- ✓ Lowered dose rates via fact-based targeted initiatives developed with our understanding of source term
- ✓ Affirmed results after comparison to industry experience database
- ✓ Effective, attentive monitoring of changes from outage to outage
- ✓ Nuclide-specific source term reduction strategies developed & prioritized
- ✓ Accurate measurement of smearable contamination, Co-58, Co-60, & other radionuclides contributing to radiation fields
- ✓ Collaboration with industry-leader RSI
- ✓ Specialized, innovative tool for superior sample collection

## Industry Challenge

Nuclear power plant radiation fields are complex, originating from a wide variety of radionuclides, so an effective source term reduction strategy requires an understanding of the origin of radiation fields across high and low temperature sections of the reactor coolant system. It's essential that gamma spectroscopy measurements be collected using a specific tool, a calibrated, shielded germanium detector with the proper geometry corrections to both identify and quantify radionuclides that affect piping dose rates. It is also vital that the analysis of smear samples is not contaminated by the sample collection tool in order to accurately identify and quantify radionuclides that affect primary system smearable contamination levels.

## ChemStaff Solution

To meet this complex challenge, ChemStaff's experienced professionals expertly perform gamma scans, provide industry-leading primary system smear sampling tools along with secure shipping containers, and coordinate meticulous smear sample analysis at a state-of-the-art off-site laboratory. To achieve outstanding technical accuracy and greater efficiency, ChemStaff collaborates with Radiological Solutions, Inc. (RSI), the industry's premier supplier of gamma scans and primary system smear sampling tools. The innovative smear sample collection tool allows for a more precise sample with its superior control of both the force applied and the area swiped when collecting the smear sample.

Using the results from the gamma scans and smear samples, ChemStaff experts perform a thorough analysis of the data and compare it to other plants maintained in the ChemStaff database to achieve industry best practices. Next, we deliver a detailed report of the results, including nuclide-specific recommendations to reduce source term and radiation fields.

