

Weld Engineering & Services

Challenge

Utilities need proven solutions they can implement with confidence for materials degradation.

Solution

Framatome's broad selection of welding systems and services provides the technology and skills to meet your most demanding materials management challenges. We have innovative, advanced technology and experience in the design, fabrication, inspection, and repair of nuclear power plant components and equipment — ranging from reactor vessels, steam generators, pressurizers, reactor coolant piping, supports and restraints to the smallest pressure boundary items. We offer complete services ranging from manual welding to remote-controlled operations for even the most challenging welding scenarios. Plus, our inventory of ASME Code safety filler metal and wide array of weld procedures and qualifications enables us to deploy rapidly and perform responsive, safe repairs in emergent situations.

Our welding procedures include various ambient temperature and conventional temper bead methods, pipe weld overlays, hyperbaric chamber GTAW and GTAW narrow groove welding. In fact, we were the first to perform ambient temperature temper bead overlay at a U.S. plant in 1997. In addition, our diversified portfolio of ASME Section III/XI-qualified welding processes includes SMAW, manual and machine GTAW, PAW, GMAW and FCAW. Moreover, we hold "N," "NA," "NPT," and "NS" ASME Certificates of Authorization and the "NR" National Board Certificate of Authorization.

These certificates, combined with our knowledgeable and experienced personnel, ensure a better and more comprehensive working relationship with our customers, plus rapid and accurate solutions to repair and design modification challenges.

Qualified welding engineers and welders to assist you from engineering to execution.

**Your performance
is our everyday commitment**



Customer benefits

- All-in-one source saves time
- Field-proven technology enhances reliability
- Remote capabilities reduce costs, risk, time and dose
- Full in-house engineering support augments your plant requirements
- Machine or manual welding options tailored to meet your specific needs
- Dedicated Technical Training Center for mockups, tool qualification and crew training
- Licensed facility refurbishes or decontaminates specialized tooling
- Full in-house NDE support
- Active members of various code and industry standard writing organizations

Weld Engineering Support

At Framatome, we are more than just processes and tooling. We retain a core group of qualified welders and a large staff of welding engineers with extensive field experience — all capable of assisting our customers during critical welding activities. We utilize industry experts in material science to provide a complete package from engineering to execution.

- Procedure qualification development
- Welder qualification
- Expert code interpretation
- Destructive evaluation metallurgical analysis
- Failure analysis
- A&C field engineering support
- Fabrication oversight
- SME root cause analysis
- Materials selection expertise
- Site weld engineering augmentation
- Extensive background in 52 alloy weld metal development
- Prototype testing
- Craft training
- Interface with all levels from work crew to management
- Independent goal-oriented oversight

Added value for utilities who need welding support & access to top talent in a limited resource pool



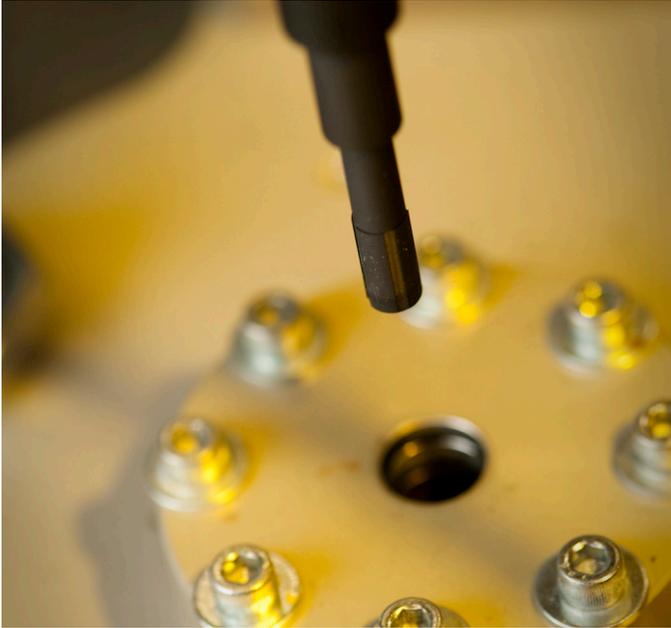
Craft Welders

Framatome also maintains a dedicated core group of high-quality weld leadership at all times, offering your plant:

- Access to union and non-union resources with the highest capacity for excellence and performance
- Top tier welders
- Highly trained & qualified personnel
- Elimination of customer reliance on untested, off-the-bench resources
- Independent support to get projects back on track and schedule
- Task ownership
- Enhanced site support

Advanced Repair Technology Saves Time; Enhances Reliability

Our innovative equipment and processes enable us to repair multiple penetrations simultaneously, reducing valuable schedule time and radiation exposure. These processes are applicable to all PWR designs and most BWR designs, and readily adaptable to meet specific needs at your plant. Our repair approach is qualified to the ASME Code and 10CFR50 Appendix B to ensure reliability and satisfy regulatory requirements.



Specialized Remote Machining and Welding

We are the most experienced vendor in specialty welding and engineered machining services. Our code experts and the industry's most respected, accomplished team of welding engineers and field welders can perform a full range of services to meet your needs:

- Custom designed machining equipment
- Conventional machining
- Electrical Discharge Machining (EDM)
- Remote threading
- Roto peening
- Cavitation peening
- Thermal cutting
- Custom designed welding equipment
- GTAW, GMAW, PAW, SMAW, FCAW Processes
 - Special welding processes
 - Ambient temperature temper bead
 - Narrow groove
 - Weld overlays
 - Weld inlays/onlays
 - High-deposition

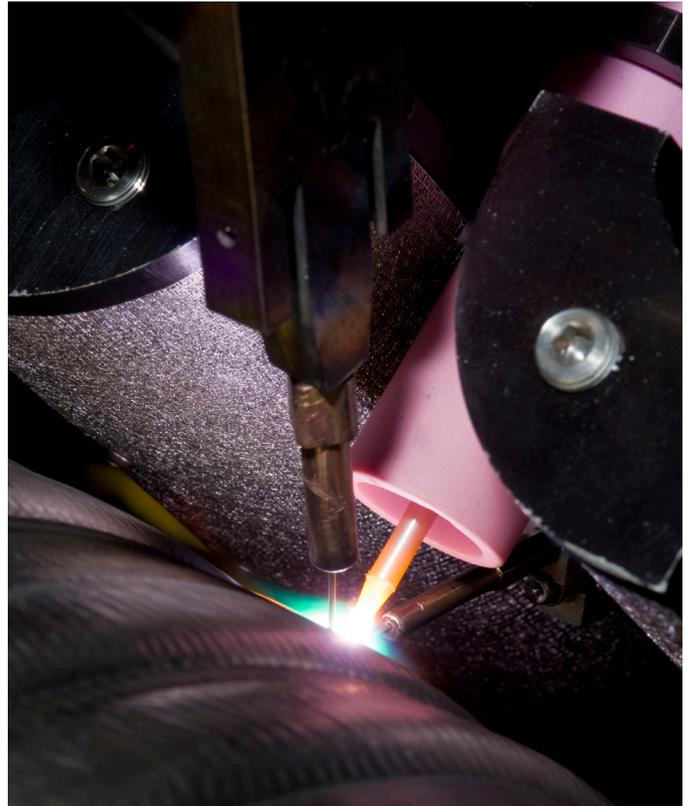
In addition, our Fiber-Optic Remote Weld System allows simple containment penetration with operations outside of containment.



Full-Scale Mockup Capabilities

We have the necessary facilities to perform equipment development, qualification and training on full-scale mockups. In fact, our exclusive Technical Training Center features full-scale pressurizer and upper reactor vessel head mockups to train welders and welding operators prior to site deployment for modifications and repairs to nozzle penetrations.

We also feature a full-scale mockup of a lower reactor vessel head for personnel training and innovative tool development for bottom-mounted instrumentation nozzle repairs and modifications. We have the facilities to perform this qualification and training with contaminated equipment.



Decades of Experience

Our staff includes welding and mechanical engineers, plus other field-proven technical personnel, with more than 180 combined years of experience in the nuclear power plant component service industry. Our focus on responsiveness means we are there when you need us. That's your assurance of advanced technology and expertise delivered on schedule — and on budget.

Contact:

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