

# When predictability matters, choose SGT.



The Steam Generating Team (SGT), a joint venture between Framatome and United Engineers & Constructors, is the leader in the heavy component replacement market for nuclear power plants and the only company that has performed a steam generator replacement in North America over the past eight years.

Our award-winning experience and unparalleled expertise have made us the industry's major plant modification leader for over a quarter of a century with an established reputation as a go-to for major EPC projects, fleet programs and plant modifications.

SGT's planning, scheduling, construction, and project management processes support its ability to quickly react to emergent work, adapt to client requirements and successfully implement substantial projects that impact critical path or outage duration.

From initial project scoping to final installation, SGT has the people, the resource flexibility and the knowledge base to plan and implement your project with predictable results.

## Significant Project-Related Experience

- Once-through, recirculating and two-piece CANDU SGRs
- Containment openings
- Temporary supports
- Plant mods including platforms & piping systems
- Rigging expertise
- Structured to work multiple outages in parallel

## Containment Openings

At some plants, an opening in the containment is required. SGT has created and restored openings in concrete containments with steel liners and concrete secondary containments with steel primary containments. These concrete containments have included post-tensioned configurations in addition to standard reinforced concrete.

## Products & Services

- Major component replacement
- Major plant modification projects
  - Proven performance delivering large, complex nuclear projects
- Groups of modifications
  - Manage interface of modifications with overlapping locations, systems, implementation times and space
- Engineering, procurement and construction (EPC) projects
  - Flexibility for either near-turnkey involvement or a more limited role as integrated organization with site team
- Fleet programs
  - Provide consistency, savings from repeated implementation and the efficiency of a common management team

# Project Management

## Excellence in Safety

SGT's primary goal is ZERO safety events, achieved through:

- Comprehensive job planning with a focus on safety
- Establishing and reinforcing a culture of working safely throughout the organization
- Safety incorporated from conceptual design through start-up
- Personal accountability and caring attitude for co-workers
- Real time observation program
- Utilizing human performance tools, such as STAR, pre-job briefs and two-minute drills

SGT achieved ZERO lost-time accidents or OSHA recordable injuries while working more than 1-million-man hours during three SGR outages.

## Emphasis on Quality

SGT insists on first-time quality through:

- Continuous improvement program
- Readiness reviews
- Technical quality reviews

## SGT Program & Processes

SGT prides itself on development and continuous enhancement of its proven programs and processes, ensuring quality performance, predictable outcomes and the flexibility to adapt to customer needs.

SGT has a proven track record for successful delivery on EPC projects:

## Engineering

- Engineering change packages
- Containment analysis and design
- ASME Section III (Div 1 and Div 2) and Section XI
- Seismic analysis
- Dynamic loadings
- Natural phenomena evaluations
- First-of-a-kind designs

## Procurement

- Nuclear safety and non-safety materials
- Equipment and components
- Warehouse management

## Construction

- Field engineering and planning
- Welding
- Rigging and handling
- Civil/concrete
- Structural steel
- Mechanical piping
- Electrical/I&C
- Scaffolding/shielding



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## ISFSI Complex Developments

- Completing engineering change packages
- Developing or expanding the ISFSI site
- Designing and constructing new security buildings and systems

## Program Support

- Subsequent license renewal modifications
- Programmatic approach to mod evaluation and implementation
- Integrated design and construction option evaluation
- FLEX modifications
- Providing consistency in fleet modifications
- Supporting economically competitive major projects

## Safety-Related Concrete Work

- Restore degraded safety-related concrete
- New or modified structures

## Emergent Work Responses

SGT is able to quickly respond to emergent needs by:

- Deploying experienced personnel
- Interacting with the on-site team
- Assessing the situation quickly and moving forward with congruent engineering and implementation efforts

## Diverse Plant Modifications

SGT has designed and installed many modifications, such as:

- Removing equipment or restraints
- Rerouting instrumentation lines and electrical cable
- Modifying plant piping
- Increasing blow-down capacity
- Modifying platforms
- I&C modifications
- Modifying existing plant structures
- Constructing new permanent structures
- Replacing major components



# Award-Winning Projects

## Power Engineering Nuclear Project of the Year

- FPL, Turkey Point 3 and 4 RVCH Replacement
- Entergy, ANO 1 SGR and RVCH Replacement
- St Lucie 2 SGR (Diablo Canyon 2 SGR – Runner up)
- Diablo Canyon 1 SGR
- Waterford 3 SGR & RVCH — Finalist

## ENR/McGraw-Hill Construction Energy Project of the Year Award

- Callaway SGR
- Salem 2 SGR — Finalist
- Waterford 3 SGR & RVCH — Finalist

## Power Magazine Top Plant

- Diablo Canyon 1 SGR
- Waterford 3 SGR & RVCH

With over 25 years of industry-recognized experience, SGT has established world-record outage duration benchmarks for all three PWR NSSS designs. We have successfully completed 26 SGR, nine RVCH replacements and one pressurizer replacement with two additional SGR under contract.

Plant	Year <sup>1</sup>	OEM <sup>2</sup>	CS	SGR <sup>3</sup>	RVCH	CO <sup>6</sup>	Two-piece
Completed Projects							
Point Beach 1	1984	W	W	•			•
DC Cook 2	1988	W	W	•			•
Catawba 1	1996	W	BWI	•			
Point Beach 2	1996	W	W	•			•
McGuire 1	1997	W	BWI	•			
McGuire 2	1997	W	BWI	•			
Salem 1	1997	W	W	•			
St Lucie 1	1997	CE	BWI	•		•	
Indian Point 2	2000	W	W	•			
Calvert Cliffs 1	2002	CE	BWI	•			•
Calvert Cliffs 2	2003	CE	BWI	•			•
Oconee 1	2003	B&W	BWI	•	•	•	
Oconee 3	2003	B&W	BWI		•		
Oconee 2	2004	B&W	BWI	•	•	•	
Oconee 3	2004	B&W	BWI	•		•	
Prairie Island 1	2004	W	Framatome	•			•
Turkey Point 3	2004	W	Framatome		•	•	
ANO 1	2005	B&W	Framatome	•	•	•	
Callaway	2005	W	Framatome	•			
St Lucie 1	2005	CE	Framatome		•	•	
Turkey Point 4	2005	W	Framatome		•	•	
St Lucie 2	2007	CE	Framatome	•	•	•	
Salem 2	2008	W	Framatome	•			
Diablo Canyon 2	2008	W	W / ENSA	•			
Diablo Canyon 1	2009	W	W / ENSA	•			
TMI 1	2009	B&W	Framatome	•		•	
Waterford 3	2012	CE	W / ENSA	•	•	•	
Sequoyah 2	2012	W	W / DOOSAN	•		•	
Bruce 6	2021	AECL	BWXT	•			
Watts Bar 2	2022	W	W / DOOSAN	•		•	
In-Progress Projects							
Bruce 3	2024	AECL	BWXT	•			•
Bruce 4	2025	AECL	BWXT	•			•

<sup>1</sup>Year Date of replacement outage  
<sup>2</sup>OEM NSSS Supplier  
<sup>3</sup>CS Replacement Component Supplier

<sup>4</sup>SGR Steam Generator Replacement  
<sup>5</sup>RVCH Reactor Vessel Closure Head replacement  
<sup>6</sup>CO Containment Opening required



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