

## Nuclear Plant, Southeast, USA

### Site Characterization, Remedial Design and Construction, Operation and Maintenance of a Hydraulic Control Barrier

SSi has been providing our client with turn-key strategic environmental consulting services at the plant since 2007. Services include environmental program and site management, site investigations, engineering design services, remedial construction and remedial construction site management.

After identifying tritium-impacted groundwater present in a manway at the Plant in 2007, SSi was tasked to investigate the suspected source. An investigation completed in 2008 concluded that the source was a 60-acre unlined pond currently in use to retain, treat, and discharge surface water runoff collected at the plant. Tritium impacts were documented in the shallow groundwater surrounding the pond. SSi developed a conceptual site model and evaluated remedial alternatives to mitigate the potential for off-site migration of the tritium-impacted groundwater toward a nearby marine estuary environment. The selected remedial alternative was the installation of a hydraulic barrier to be constructed downgradient of the pond that would intercept and remove the impacted groundwater. SSi installed a total of 92 groundwater extraction wells beginning in the fall of 2008. Hydraulic testing was conducted for each well to ensure that the capture zones for all wells would overlap. SSi designed the extraction well pump and control systems and provided engineering input to the design of a new collection system and lined holding pond. Following construction, SSi directed system startup and shakedown activities and was contracted to operate and maintain the system for the first three years of operation. SSi currently serves in a consulting capacity for system operation and maintenance.



#### Project Highlights

- Developed a comprehensive regional and site-specific hydrogeologic conceptual site model.
- Assisted with Community Outreach efforts to local residents.
- Developed and evaluated remedial alternatives.
- Collaborated with Federal and State regulators to achieve consensus on proposed actions.
- Fast-track design/implementation of the selected remedial alternative.
- Turn-key services provided including site characterization, remedial alternative evaluation, remedial design, and operation and maintenance.

