15th Annual
Vendor/Contractor Profile Special Section

Pages 44–147 contain advertisements and "advertorial" information about products and services provided by the companies in the nuclear industry listed below:

OUR COMPANY

WMG, Inc. was founded in 1979 and is a qualified small business located in Peekskill, New York. We provide professional nuclear engineering services and software to government and commercial clients.

WMG's forte is radioactive materials management. We provide our customers with characterization, processing, packaging and shipping of radioactive materials. We are experts in the myriad regulations that govern the transport and disposal of low level radioactive waste (LLRW). We have disposed of various radioactive materials, including large components, contaminated equipment, GTCC waste, mixed waste, transuranic (TRU) waste, LLRW, filters, sludge/resins and spent fuel. Our technical staff has worked at virtually all the U.S. nuclear power plants and at several government facilities, such as West Valley, Savannah River, Hanford, Rocky Flats, and Fernald.

What makes WMG unique? We help our clients manage their most challenging radioactive waste issues. Our combination of nuclear engineering experience, software design capability and project management skills are unparalleled in the industry. This breadth and depth of experience at operating facilities is applied to every assignment we undertake, be it a comprehensive evaluation of a client's practices or providing the design for licensing of a reactor vessel shipping package.

Our many clients within the nuclear industry have recognized WMG's reputation as a high quality provider of expert nuclear services and radioactive materials management. We are well respected by government agencies, including the United States Nuclear Regulatory Commission (NRC), Department of Energy (DOE), Department of Transportation (DOT) and a number of additional regulators, as well as the operators of the various radioactive waste processing and disposal facilities. WMG also received a Small Business Award for Excellence from the U.S. Small Business Administration for our decommissioning work at the University of Virginia.

OUR SERVICES

WMG's expertise extends to the following disciplines:

Engineering Support

WMG provides a full spectrum of technical services to support operating or decommissioning of a nuclear facility. Our projects have ranged from shielding design and analysis of a spent fuel transfer system to development and implementation of plans for dispositioning unique forms of radioactive waste. WMG also provides on-site project management services for fuel pool cleanout, dry fuel storage, and large component removal projects.

Major Component Disposition

WMG supports the disposition of major nuclear components such as reactor vessels, reactor pressure vessel heads, steam generators, pressurizers, reactor coolant pumps and motors, heat exchangers, tanks, fuel pool racks and other large radioactive components. Our services include characterization, package design and supply, transportation, and processing/disposal. We typically provide fixed-price turnkey solutions.

Irradiated Hardware/Spent Fuel Pool Services

WMG provides a full spectrum of technical services for cleanup of spent fuel pools, including project planning, characterization, and transport and disposal documentation for waste shipped for disposal.

D&D Support

WMG has supported all commercial D&D projects with characterization services for disposition of the reactor vessel and internals. We have prepared D&D, waste management and ALARA plans; provided cost estimating, design and licensing support for large component packaging; planned cavity and spent fuel pool cleanup; acted as liaison with regulatory agencies; and supplied packaging and transport for processing/disposal. We have also provided on-site support for large component and waste management projects.

Package Licensing and Permitting

WMG provides turnkey technical support for NRC licensing of both spent fuel and waste shipping packages, and DOT approval of exempted packages.

Regulatory Training

WMG provides a series of training courses, which address the regulatory and practical aspects of radioactive materials processing, packaging, shipment and disposal.

OUR SOFTWARE

WMG has been the leader in software development for the nuclear industry since 1982. We have provided computer program applications to the commercial and government sectors. Our RADMAN™ software is used at virtually all operating nuclear power plants and at several DOE and commercial waste processing facilities.

Our standard commercial software includes:

- RADMAN™
- OSM™
- MegaShield™
- FILTRK™
- RAMTRK™
- RAMSHP™

WMG also provides customized software for specific client needs. These customized programs incorporate WMG's many years of experience in characterizing, manifesting and managing all forms of radioactive materials including spent fuel.

WMG

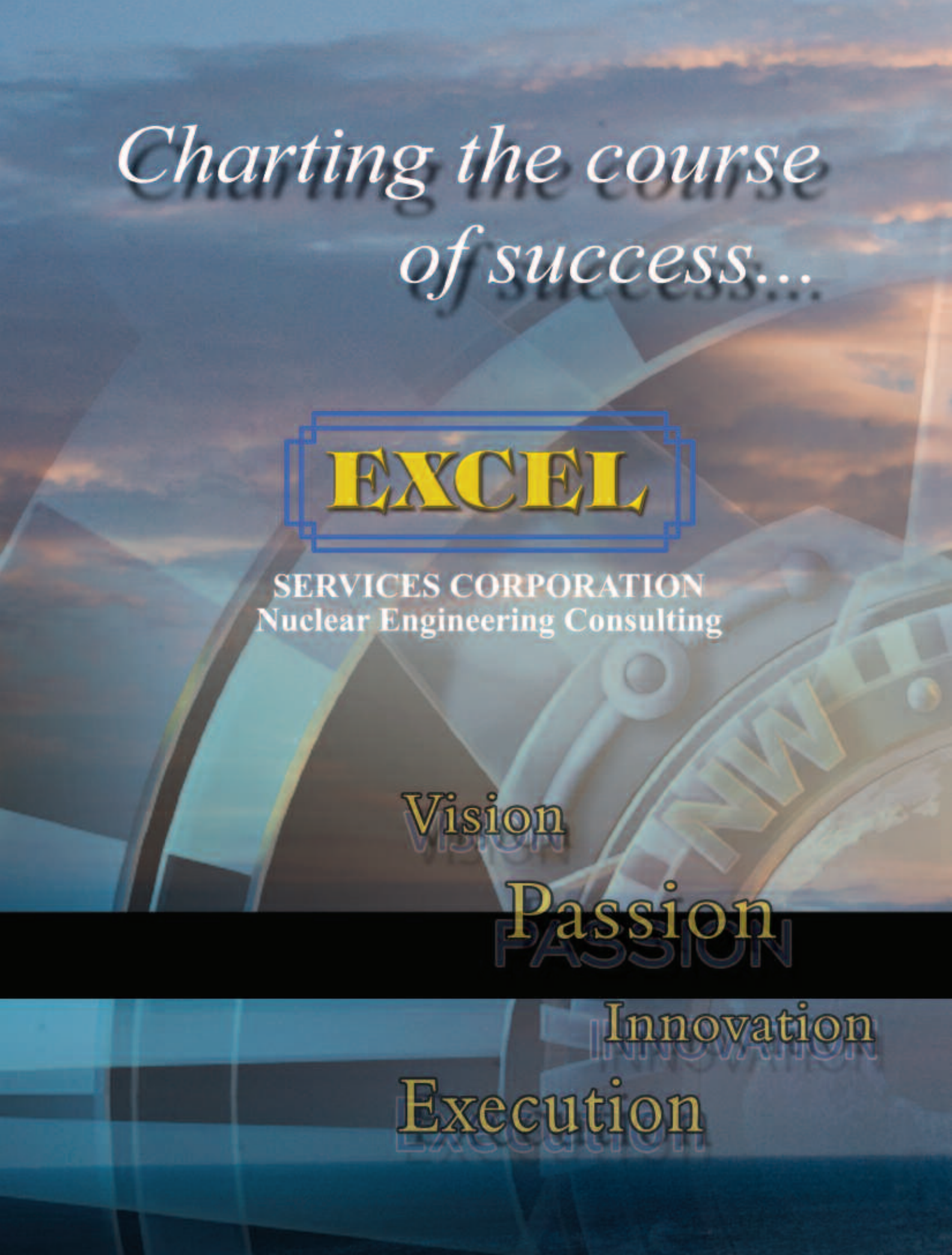
Celebrating 30 Years of Value-Added Service to the Nuclear Industry

Regulatory Support • Demonstrated Decommissioning Capabilities
Expert Shipping Services • Irradiated Hardware Management
Cutting Edge Software • Innovative Packaging Designs

RADMAN™

PROSHIPPER™

WMG, Inc. • 16 Bank Street • Peekskill, NY 10566 • www.wmginc.com • Tel: 914-736-7100 Fax: 914-736-7170


Charting the course
of success...
EXCEL
SERVICES CORPORATION
Nuclear Engineering Consulting
Vision
Passion
Innovation
Execution

EXCEL's first client services included providing plants with experienced individuals to support general operating plant licensing issues and to support the initial licensing of new power plants.

Since then, with 24 years of services, **EXCEL** has earned the reputation of the premier company providing diverse licensing, operations, and engineering services, which has made **EXCEL** uniquely qualified to manage large, complex projects supporting both the current fleet of reactors and the proposed fleet of new reactors.

EXCEL continues to provide innovative solutions for complex operational, engineering, safety and regulatory issues, and provides insightful consultation to senior utility executives and committees striving to maintain and enhance the quality and safety of their organization. These services have proven to be extremely beneficial to the nuclear facilities and the regulatory agencies both in the U.S. and internationally as well.

This cumulative experience, expertise and knowledge ensure the development of the best quality product in a cost effective manner and in accordance with the highest standards of professional excellence.

Vision
Fueled by Passion
Created by Innovation
....with Excellence in Execution

Services

Domestic/International

Improved Technical Specification Conversions
Operations, Maintenance, Engineering Support
Logic System Functional Testing Evaluation
24 Month Fuel Cycle Interval Extension Gl-91-04
Security Assessments
Fire Protection
Procedure Upgrade
UFSAR Upgrade
License Renewal
Power Uprate
Security Plans
Security Management
Construction Oversight
New Build Project Management Tools
Due Diligence
General Licensing Support
Steam Generator Replacement
General Part 52
Early Site Permitting
Combined Construction and Operating License
ITACC
Licensing for Fuel Enrichment Facility
Department of Energy Facilities Support
Licensing for Test Reactors both Domestic and International
Design and Licensing Basis Recovery Projects
Probability Risk Assessment and Risk Management
Nuclear Knowledge Management Consulting
Nuclear Knowledge Management Certification Course
Licensing for the Yucca Mountain Repository
Decommissioning
Environmental Qualification Evaluations
Preventive Maintenance Optimization
Reliability/Availability Studies
Environmental Report Site Evaluation
Setpoint Calculations
Fleet Setpoint Control Programs
Instrumentation Licensing

Selected International Projects

Technical Specification Licensing Pilot- Germany
Compliance Matrix for PBMR Project- South Africa
Regulatory Management Group Development-South Africa
Licensing and Regulatory Support- Finland, Sweden, Mexico, South Africa, Switzerland, UAE
Technical and Regulatory Support- Canada, United Kingdom, South Africa, Switzerland, UAE
Decommissioning and Decontamination- United Kingdom
Regulatory Initiatives-Russia, France, Bulgaria, Brazil, Argentina, Germany

11921 Rockville Pike, Suite 100
Rockville, MD 20852 USA
Telephone (301) 984-4400 - Facsimile (301) 984-7600
Web: www.excelservices.com

for nearly 25 years

CURTISS WRIGHT
Flow Control Company

Supporting operating reactors and new build

For more than 50 years, the global nuclear power industry has relied on the Nuclear Group of Curtiss-Wright Flow Control Company for components, systems and solutions that set the benchmark for safety, quality, innovation and high performance.

Enertech
Enertech is an engineering, manufacturing, distribution and service company that provides a broad range of products for nuclear power plants including: valves, actuators, pumps, heat exchangers, instrumentation, fluid sealing products, snubbers, maintenance, repairs and engineering services. Enertech's team of nuclear experienced application, product, and design engineers ensures that the right product is installed in the right service.

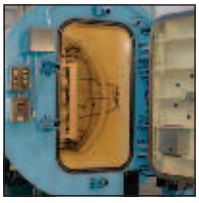
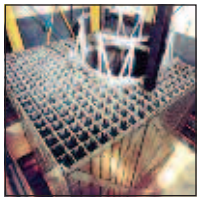
Nova Machine Products
Nova is a leading manufacturer/supplier of safety-related fasteners and precision machined components, HydraNut bolting and tensioning solutions, PlasmaBond preventive wear and galling coating, construction products, and related inventory management services. Nova offers reverse engineering services and engineering assistance to help plants address their obsolete parts issues.

Scientech
Scientech's Technical & Hardware Solutions Group provides instrumentation, electrical and mechanical hardware for nuclear and fossil plants to address obsolescence and improve efficiency and safety of operations. The Utility Services Group provides utilities with specialized analysis, technical consulting and engineering solutions to assist in modernizing plants, improving operating efficiency and responding to regulatory requirements.

Trentec
Trentec is internationally recognized as the leader in providing solutions for nuclear facility replacement parts, commercial grade dedication and equipment qualification, airlock, hatch and door manufacturing, as well as diamond wiresaw concrete cutting services and equipment.

Curtiss-Wright
Flow Control Company
Nuclear Group

Enertech
714.528.2301
Nova Machine Products
216.267.3200
Scientech
208.529.1000
Trentec
513.528.7900



New Build…Old Reliability

The nuclear-focused companies of Curtiss-Wright have been continuously providing innovative, value added solutions to the nuclear power industry since its birth in the 1950's. Our products helped power the USS Nautilus, the world's first nuclear powered submarine, and contributed to the startup of the nation's first commercial nuclear power plant at Shippingport in 1958.

We have played a major role in supporting new construction, plant maintenance, uprates and plant life extension for over 50 years. At Curtiss-Wright Flow Control Company, we don't just provide products; we solve problems and create systems that push the frontiers of technology, with innovations that set the standards for the future.

- Nuclear Quality and Commercial Grade Components
- Plant Performance Software and Systems
- Engineering Services
- Fabrication, Machining and Build-to-Print
- Equipment Qualification and Harsh Environment Testing

Nuclear Group

EES Engineering & Services
EMD
ENERTECH
Farris Engineering
NOVA
SCIENTECH
Solent & Pratt
Target Rock
Trentec

CURTISS WRIGHT
Flow Control Company

714-982-1898
newbuild@curtisswright.com

TRIVIS Inc.
The complete solution provider

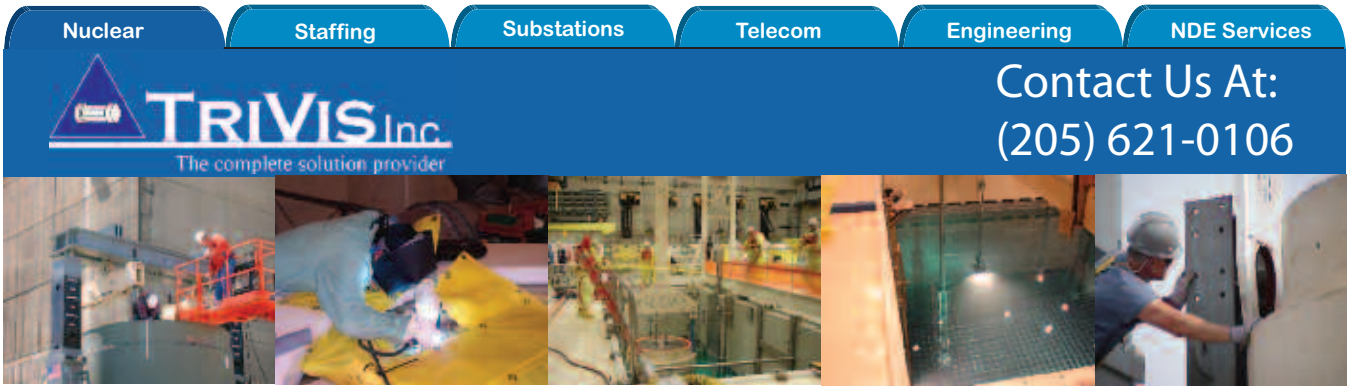
TRIVIS Staffing

Based on the recent NRC's final rulemaking that amends the security requirements for power reactors, TriVis has strategically positioned itself to be a significant resource for utilities that are in need of temporary staffing assistance to achieve compliance to this final rule by March 31, 2010. Not only is TriVis currently assisting a number of utilities with the Project Management expertise needed to complete these security/safety upgrades in a timely manner, we have a cadre of highly experienced personnel in reserve that stand ready to assist other utilities when and where they are needed. Our personnel have in- depth knowledge of the new security requirements amended and added in 10CFR Parts 73 and 50 with particular emphasis in:

- 10CFR 73.54 – Protection of digital computer and communication systems and networks (i.e. cyber security requirements)
- 10CFR 73.55 – Physical security enhancements (i.e. CAS and SAS)
- 10CFR 73.58 – Safety/Security requirements for nuclear power reactors
- 10CFR 50.54 (hh) – Mitagative strategies and response procedures for potential or actual aircraft attacks

Whether it's Security Upgrades, Extended Power Uprates, License Renewal, Procedure Upgrades or HLW Storage, your projects demand the very best. At TriVis, we take great pride in meeting and exceeding your demands.

Call us at 205-621-0106, email staffing@trivisinc.com or visit us at www.trivisinc.com.



Spent Fuel Management

TriVis provides the complete solution for high level nuclear waste. We develop and deliver products that address the needs of any organization with high level nuclear waste. Our services cover the entire range of spent fuel storage needs from procedure and program modifcations to providing turnkey solutions. We will provide the total management to design, construct, and implement any activities associated with your Independent Spent Fuel Storage Installation (ISFSI).

TriVis personnel are nationally known for their experience in establishment of an ISFSI. Not only do we possess the skills necessary for 10CRF72 facilities but we also represent decades of experience in the 10CFR50 environment. In addition, we have significant experience with NRC regulations; a key to understanding the climate under which our customers function.

TriVis Individual Products

Spent Fuel Project Management - Project Planning Consulting and Project Implementation Consulting
Licensing - 10CFR50 Reviews & Support and 10CFR72 Site (& subpart K) Licensing
Spent Fuel Loading Services - Turnkey Loading (includes all procedures & training), Operational Consulting, and Supervision
Facility Engineering - Facilities Design, Engineering Analysis, and Support Equipment Design
Transportation Services - Planning, Coordination & Integration
Procedure Development - Administrative, Operating & Licensing
Training Programs - Program Development and Program Delivery
Dry Cask Procurement - Cask Procurement Evaluation & Oversight, Support Equipment Procurement
Facility Implementation - Preoperational Testing and Construction

P.O. Box 1149
Pelham, AL 35124

"A Woman Owned Firm"

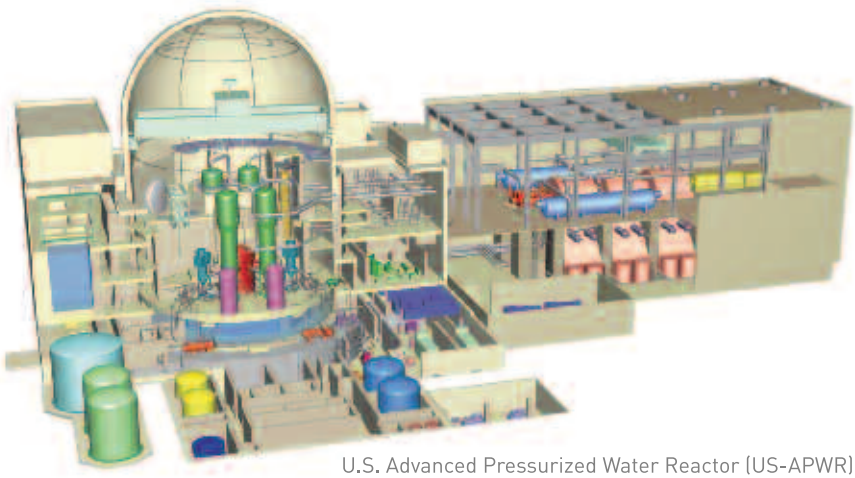
www.trivisinc.com

US-APWR Is Next Mitsubishi Milestone

Since 1970, Mitsubishi Heavy Industries Ltd. (MHI) has built 23 nuclear power plants in Japan using Pressurized Water Reactor (PWR) technology. In addition, 1 plant is under construction. The company has improved on its PWR technology through operational experience as well as through extensive research and development. While Mitsubishi's technologies have evolved, the company's goal has remained constant: to provide nuclear power plants with levels of reliability, safety, economy, operability and maintainability unparalleled in the world.

Mitsubishi is a fully-integrated nuclear power plant supplier, providing planning, design, manufacturing, construction and plant maintenance for its utility customers. In addition, the company provides a number of replacement components to utilities in Japan, Europe and the United States, including reactor vessel heads, control rod drive mechanisms, pressurizers and steam generators.

MHI has introduced its U.S. Advanced Pressurized Water Reactor (US-APWR), a design that is more efficient with greater output than any previous power plant built by any company in the world. Luminant, a competitive power generation company, has selected the US-APWR design for two proposed new units at its Comanche Peak Nuclear Power Plant. Comanche Peak Nuclear Power Company will own and oversee development and construction of the proposed new units. Recently MHI and Luminant announced their intention to negotiate the engineering and procurement contracts as well as a preliminary construction plan necessary for the proposed expansion of the Comanche Peak Nuclear Power Plant. Other US utilities are expected to follow suit. To work with U.S. utilities, MHI has established Mitsubishi Nuclear Energy Systems Inc. in Washington, D.C. The motto of MHI is "New Engineering Excellence." This philosophy is reflected in the company's products and its leading-edge research into the technologies of the future. MHI goes beyond merely refining existing technologies; instead, MHI engineers integrate diverse technologies based on totally new concepts in pursuit of ever-more advanced solutions.



U.S. Advanced Pressurized Water Reactor (US-APWR)

The main specifications of the US-APWR are:

Electric Power	Approx. 1,700 MWe
Core Thermal Power	4,451 MWt
Reactor Fuel Assemblies	257
Reactor Fuel	Advanced 17x17, 14 ft.
Active Core Length	4.2 meters
Coolant System Loops	4
Coolant Flow	2.75×10^4 m^3/h/loop
Coolant Pressure	15.5 MPa

Features of the US-APWR include:

Enhanced Safety

- Four-train safety system for enhanced redundancy.
- Advanced accumulator.
- In-containment refueling water storage pit.

Enhanced Reliability

- Steam generator with high corrosion resistance.
- Internals with neutron reflector.
- Reactor with top mounted ICIS.

Attractive Economy

- A large core with high electric output.
- Building volume per MWe that is four-fifths that of other four-loop PWRs.

More Environmentally Friendly

- Reduced occupational radiation exposure.
- Capability to use mixed oxide (MOX) fuels.

What is UniStar Nuclear Energy?

UniStar Nuclear Energy is a developer of a standardized fleet of Generation III+ nuclear power plants–specifically, AREVA's 1600 MW US EPR™ reactor. UniStar is unique in that we created a standardized system with multiple partners to optimize design, licensing, construction, training, ownership, through to operation.

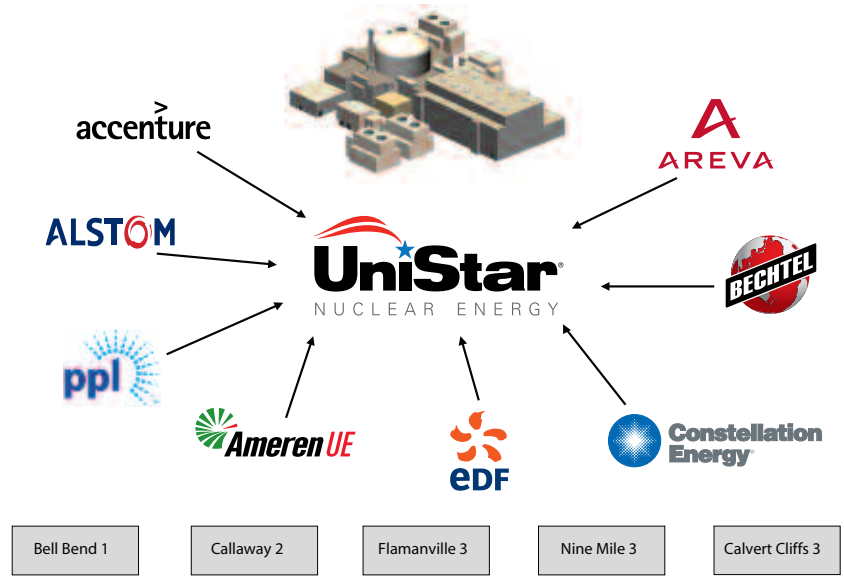
The Story behind the AREVA EPR™ Design

AREVA is the world leader in nuclear production and services, providing nuclear steam supply systems (NSSS) to more than 100 pressurized water reactors (PWRs). The EPR™ design is the first Generation III+ technology to be built in the world. By the time a U.S. EPR™ reactor is built, there will be at least four in operation in Europe and China, providing invaluable lessons in construction and operation.

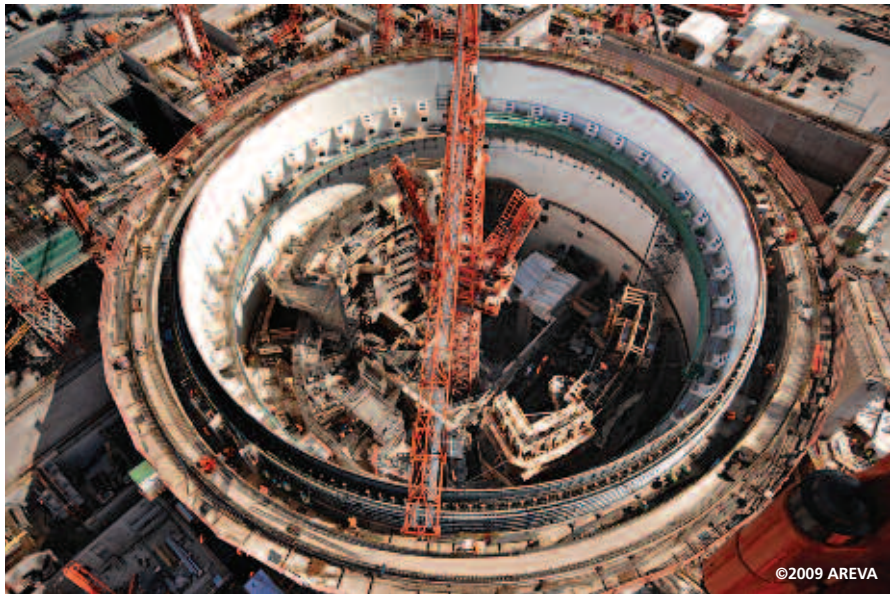
UniStar Benefits

- Flexible ownership participation
- Direct operational involvement
- Uncompromised nuclear safety
- Multi-plant "fleet" operating and economic efficiencies

UniStar Partners



The Reactor Pressure Vessel integrated nozzle shell ingot. Forgings must be ordered many years ahead of time.



AREVA EPR™ reactor now under construction in Finland (June 2009).

AREVA

UniStar NUCLEAR ENERGY

EDF's Flamanville construction site for a new EPR™ nuclear energy facility (June 2009).

Your Partner for New Nuclear Energy. Today.

For those companies looking at new nuclear, UniStar Nuclear Energy provides economies of scale and scope through coordinated and systematic development of a standardized fleet of AREVA EPR™ new nuclear energy facilities.

To find out more about UniStar, call 410.470.4400 or visit **www.unistarnuclear.com**.

For information on AREVA's U.S. EPR™ technology, visit **www.us.areva.com**

For monthly photo updates of construction progress, send your e-mail address to **info@unistarnuclear.com**.

EPR™ by AREVA

UniStar® NUCLEAR ENERGY

Building Certainty

Leadership by Example

Leading the Way in Nuclear Power

As a proven leader in the nuclear industry, Shaw has offered a broad range of services for more than 60 years. A *Fortune 500* Company, Shaw ranked No.1 in Power Design by ENR in 2008 and 2009.* Shaw employs 26,000 staff in 150 locations worldwide.

New Plant and Reactor Design and Construction

From the detailed design of the National Enrichment Facility in New Mexico, to design and construction of the Mixed Oxide Fuel Fabrication Facility in South Carolina, to engineering support for the Lungmen nuclear power plant in Taiwan, Shaw can perform virtually every aspect of nuclear design/construction projects around the world.

AP1000™ Consortium

Shaw and Westinghouse are building the first four AP1000 units in China, the first of which has recently completed first concrete. Shaw and Westinghouse have three contracts for plants in the U.S. for engineering, procurement, and construction of six units, two each in Georgia, South Carolina, and Florida. These are the first contracts awarded to build new commercial nuclear power plants in the U.S. since the 1970s.

Engineering

As the engineer/constructor for 18 U.S. nuclear plants, Shaw has continuously maintained ASME-III (N) certifications and is providing engineering services to more than 50 nuclear power plant operating units—more than half of the U.S. fleet.

Piping, Tank, and Structural Steel Fabrication Modules

As a world leader in pipe fabrication, Shaw supplied piping to 58 of the 104 operating nuclear power units in the U.S., and is certified by ASME to perform all activities required for construction of nuclear plant piping components. Shaw is constructing a state-of-the-art module fabrication facility in Lake Charles, LA, to support construction of AP1000 modules.

Plant Completions and Restarts

Building on our extensive experience in plant completions and restarts worldwide, Shaw played a significant role in the successful completion of the Browns Ferry Unit 1 restart project.

Plant Uprates and Upgrades

As a power uprate industry leader, Shaw has performed uprates and studies on more than 53 operating PWRs and BWRs, adding more than 2,500 MW to the U.S. grid.

Maintenance and Modifications

As a leading provider of commercial nuclear power plant maintenance and modifications services in the U.S., Shaw has active contracts covering nearly 36 percent of the operating units and participated in record-setting outages for PWRs and BWRs in the U.S.

Decontamination and Decommissioning

Shaw has performed D&D services for 15 commercial, research, and U.S. Army nuclear reactors and to numerous government facilities. Shaw completed decommissioning of Maine Yankee and Connecticut Yankee.

Spent Fuel Dry Storage

Shaw designs, licenses, and constructs ISFSIs; performs spent fuel management studies; and provides fuel movement and cask loading and handling services. We performed design, licensing, and project management for the private dry fuel storage facility.

The AP1000 technology is based on standard Westinghouse pressurized water reactor technology that has more than 2,500 reactor years of proven and highly successful operation.

Advanced design features

- Passive safety systems
- U.S. design certification
- Short engineering and construction schedule
- Reduced components and commodities
- Modular construction
- Severe accident mitigation features

For more information contact:

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Steve Stamm
Phone: +1 617.589.7499
E-mail: steve.stamm@shawgrp.com

* *Shaw ranked No.1 in Power Design by Engineering News-Record (ENR), Top 500 Design Firms, 2008 and 2009.*

** *Sanmen photos used with permission of site owner.*

Shaw®

a world of **Solutions**™

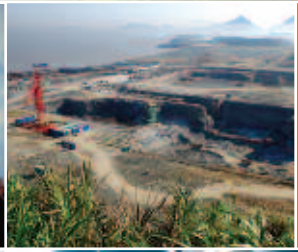
Building Excellence—
Through Commitment to Nuclear

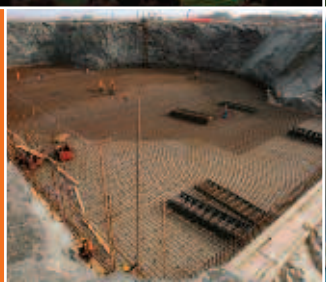
Shaw's integrated nuclear solutions provide clean, reliable, carbon-free energy and economic growth to communities throughout the U.S. and around the world. Shaw's power uprate projects have added over 2,500 MW to the U.S. grid. We provide maintenance and engineering services to more than half of the nuclear plants in the U.S., instilling a safety culture second to none. And, Shaw is executing new AP1000 contracts with Westinghouse Electric Company for six units in the U.S. and four units in China, offering the world's safest and most advanced nuclear plant technology.

For a fully integrated provider of Nuclear power solutions, choose excellence. Choose Shaw.

www.shawgrp.com

AP1000 Rendering


18M122008D

TOTAL LIFE CYCLE CARE FOR YOUR MATERIAL HANDLING EQUIPMENT

Equipment 866.261.9975
Service 800.933.3001
Parts 800.727.8774
Training 866.821.4006

LIFE-CYCLE CARE keeps your plant operating at peak efficiency. Our global network of material handling experts will help you select the right equipment for your application, and then maintain it for top performance, for the life of your crane, and the life of your business.

P&H PRODUCTS & SERVICES

P&H products are backed by an extensive network of regional service centers that are staffed and equipped to provide immediate response to your needs. We service and provide parts for all brands.

- Turnkey Installations
- Project Management
- Modernizations and upgrades, all makes and models
- Original Equipment Manufacturing
- Engineering Evaluations and Equipment Feasibility Studies
- Statutory code compliance evaluations
- Design and Engineering evaluations
- Seismic Evaluations
- Training
- Operation, Maintenance and Safety Training
- Service, Maintenance and Parts for all brands

P&H EQUIPMENT

- Polar cranes
- Fuel handling cranes
- SUPERSAFE™ single failure proof cranes, including upgrade of existing cranes
- Radwaste handling cranes
- Missile shield cranes
- Turbine maintenance cranes
- Remotely operated cranes
- Outage support cranes
- Refueling machines
- Under hook attachments
- Lifting beams
- Remotely operated grapples

P&H SERVICE

- Turnkey control replacement and capacity uprates
- Outage support, including containment work
- Preventive maintenance (24/7)
- Installation & relocation of equipment
- Repairs and trouble shooting
- Environmentally friendly lubricants
- OSHA compliance inspections
- Runway surveys
- Structural Evaluations
- National service accounts

P&H MODERNIZATIONS

MODERNIZATION AND REBUILDS. A modernization program can restore your outmoded or inefficient crane to peak productivity and like-new performance at far less than the cost of a new crane. We also rebuild P&H and Morris drums, bottom blocks, gearing, brakes, motion controls and wheel assemblies.

- Capacity Upgrades
- Control Upgrades - VFD, Static Stepless, DC-Digital
- Replace motors, brakes, magnetorques, add radio control
- Integrate load cells/weigh systems
- Single failure proof upgrades
- Replace festoon systems
- Improve crane tracking

P&H QUALITY

- ISO 9001 Certified Manufacturing Facilities
- 10CFR50 Appendix B and NQA-1 Compliant cranes and material handling equipment
- NUREG 0554, NUREG 0612, NOG and NUM compliant
- AWS certified welders
- In-house NDE capable

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P&H NUCLEAR MATERIAL HANDLING SOLUTIONS

TURNKEY SUPPLIER OF:

- ✔ SUPERSAFE™ SINGLE FAILURE PROOF CRANES
- ✔ SPENT FUEL CRANES
- ✔ TURBINE DECK CRANES
- ✔ REACTOR ROOM CRANES
- ✔ MANIPULATOR CRANES
- ✔ TRANSFER CANAL MACHINES
- ✔ CRANE MODERNIZATIONS
- ✔ ENGINEERING SERVICES
- ✔ INSPECTION & REPAIR
- ✔ OPERATOR & MAINTENANCE TRAINING

10CFR50 Appendix B & NQA-1 Compliant, NUREG 0554, NUREG 0612, NOG & NUM Compliant – ISO 9001 Certified Manufacturing Facilities

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Morris Material Handling • Headquarters: Oak Creek, WI • www.morriscranes.com

AREVA Engineering

Engineering Solutions to Improve Plant Performance

Each and every day, AREVA is working to energize today's nuclear fleet while designing and building tomorrow's. Our team of nuclear engineering professionals is focused on delivering solutions that enhance performance and plant reliability. At AREVA, this is our way of life. Our business relationships are built on trust earned through consistently delivering expert solutions, cost-effectively, with maximum emphasis on safety, quality, predictability and reliability.

With U.S. market leadership and global resources, we are committed to delivering performance improving innovations such as Power Uprates and Variable Frequency Drives (VFDs). For example, the company recently successfully completed Installation and Commissioning of two Siemens Robicon Perfect Harmony VFD systems for reactor recirculation pump speed control at a U.S. nuclear unit.

"By bringing the Siemens Robicon Perfect Harmony Variable Frequency Drive technology to the nuclear industry, AREVA is providing our customers with a solution to improve plant performance while reducing house load," said Carl Fisher, Vice President of I&C and Electrical Systems, AREVA NP Inc. "This is just one example of how we are working with our customers to improve plant reliability and profitability."

Major Projects Include:

- Integrated Electrical Systems Upgrades
- Major Systems Installations or Modifications
- Balance of Plant Engineering
- Total Motor Solutions
- Power Uprates
- Life Cycle Management
- Regulatory Interface
- Fire Protection
- NSSS Engineering
- Reliability Improvement
- License Renewal

AREVA NP's I&C and Electrical Systems team was responsible for the equipment, engineering and overall project management for the installation. A VFD is a system for controlling the rotational speed of an AC electric motor by controlling the frequency of the electrical power supplied to the motor. These drives addressed issues with the obsolescence of the motor-generator sets previously used for speed control. Although relatively new to the nuclear industry, Siemens Robicon Perfect Harmony VFDs are field-proven in more than 4,000 installations around the world.

The upgraded drives are designed to allow more precise reactor recirculation flow control, a reduction in house load due to increased electrical efficiencies, and a reduction in required maintenance. This is also anticipated to result in significant savings for the plant in reduced house load, increasing its profitability.

AREVA is committed to providing a comprehensive solution to meet your specific overall plant needs with proven engineering, solid project management and precise execution. To learn more about our engineering solutions to improve performance, visit the Plants section of the AREVA NP website at www.us.areva-np.com.

AREVA

It's no accident. Central Research Laboratories (CRL) has been the global leader in direct manipulation of nuclear materials for more than 50 years. How? By creating effective solutions to difficult problems in the absolute world of toxicity.

A little history
CRL of Red Wing, Minnesota has been designing, developing and manufacturing equipment and systems for the nuclear industry since the 1940s. Over the years, the company has accumulated more than 100 patents, and installed more than 8,000 units in 26 countries.

Extending a hand
CRL established its leadership presence in 1950 with a breakthrough telemanipulator design. Telemanipulators function as an extension of the human hand. CRL has 15 different models to manipulate hazardous materials in situations where direct contact isn't safe for people or for the environment, and when finger-like dexterity and feel ("force-feedback") are needed. Without telemanipulators, important activities ranging from nuclear waste cleanup to preparation of radiopharmaceuticals for medical procedures would be more difficult, costly, and dangerous.

Touting the line
In addition to the telemanipulators, CRL's principal product line includes:
Double-Door Sealer Transfer System — Used for transferring items and materials in or out of sealed enclosures, allowing rapid and repeatable transfers without breaking containment of the enclosure or the transfer container.
Sealed Pass-Through Enclosure System — A means of providing a sealed penetration into an enclosed volume using a glove, window, bag, plug, or ball manipulator and maintaining the integrity of the enclosed volume during a replacement or transfer procedure.
Drum Transfer Systems — Bagging and bagless transfer of hazardous materials using industry-standard drums.

Service with a style
Products are important. No question. But so is service. CRL provides complete before- and after-sale service for all products, including:
- Engineering assistance to ensure proper layout, installation, and operation
- On-site installation support
- On-site field service (repair and maintenance) of all CRL equipment
- Factory repair and refurbishing
- Complete spare parts availability
- On-site or factory training on equipment maintenance and operation
- Technical support for the life of your equipment

Again, CRL didn't take the industry lead by accident. Rather, it has earned it every day for more than a half century by providing the best solutions to difficult problems in the absolute world of toxicity.

CENTRAL RESEARCH LABORATORIES

Red Wing, Minnesota 55066
651-388-3565
www.centres.com
FAX 651-385-2109

Managing the Transition to Digital Technology

Developing and executing a strategy for maintaining I&C systems at aging nuclear plants isn't a luxury; it's a necessity, especially in the context of life extension and uprate programs that allow plants to operate another twenty years or more. The reality is that up to $30-million will have to be spent on control system maintenance. Hurst Technologies can assist in developing and executing a strategy that allows you to justify and minimize the expenditures.

All too often, the focus has been on a digital upgrade or a controls modernization. These are *hardware* solutions whereas plants need *business* solutions. The best overall plant strategy could be a combination of a like replacement of components, stand-alone digital systems, and/or integrated digital systems. Like-replacement is useful if the components are: 1) not obsolete, 2) supported by the vendor, 3) still available on the market, or 4) can be reverse-engineered. Stand-alone digital replacement, which maintains the same functionality and system boundaries, may be the best option depending on budget and other factors. Integrated systems provide additional functionality, propagate information more widely, reduce the need for unique spares, and offer performance improvement.

New issues arise with the transition to digital technology. Cyber security is a critical example. It represents new functional requirements that may not have existed when the plant was designed. Plants with digital technology need to ensure that new cyber-security software isn't simply layered on top of existing systems and that cyber security solutions address the islands of automation that plants suffer with today. Cyber security solutions must be both robust and fully integrated into today's "plant operating environment" through wired or wireless connections.

All too often, the focus has been on hardware solutions when what plants really need are business solutions.

Human Factors Engineering (HFE) is also impacted by the transition to digital technology. Comprehensive HFE plans must support COL applications, as well as digital upgrades and modernizations. Addressing the appropriate HFE items during an upgrade project ensures that the myriad design and regulatory review stages go smoothly. Hurst undertakes any or all of the following in HFE: planning, analysis, design, development, evaluation, and integration.

Configuration Management (CM) is a third issue with digital systems. Distributed control systems (DCS) are often extensively modified once they are installed and may lack an appropriate CM tool from the vendor for the DCS, the plant computer, or the myriad software and performance applications and communications gateways. Often, CM tools must be custom-built to meet specific needs.

Hurst Technologies undertakes I&C design and engineering projects large and small. In all cases, we are vendor independent and often act as the owners-engineer or owners-expert to advocate, manage, and oversee I&C projects.

JOSEPH OAT CORPORATION

Founded in 1788, Joseph Oat Corporation is the **oldest, continually operated fabricator in North America.** Conveniently located on the Delaware River across from Philadelphia, Joseph Oat Corporation economically ships equipment to ports worldwide. Privately owned and operated, the company is internationally recognized as a quality fabricator of a variety of alloys and reactive metals for the most demanding and critical applications.

Joseph Oat is one of the largest providers of **nuclear safety related pressure vessels and heat exchangers.** Our equipment is operating in more than 70 power plants around the world, some for over 30 years. **One of the very few companies who have retained the nuclear "N" stamp since the inception of this designation by ASME,** we have continued to serve utilities through the active construction phase. We provide retrofit and replacement equipment on a continuing basis in the U.S. and we are currently participating in active nuclear plant construction in other parts of the world.

Technologically, Joseph Oat Corporation has consistently been one of the **true leaders in heat transfer technology.** We are not only users of internationally recognized software such as HTRI and BJAC, but we are contributors as well. Our unique experience with problems facing power plant designers allow us to often offer innovative and economic solutions to perplexing problems. We perform thermal and mechanical rating of all the heat exchangers we build. Joseph Oat Corporation performs vibration analysis, seismic and structural analysis, and fatigue analysis in-house.

Our engineers can participate together with engineers of nuclear utility companies to **solve problems dealing with water chemistry, vibration, erosion, and special safety issues.**

Joseph Oat's production facility encompasses approximately 120,000 square feet with 160 ton lift capacity. Shipments can be made by truck, rail, or ship. We maintain a fully enclosed, atmosphere controlled **clean room for the fabrication of reactive metals** and special equipment requiring full segregation from other fabrication work.

Joseph Oat Corporation possesses the ASME Sec. III "N", "NPT" and "NA" stamps and Sec. VIII Div. 1 "U" and Div. 2 "U-2" stamps. In addition, we are ISO 9001 certified by TUV.

Below are the products we have furnished to nuclear power plants:

- Safety related shell and tube heat exchangers
- Safety related air coolers
- Safety related pressure vessels and storage vessels
- Safety related filters
- Safety related strainers
- Spent fuel racks
- Nuclear waste canisters
- Orifice plates, venturies, and other flow restriction devices
- Components supports
- Pump supports, bedplates and columns
- Spray nozzles
- Piping
- Safety related special weldments
- Raw materials such as bolting, flanges, plate, etc.

Joseph Oat's Quality Assurance Program has been audited by most major nuclear plants and independent agencies, including the multi-utility consortium, NUPIC. Refined and honed over the many years we have participated in the Nuclear Industry, our Quality Assurance Program is an effective and crucial element in all aspects of the services and products we provide.

We are confident that you will find Joseph Oat well qualified to meet your nuclear design and product requirements, whether you are purchasing new or replacing old equipment. Should you require more information or would like to speak to us, please contact the undersigned:

Edward S. Marinock
Vice President

John McDonald
Manager, Marketing and Sales

Call, fax or e-mail us for a copy of our capabilities brochure.

ESTABLISHED 1788

JOSEPH OAT CORPORATION

2500 Broadway, Drawer #10, Camden, NJ 08104 USA
856-541-2900 fax 856-541-0864 ■ www.josephoat.com

WE MAKE METAL WORK™

THE EXPERIENCED AND RELIABLE SOURCE FOR NUCLEAR POWER PLANT COMPONENTS

▼ A 316 stainless RHR Heat Exchanger

▼ Commercial nuclear reactor burial cask

▲ Clean Room for the fabrication of components requiring physical segregation

▲ A titanium CCW Heat Exchanger

Over 100 power plants in 15 countries rely on Joseph Oat Corporation equipment.

- 35 continuous years of maintaining ASME SEC III CL. 1, 2 and 3 "N" stamp
- NUPIC audited
- Section III and safety-related heat exchangers & pressure vessels
- Plate fin air coolers
- Reverse engineering
- Pulsation dampeners
- Filters & Strainers
- Dry storage fabrication for spent fuel
- Yucca Mountain Waste Package Prototype
- MCOs, Model 9975s & other canisters
- Special weldments
- Heat transfer design services
- Seismic analysis
- Fatigue analysis
- Spare parts & miscellaneous materials

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Joseph Oat Corporation

2500 Broadway
Camden, NJ 08104 USA
Voice: 856-541-2900
Fax: 856-541-0864
email: sales@josephoat.com
www.josephoat.com

Our **Quality Assurance Program** is qualified for ASME Section III Class 1, 2, 3, and MC, and Section VIII. It also conforms to 10CFR50 Appendix B, ANSI N45.2, NQA-1 and ISO 9001.

We also hold a Chinese Safety Quality License

Nuclear Programs Fuel Major Tool & Machine's Growth

Our Present...

Since 1946, Major Tool & Machine, Inc. has been providing engineering, fabrication, machining, assembly and testing services for critical application environments. Our customer-focused philosophy, coupled with continuous reinvestment in our capabilities, facilities and employees, has enabled us to evolve with and respond to the needs of our customers. Major Tool's best value approach provides our customers with the highest quality, competitively priced build-to-print services available.

Major Tool provides unsurpassed levels of capability and quality assurance. Maintaining over 300,000 sq. ft. of environmentally controlled manufacturing space under roof, Major Tool offers extraordinary capacity. Our continuous reinvestment in capital equipment allows us to provide prototype through production forming, welding, machining, assembly and testing services to meet the wide range of application specific shape, size and configuration hardware required by the nuclear industry.

Our ability to execute this full spectrum of manufacture has allowed Major Tool to successfully participate in many critical government, industry and academia sponsored fission and fusion programs. In fact, Major Tool has been honored by our selection as U.S. Department of Energy Oak Ridge National Laboratory 2003 Small Business of the Year.

Our extraordinary capability, capacity and experience are driven by our commitment to quality assurance. Major Tool maintains ASME N, NPT, N3, NS, U and U2 certifications. Our Quality Assurance System is audited to ASME NQA-1, as is NRC 10CFR50, 10CFR71 and 10CFR72 compliant.

Your future...

It is bright on the nuclear energy horizon. Major Tool is committed to our future, your future, and the future of our generations by championing the growth of nuclear energy and the safe, successful remediation and disposal of radioactive waste.

We are well positioned to usher in the nuclear renaissance, and we will continue to apply all our resources and knowledge to provide our customers the quality critical hardware necessary to meet tomorrow's demanding nuclear requirements.

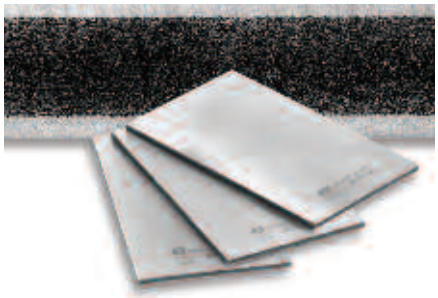
Nuclear power plant upgrades, next generation power plants, naval nuclear, radwaste transportation and disposal casks, canisters and tooling, fuel fabrication, magnetic and inertial fusion, and government, industry and academia supported energy sciences initiatives are all areas where Major Tool applies our hardware manufacturing expertise.

We look forward to the bright future that nuclear energy provides us all.

For more detailed information, or to schedule a visit to Major Tool & Machine, contact Joel Manship at (317) 917-2619 or by email at jmanship@majortool.com

Diverse Range of Neutron Absorber Materials

Ceradyne is the only vertically integrated manufacturer of neutron absorber materials that offers a diverse range of products for spent and fresh nuclear fuel containment. These products provide market-leading performance for thermal neutron absorption in both wet and dry spent nuclear fuel storage/transport and fresh fuel transport applications.

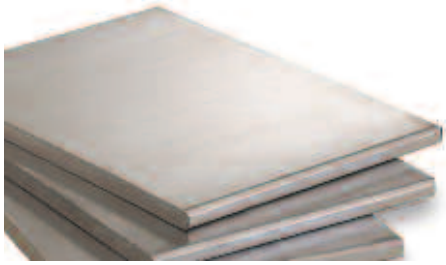


BORAL® Composite

Well suited to many neutron absorption applications, the BORAL® Composite is used for spent fuel storage pools, dry storage dual-purpose casks, and fresh fuel canisters in the United States, Europe and Asia. Since the late 1950's, BORAL® has been used in research reactors, nuclear power plants and spent fuel storage systems worldwide. It has the longest continuous service history of any neutron absorbing material, performing its intended function for very long periods in high gamma and neutron radiation fields, never failing to meet it's neutron absorption function.

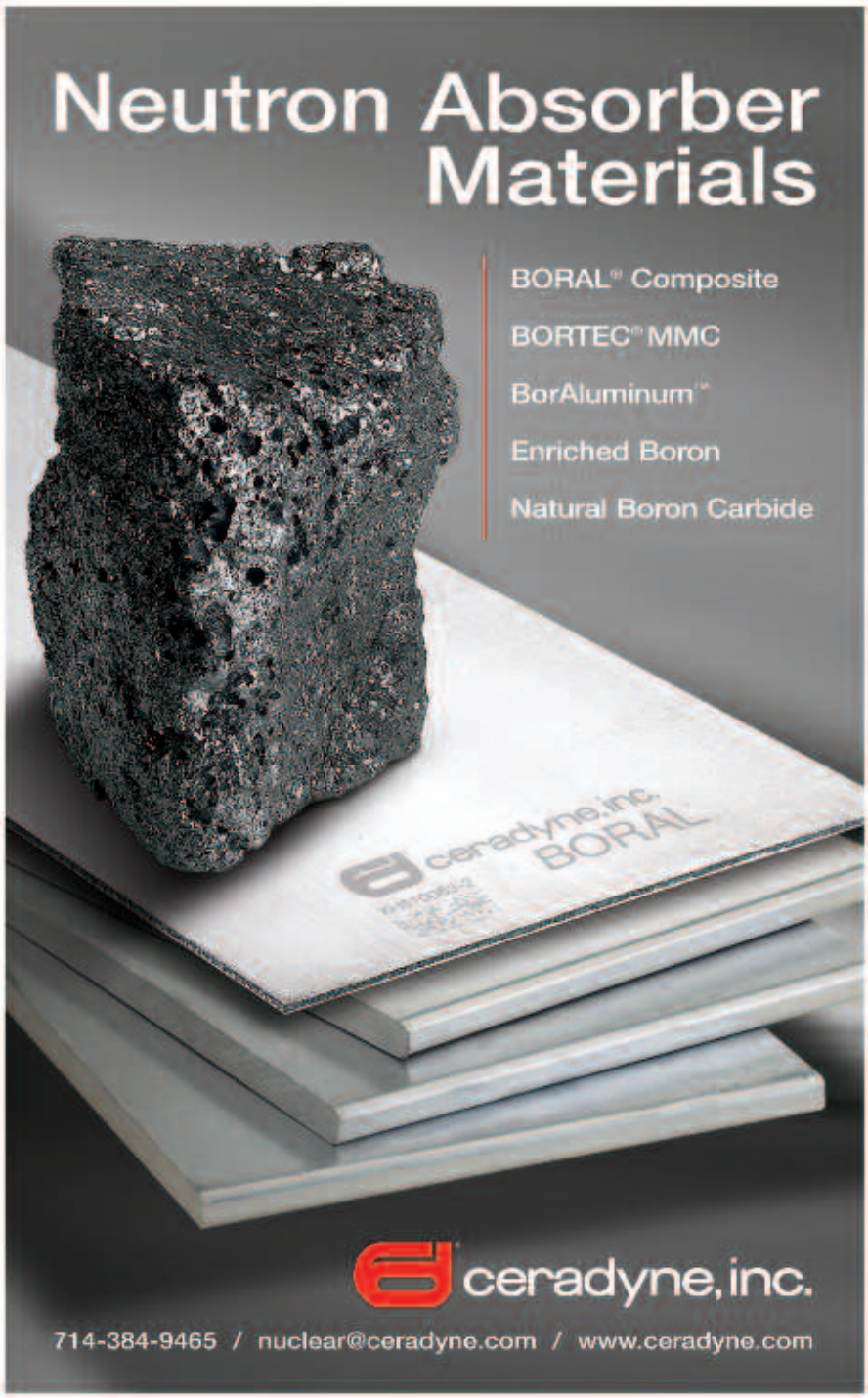
BORTEC® MMC

Ceradyne manufactures BORTEC® MMC into rolled or extruded shapes with B_4C contents up to 45% by volume using various aluminum alloys. The resulting composites have outstanding properties for structural or non-structural design applications, and are lightweight and adaptable for neutron capture in both wet and dry environments. BORTEC® MMC is available using 5000, 6000 and 1000 series aluminum alloys and has successfully passed a series of in-depth nuclear compatibility tests.



Enriched Boron

Enriched Boron (^{10}B) is produced by Ceradyne Boron Products (formerly Eagle Picher) to solve demanding neutron absorption requirements. Ceradyne is the leading global supplier of boron isotopes having developed unparalleled expertise in the separation and analysis of boron isotopes (^{10}B and ^{11}B) and in the measurement of impurities in boron compounds. Advanced process technology has been created to deliver the highest chemical purity boron products of tailored ^{10}B /^{11}B atomic ratios which meet critical nuclear and electronic applications.



Superior Machining Solutions for The Power Industry

After a long legacy of design innovation and quality manufacturing, power professionals have come to depend on TRI TOOL® machinery for a wide range of precision, in-place machining and weld end preparation solutions.

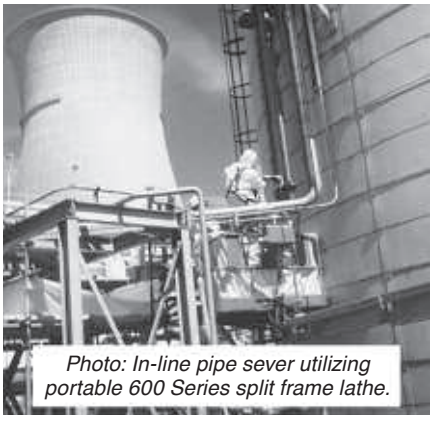


Photo: In-line pipe sever utilizing portable 600 Series split frame lathe.

Tri Tool's legendary 600 SB Series Split-Frame Lathes have been at the core of countless unique applications where their uncompromising accuracy and reliable cutting power make them the optimum solution for in-line machining.

The 200 Series BEVELMASTER® ID mounted machines provide the utmost in flexibility and custom configuration for rapid, precision end preparation. 200 Series tools can be configured with standard accessories, or custom designed attachments and tooling for any machining requirements.

With the newest PIPEMASTER® Series equipment, Tri Tool offers high performance precision machines that can generate weld preparation on large, heavy wall pipe up to 48" in diameter.

In addition to excellent portable machine tools, Tri Tool Inc. Construction and Field Maintenance Services offers many dynamic, cost effective project and outage management options. Tri Tool's wide network of regional sales and support representatives, support offices and regional service personnel stand ready, backed with the most advanced equipment, to respond to your most critical on-site machining requirements.

As an original equipment manufacturer, Tri Tool engineering provides state-of-the-art custom equipment design and manufacturing support. Equipment can be designed for contingency support, to provide critical machining operations, configured or modified to include video monitoring, or incorporate remote control for reliable operation in hazardous environments.

For more information or technical assistance contact...

TRI TOOL INC.

(916) 288-6100 • 888-TRITOOL
www.tritool.com

For Services Support call:
(800) 356-3343 • (404) 763-8704

The only thing more dependable than a TRI TOOL® portable machine tool is our

ON-SITE SERVICE

24 HOUR RESPONSE

- *NUCLEAR MAINTENANCE*
- *PIPELINE & OFFSHORE*
- *DECOMMISSIONING*
- *FOSSIL & BOILER MAINT.*
- *IN-PLACE MACHINING*
- *FLANGE FACING/MILLING*

Tri Tool Inc. Construction and Maintenance Field Services provide the energy industry with a wide range of precision equipment and service solutions.
Whether for economical equipment rental options or for emergency outage support, Tri Tool stands ready to respond to your most demanding on-site service requirements.
Call today for more information.

A National Network of Offices to serve you!

(800) 356-3343 or (404) 763-8704

TRI TOOL INC.
www.tritool.com

Field Machining • Code Welding • Fabrication • Special Engineering Services

FCI in the Nuclear Power Industry

Fluid Components International LLC (FCI) products are installed in multiple plants around the world. FCI's innovative thermal dispersion flow meters and switches with no moving parts and solid state technology are applied in safety-related and balance of plant applications—in both BWR and PWR designs—from simple liquid flow and level monitoring to complex liquid/foam interface measurement and air/gas monitoring.

Products And Applications

FCI's product line for the nuclear power industry includes:

- Flow Switches and Alarms
- Level Switches and Alarms
- Level Gauges
- Temperature Switches and Alarms
- Air and Gas Mass Flow Meters

Commitment To The Industry

FCI's first flow and level switches for nuclear power applications were developed in the early 1970s to meet critical nuclear industry standards issued by the Institute of Electrical and Electronics Engineers (IEEE). The company extended its commitment to the nuclear industry by becoming a NUPIC and NIAC certified manufacturer. FCI has seamlessly maintained nuclear industry certifications and support for the industry ever since.

Additional Qualifications And Capabilities

FCI continuously works to improve its technologies and products to meet the evolving needs of the nuclear power industry. FCI's current nuclear industry capabilities include:

- ISO 9001 Manufacturer, NUPIC and NIAC Compliant
- Products Qualified to IEEE 323, 344
- QA in Accordance with 10CFR50 App. B, ANSI N45.2, ASME NQA-1
- 100+ Nuclear Plant Installations
- 30 Unique Nuclear Applications Instrumented
- Dedicated Nuclear Application/Customer Support Team
- In-house NIST Traceable Calibration Laboratory
- Service Centers Located Worldwide
- Satisfied, Repeat Nuclear Industry Customers
- Improved Supply Chain Efficiency

FCI's nuclear qualified products have a proven history of exceptional quality, precision accuracy, reliability, longest life and lowest life cycle costs.

We realize it's more than just providing you a flow, level and temperature measurement solution; it's about providing the expertise, problem solving, and long-term commitment needed to service and sustain your nuclear power plant.

For more information, visit www.fluidcomponents.com/nuclear. Call (760) 744-6950 or (800) 854-1993 to speak with one of our Nuclear Product Specialists in person.

dayzim.com

Nuclear Services

Day & Zimmermann is the leading nuclear plant maintenance and modifications contractor in the United States. We are the #1 O&M Contractor in Power according to the latest ENR ranking, and provide services to over 70 of the nation's 104 operating commercial nuclear power plants. We are solely focused on power plant maintenance and modifications as our core business and have built our company and service offering to support operating power plants. We have more than 35 years of in-depth and relevant experience in managing nuclear plant maintenance and modifications in support of refueling outages and online support, as well as in executing major projects.

Day & Zimmermann provides a complete range of cost-effective services to our clients, with a goal of becoming the most admired company in our business. This is what drives us to meet the challenges of today's changing utility environment. Our success has resulted from our dedication to a safe, productive work environment and assuming full ownership of our assigned workscope. We have extensive experience with individual major project execution including Extended Power Uprates, Control Room Renovations, ISFSI Construction, Containment Sump Strainers, Major Piping Modifications, Plant Security Upgrades, Feedwater Heaters, Condensate Filtrate Systems, RWCU Modifications and Turbine Retrofits.

Nuclear M&M Capabilties

Day & Zimmermann routinely provides the following full range of services to our customers:

- Maintenance & Modifications
- Condenser Services
- Valve Services
- Turbine Services
- Radiological Services
- Asbestos Abatement / Insulation
- Turnkey Scaffold Services
- Painting / Coating
- Professional Staffing

We have the capabilities to manage and direct the full complement of projects and maintenance scopes including field engineering and work package planning, estimating, scheduling and cost tracking, project management, QA / QC and site access processing.

Alliance / Partnering Approach

Day & Zimmermann has extensive experience in working under "pay for performance" contracts, multi-unit / systemwide contracts and long-term alliance / partnering agreements. We believe these types of arrangements are the most economical and mutually beneficial means of providing maintenance and construction services, and recognize the benefits to both the owner and contractor in such agreements. We welcome the opportunity to earn our fee based on our performance and the performance of the units we work on. Our major customers include FirstEnergy, FPL, PGE, NPPD, AEP, Ameren, WCNOC, Entergy, PPL, NMC, SCE&G, OPPD, Constellation Energy, Dominion, APS, Progress Energy and Duke Energy.

Industry Involvement

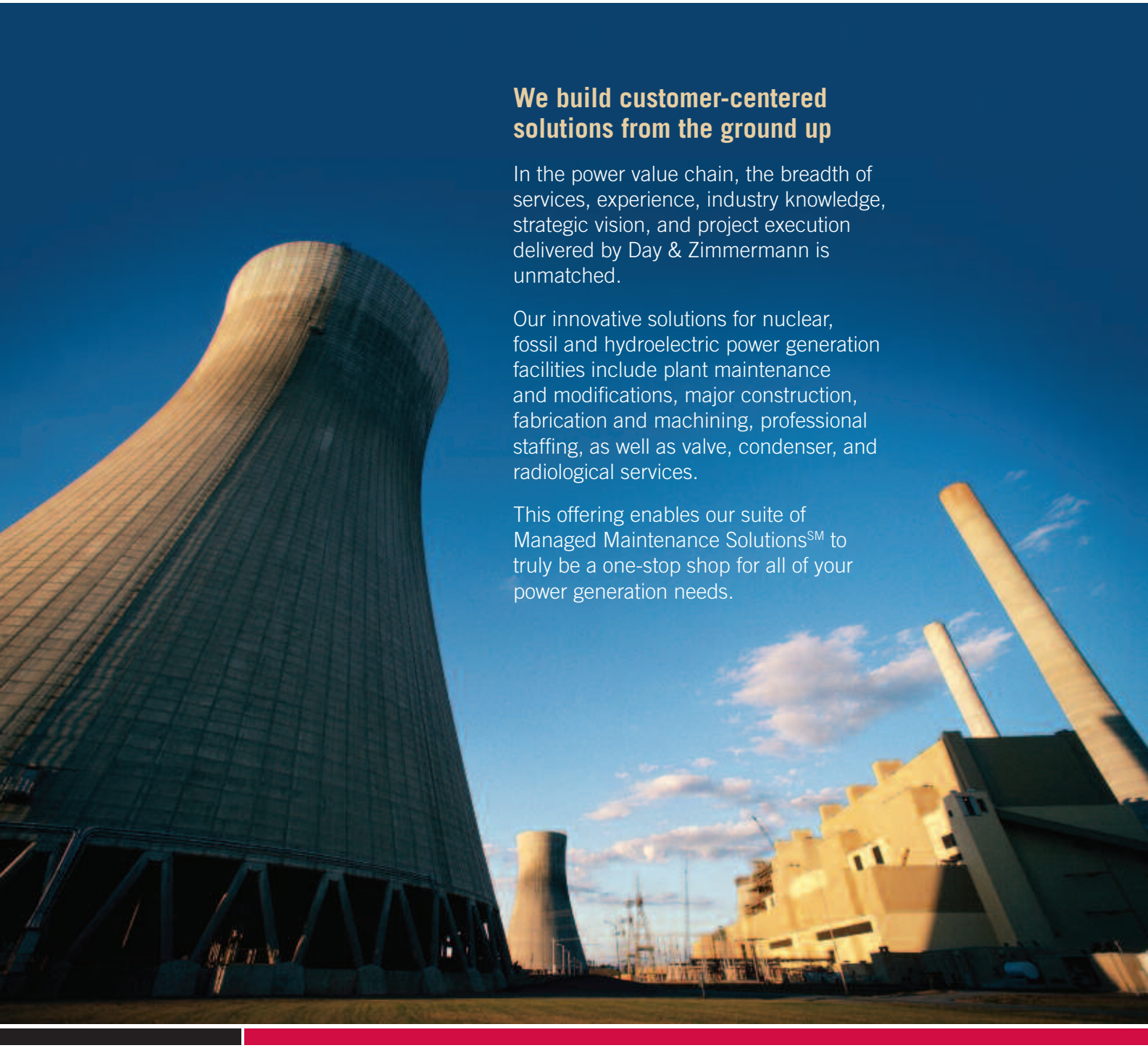
Day & Zimmermann is actively involved on many fronts to address industry issues and advance the benefits of nuclear power and safe, cost-effective plant operations. We work with INPO, ANS, NEI, EPRI and numerous other industry organizations along with the Building & Construction Trades organization and their initiatives on labor availability, skills certification and training.

Day&Zimmermann

We do what we say.®

Safety, Integrity, Diversity, Success

We look at power plant maintenance from a **different** angle.



We build customer-centered solutions from the ground up

In the power value chain, the breadth of services, experience, industry knowledge, strategic vision, and project execution delivered by Day & Zimmermann is unmatched.

Our innovative solutions for nuclear, fossil and hydroelectric power generation facilities include plant maintenance and modifications, major construction, fabrication and machining, professional staffing, as well as valve, condenser, and radiological services.

This offering enables our suite of Managed Maintenance Solutions℠ to truly be a one-stop shop for all of your power generation needs.

Day&Zimmermann

We do what we say.®

Safety, Integrity, Diversity, Success

www.dayzim.com

TETRA TECH

For more information: nuclear@tetratech.com

NUCLEAR SERVICES

Nuclear power is the only technology ready to meet the global demand for base load energy in an environmentally responsible way. Tetra Tech recognizes the important role nuclear power will play in maintaining a diverse energy mix and developing energy independence. With 10,000 of the best and brightest professionals in science and engineering, including more than 500 nuclear specialists in the United States and Canada, Tetra Tech offers smart, efficient solutions that make a difference in a complex world.

Tetra Tech covers the entire project lifecycle by providing a range of nuclear services including site investigation and preparation; licensing and permitting; consulting; engineering, procurement, and construction (EPC); training; operations and maintenance; and decommissioning. We offer a team of proven industry leaders with the experience to deliver complex projects on time and within budget, throughout North America and abroad. Tetra Tech is consistently ranked among the Top 10 Design Firms and among the Top 8 Nuclear Waste Cleanup firms in the United States.

Tetra Tech leads the nation in nuclear power plant license renewal services and has prepared license applications for 7 new nuclear power plant projects. Tetra Tech also provides complete fuel cycle services including services to support mining and milling uranium ore, used fuel recycling, enrichment, conversion, and advanced reactors. We offer comprehensive industry-recognized services throughout all types and phases of nuclear projects, including services for nuclear power plants and nuclear waste treatment and handling facilities.

Tetra Tech experts have been involved with the design and construction of more than 30 nuclear power facilities over the past four decades, and have participated in the refurbishment of the OPG nuclear units in Canada. We are also at the forefront of developing and deploying small reactor technologies. Tetra Tech is well positioned to support the continued growth of the global nuclear industry.

Project Development & Consulting Services

- Program Management
- Risk Management
- Project Integration
- Procurement and Supply Chain Management
- Configuration Management
- Licensing, Permitting, and Regulatory Compliance

Engineering & Design Services

- Environmental and Geotechnical Services
- Plant Structures, Systems, and Components Design
- Used Fuel Facilities Design
- Independent Engineer Services
- 3-D Modeling and Analysis
- Small and Advanced Reactor Design

Construction Services

- Constructability Review and Oversight
- New Plant Site Preparation
- Construction/Construction Management
- Modularization
- Turn-key Support Facility Construction
- Site Remediation
- Labor and Resource Management

Operations, Training & Maintenance Services

- Development of Training Programs and Materials
- Uranium Facilities Support
- Operating Plant Modification Package Preparation
- Used Fuel Disposition and Handling

Quality Services

- NQA-1 Quality Assurance Program – Appendix B Compliant
- ASME Section III, Division 3, Class TC Transportation Containment
- ASME Section III, Division 1, Components
- Audits and Surveillance
- CSA Z299.2 – Design
- CSA N286.2 – Design QA
- CSA N286.1 – Procurement QA
- ISO-9001
- CANPAC Audited

TETRA TECH

complex world | CLEAR SOLUTIONS™

RENEWABLE ENERGY FOR A COMPLEX WORLD

Wind, solar, nuclear, geothermal, and bioenergy—these sources offer clean and sustainable alternatives to help meet the world's rising energy demands. For nuclear energy projects, Tetra Tech provides a wide range of services including licensing, site preparation, nuclear modifications, risk analysis, nuclear materials management, engineering-procurement-construction (EPC) services, and decontamination and decommissioning services. Tetra Tech provides clear solutions in consulting, engineering, program management, construction, and technical services worldwide. **www.tetratech.com**

Burns and Roe Corporate Profile

Our vision and focus is to be the best – the best to the people, the companies, and the industries we serve. How do we accomplish this? As we have done through three generations, we employ exceptional people; bring a culture of flexibility and responsiveness; develop understanding and commitment; apply environmental stewardship, superior know-how and innovation; and then focus on the results.

The critical element that Burns and Roe brings to our customers' teams is our ability to work closely with them, to understand their needs, to respond carefully to those needs, and to work together to complete the project successfully.

Our tradition, skill, natural flexibility, and commitment to responsiveness in our work and our environment build success and long-term relationships with our valued customers.

Within Burns and Roe, we say:

"Be the Best to the Best!"

It's a tradition at Burns and Roe.

K. Keith Roe, PE

A Message from Our President

Sustainable Solutions

Burns and Roe is committed to sustainability. We have been an innovative leader in the traditional energy markets for over 75 years. During that time, our company has always sought solutions for the challenges of improving the production, efficiency and environmental quality of generating electricity. Burns and Roe has supported clients in the development of sustainable and renewable energy projects including wind, solar, energy-from-waste and biomass. We also provide efficiency audits, betterment studies and innovative solutions such as "Renewable Assisted" technologies to reduce the carbon footprint of new and existing facilities.

At a Glance

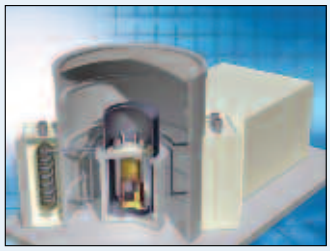
Personnel:	1700+
Founded:	1932
Headquarters:	Oradell, NJ

Office Locations

Oradell, NJ
Mt. Laurel, NJ
Washington, DC
Virginia Beach, VA
Los Alamos, NM
Chattanooga, TN
Idaho Falls, ID
Oak Ridge, TN
Taipei, Taiwan
Bangkok, Thailand

RECENT BURNS AND ROE MILESTONES AND HIGHLIGHTS

Burns and Roe strengthens its Southeast presence by opening a new office in Chattanooga, Tennessee.

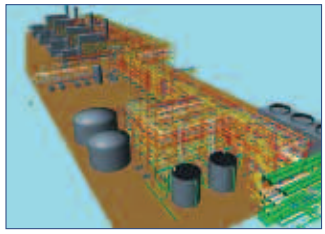


The company was selected to provide conceptual design of the traveling wave reactor - a 3,000 MW sodium-cooled reactor.

Engineering, Procurement, Construction, Operations and Maintenance

Power and Energy Services

Burns and Roe's heritage is rooted in the engineering of power generation, from small cogeneration plants to large fossil-fueled, nuclear, and advanced technology facilities. The Company has provided engineering, procurement, and/or construction services for over 175 fossil-fueled generating units totaling over 75,000 megawatts. Burns and Roe also provides services related to the upgrade and retrofit of existing plants. Our focus is on utilities, transmission and distribution facilities, and energy related services.



Key Markets

- Fossil power
- Plant expansion, retrofit and modifications
- Transmission and distribution
- Cogeneration
- Waste-to-energy
- Boilers and chillers
- Renewable power

Nuclear Services

At the forefront of nuclear technology since its inception, Burns and Roe stands strategically poised to develop the next generation of nuclear plants in providing clean, dependable and efficient energy. From our portfolio of commercial nuclear reactors engineered world wide to our history of nuclear waste handling, retrofit programs and decommissioning and dismantling of facilities, Burns and Roe has the background of excellence and current expertise to offer a unique range of services for the next generation of nuclear energy.

Key Markets

- Nuclear power
- Retrofits and modifications
- Licensing
- Decontamination and decommissioning

Federal Services

Burns and Roe provides support services at several federal facility sites throughout the United States. The Company has executed several large contracts to alleviate the Department of Energy's nuclear waste stockpile including the disposition of radioactive material as products to be used as medical isotopes. The company has also participated in the Department of Energy's Nuclear Materials Safety and Security Upgrade Program and International Nuclear Safety Program.

Key Markets

- DOE facilities
- DOD facilities
- Federal laboratories
- Special nuclear programs
- Radioactive waste treatment

Operations and Maintenance Services

Burns and Roe provides expert operations and maintenance services throughout the world. The firm mobilizes and manages work forces for projects and facilities, large or small, simple or complex, in urban or remote locations. Burns and Roe supports both government and commercial organizations in the operation of total facilities or as a discrete service function.

Key Markets

- Military bases
- Pharmaceutical/ College campuses
- Federal facilities
- Power plants
- Desalination plants
- Commercial outsourcing

The Burns and Roe designed Lee County Energy-from-Waste Center won *Power Magazine's* prestigious "Renewable Plant of the Year" award.

800 Kinderkamack Road,
Oradell, New Jersey 07649
Tel: (201) 265-2000
Fax: (201) 986-4335
www.roe.com

American Crane & Equipment Corporation

Ready for the Nuclear Renaissance

American Crane & Equipment Corporation (ACECO), a privately held U.S. company with headquarters in eastern Pennsylvania, is the leading manufacturer providing cranes and material handling equipment for nuclear applications. The design and manufacture of custom equipment meeting the rigors of nuclear quality assurance is the company's primary business. American Crane has 3 patents related to this industry. Customers include nuclear utilities, Department of Energy sites and laboratories, military facilities, and aerospace clients.

American Crane has made significant investments to meet the nuclear industry's demand for high quality cranes and next generation equipment design. To prepare for the next generation of nuclear power plants and meet the needs of the specialty lifting equipment market, American Crane has expanded its operations to include a total of 3 locations near Philadelphia, PA. In addition, American Crane has been adding to its workforce. By having the expanded manufacturing capacity and highly skilled labor, American Crane now has the scalability to meet future market demands.

American Crane completed plant expansions this year at its corporate headquarters. This facility houses 5 manufacturing bays with lifting capacity available up to 100 tons. To assure machining capacity, one of the largest boring mills in the northeastern United States has been installed. In addition, this facility has an on site 200 ton load testing tower.

American Crane's Service, Parts and Standard Crane Division moved to a new location in early 2008. Located just 3 miles from corporate headquarters, this facility has room for additional expansion.

American Crane's Lester Division is located near the Philadelphia International Airport, about 50 miles from corporate headquarters, and has extensive manufacturing space. This includes 1 bay with (2) 75 ton capacity cranes (150 ton lift capability). Both cranes have a clearance of 40 feet under their hooks. It also has access to rail and barge service for large shipments.

Early on, American Crane made the strategic decision to maintain the in-house resources for engineering, manufacturing and field service needs. The engineering staff consists of seasoned mechanical, electrical and structural engineers, including world class nuclear seismic experts. This assures consistent quality and schedule adherence.

Engineering Capability
- Mechanical and machine design
- Structural design and analyses
- Dynamic modeling and seismic
- Failure modes and effects analyses
- AutoCad, MathCad, Solidworks, SAP2000 and ANSYS
- Complete control system design
- Remote systems
- Automated systems
- Software development including real time graphics
- Complete licensing success with NRC
- Support for 50.59 evaluations

As a supplier to the nuclear industry, American Crane has maintained a Quality Assurance Program since 1996 that meets both 10 CFR 50, Appendix B, and ASME NQA-1 standards. Its quality program has been audited by commercial nuclear utilities, NUPIC, and DOE contractors.

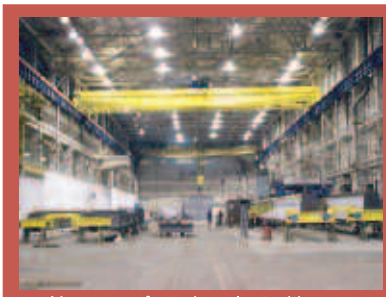
Quality Assurance
- 10 CFR 50, Appendix B / NQA-1 Quality Program for nuclear projects
- NUPIC audited
- Welding controlled to AWS D1.1 or D14.1
- SNT-TC-1A qualified personnel
- In-house non-destructive testing

Service
- Load testing
- Product support
- Outage support
- Retrofit and upgrades
- Inspections
- Spares
- Custom fabrication

Training
- Safety training
- Operator and maintenance training
- Custom programs

American Crane is well equipped to provide cranes for the next generation of nuclear power plants. In addition, American Crane's conceptual design for single failure proof cranes currently provides for up to 350 tons capacity with the ability to meet requirements for design and manufacture of higher capacities through 1,000 tons.

American Crane has extensive experience with nuclear power plant requirements and has demonstrated its ability to meet customers' specifications and schedules. By successfully providing the majority of single failure proof crane upgrades for dry spent fuel storage in the United States, American Crane is ready to supply cranes for the next generation of nuclear power plants.



New manufacturing plant with over 150 ton lifting capacity

7" Spindle Horizontal Boring Mill with X = 30', Y = 14' and Z = 5'

Company Wide Plant Capacity
- 210,000 sq ft
- 150 ton lifting capacity
- Rail and barge service

Keys to American Crane's Nuclear Success
- Resume of completed projects
- Company-wide focus on nuclear
- NRC licensing experience
- Mature Appendix B QA Program
- In-house engineering staff
- Extensive seismic background
- Sufficient manufacturing capability

Entrust your future crane needs to the nuclear industry's innovative and committed leader.

For more information about how American Crane can solve your nuclear material handling needs, visit www.americancrane.com, email us at sales@americancrane.com or call us direct at 1-877-877-6778 x224.

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Proven Experience.

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NQA-1 QA Program. Testing of Single Failure Proof Trolley

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Custom Equipment

In-House Manufacturing

Engineering Solutions

For more information call **1-877-877-6778 x224**

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& EQUIPMENT CORPORATION

Your ***Critical Lift*** Experts

Performance-Tuned HE Products For Nuclear Power

Tranter plate heat exchanger technology addresses the special demands posed by nuclear power applications. Tranter offers a wide range of plate & frame and welded HEs proven under the most demanding operating conditions. Our patented plate technology enables us to optimize the thermal and hydraulic design to bring you the best blend of cost-efficiency, performance, small footprint and reduced maintenance requirements.

Efficiency and ease of maintenance mark the versatility of Tranter plate HEs in power applications. Consider the benefits of thermal efficiency and compactness offered by plate HEs in applications traditionally handled by S&T HEs, such as:

- Interchangers, preheaters and coolers
- Vent, flue gas and general duty condensers
- Turbogenerator condensate coolers
- Turbogenerator lube oil coolers
- Turbogenerator stator intercoolers
- Closed loop system and spent fuel pool coolers
- Reactor drain and LP feedwater heat exchangers

Plate HE program for nuclear power

Plate HE types applied in nuclear power applications include:

- SUPERCHANGER® Gasketed Plate Heat Exchanger
- ULTRAMAX® Welded Plate Heat Exchanger
- SUPERMAX® Shell & Plate Heat Exchanger
- MAXCHANGER® Welded Plate Heat Exchanger
- PLATECOIL® Prime Surface Heat Exchanger Banks

For HEs in critical service, Tranter can provide all major types of calculations and stability analysis, including motion load, wind load, seismic load, nozzle load and even detailed finite element analysis calculations if required. A dedicated Document Control Department produces documents in accordance with the most stringent of customer requirements.

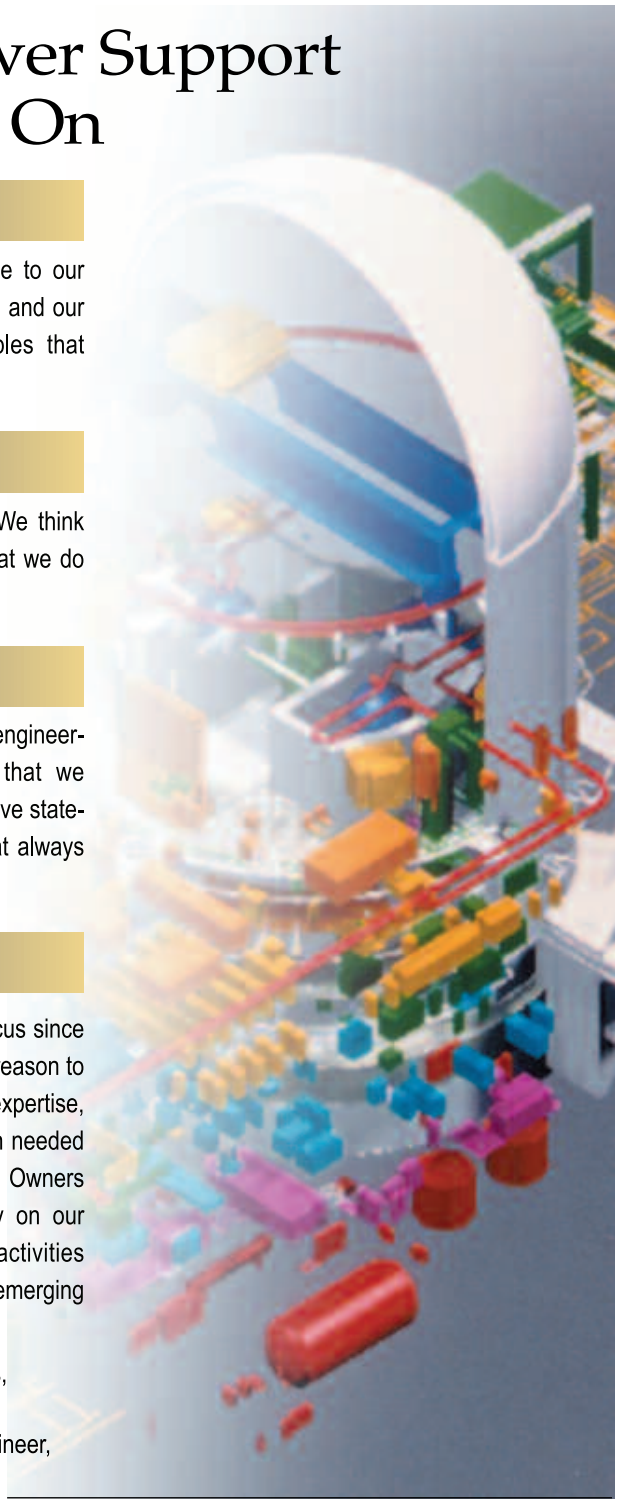
Tranter fabricates in accordance with all major design codes, specifically ASME Section VIII Division 1 with U stamp, and PED 97/23/EU with CE stamp. All Tranter manufacturing centers worldwide are certified according to ISO 9001:2000.

At the forefront for more than 70 years

Tranter products are on the job in demanding power generation applications around the world. Backed by our comprehensive experience and worldwide presence, Tranter offers exceptional applications assistance and local service. Tranter is close to its customers, with subsidiary companies, agents, distributors and representatives located worldwide.

Heat exchanger types, from left: ULTRAMAX® Welded Plate, MAXCHANGER® Welded Plate, SUPERCHANGER® Gasketed Plate, PLATECOIL® Prime Surface Banks, SUPERCHANGER® Gasketed Plate.

The Quality Nuclear Power Support You Can Count On



Our Quality Commitment

Quality is the centerpiece of the value and service we provide to our clients. It is infused in our people, our programs, our processes, and our practices. We believe that it is the quality of our deliverables that ultimately delivers our projects within budget and on schedule.

Our Power Focus Commitment

We've been thinking power… exclusively for over 118 years. We think that's a rather firm commitment to maintaining our focus on what we do best.

Our Leading Expertise Commitment

Key to our ability to produce quality deliverables is the leading engineering, design, analysis, and project management know-how that we maintain current through our highly experienced staff and extensive state-of-the-art applications. And, of course, we are the company that always manages to get it done.

Our Nuclear Commitment

Nuclear power clients have been a primary part of our power focus since 1954, pretty much when it all started. Nuclear clients have good reason to have confidence in our capabilities, not only from our quality, expertise, and focus, but also from knowing we will be here for them when needed with what they need, as we have been for more than 50 years. Owners enlist our broad support as their preferred engineer and rely on our expertise for specialized problem-solving. Our current activities encompass new nuclear plant design and licensing activities, emerging issues, and leading edge initiatives such as:

- New plant engineering, detailed design, procurement activities, and EPC Technical Requirements development
- Combined Operation License (COL) preparation, Owners Engineer, and early site permit preparation
- Security upgrades and power uprates
- Digital controls and adjustable speed drive replacements
- Design Basis calculation reconstitution, piping systems vibration analysis, and plant/equipment test optimization

That's in addition to our extensive on-going engineering, design, and analysis for nuclear station owners for diverse projects including:

- Modifications and performance improvement
- Outage and restart support

Sargent & Lundy LLC

55 East Monroe Street
Chicago, IL 60603-5780 USA

To discuss your specific needs, contact Bob Schuetz at 312-269-6630

www.sargentlundy.com

BHI

The BHI Solution: **OUR** People Powering **YOUR** Projects

Bartlett Holdings, Inc. has developed into a leading provider of specialty support solutions to nuclear, fossil, wind and hydroelectric power generation facilities (both union & non-union). Today, BHI's operating units provide a qualified and experienced workforce to support all your operational needs.

Our affiliate companies maintain a customer focus, servicing 88 power generation customers at over 120 project locations nationwide. We have developed longstanding relationships with our customer base, many lasting more than two decades. Our unique platform of on-site specialty support solutions enables us to develop long-term strategic partnerships where our core objectives and goals are integrated with those of our customers.

BHI distinguishes itself from its competition through its extensive industry experience, comprehensive service offering, robust infrastructure and proprietary technology, and exceptional safety record.

Extensive Experience

- Over 30 years of service to commercial & government nuclear facilities
- Only company providing these services to every U.S. commercial nuclear reactor
- Executive management team with an average tenure of 11 years company experience & 22 years industry experience

Comprehensive Service Offering

- Broad suite of support services to nuclear, fossil & hydro electric power generation markets
- Union & non-union services
- Year-round and outage on-site specialty support services
- Personnel trained across disciplines to reduce costs & eliminate redundancies for customers

Robust Infrastructure & Proprietary Technology

- IT platform for workforce management enables a fulfillment rate of customer request for resources in excess of 98%
- Over 4,500 dedicated employees working on-site at customer locations nationwide
- Exclusive distribution of EXCEL scaffold to nuclear facilities & exclusive licenses for ALARA radiation protection and contamination control technologies
- Proprietary Automated Monitoring System (AMS) technology

Exceptional Safety Record

- Track record that outperforms industry averages
- EMR of 0.63 and DART of 0.17
- Continual safety training and employee safety incentive reward programs
- "360 degree" safety philosophy evaluating all aspects of every job before performing work; applied at every level of the organization

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Our Power Is In Our People

Rely on over 30 years of experience providing solutions to the power generation industry to support your next project.

Integrated Professional & Technical Services

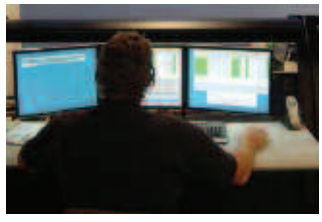
- Start Up & Restart
- Engineering & Design
- Radiation Safety
- Environmental Safety & Health
- Groundwater Protection
- Decontamination & Decommissioning
- Scaffold Management
- Technology & Equipment
- Maintenance:
  - Turbine/Generator
  - Rotating Equipment
  - Mechanical/Civil
  - Facilities

A LEADER IN SUPPORTING THE POWER GENERATION INDUSTRY









BARTLETT NUCLEAR, INC.

SUN Technical Services, Inc.

PEM Proven Performance/Quality Driven

TEAM ONE

EXCELerate

EXCEL An ISO 9001 Quality System

Automatic Locking Scaffolding System.

No Tools Required.

Savings through Safety, Quality and Technology.

U.S. Patent No. 5,028,164 &
U.S. Patent No. 5,078,532.
Other Patents Pending

EXCEL
MODULAR SCAFFOLD SYSTEM

EXCEL MODULAR SCAFFOLD

Excel at President Bush's Inauguration

Excel at an Oil Refinery

Commercial Nuclear Power Plant Use

INDEPENDENT EVALUATIONS

1. ❑ Boston Edison/Global Supply Evaluation (CD-ROM)
2. ❑ International Union of Operating Engineers Evaluation for the Department of Energy (Printed Material)
3. ❑ International Union of Operating Engineers Technical Safety Data Sheet (Printed Material)
4. ❑ DuPont Engineering Independent Industrial Safety Evaluation (CD-ROM)
5. ❑ Innovative Technology Summary Report form the DOE Evaluation at INEEL (Printed Material)

ADDITIONAL EXCEL INFORMATION

6. ❑ ISO 9001:2000 Certified Quality Assurance Program-Certificate of Registration Available (Printed Material)
7. ❑ Seismically Bench Tested and Qualified by Wyle Laboratories-Test Report Available (Printed Material)
8. ❑ Safety and Training Video (CD-ROM)
9. ❑ Technical Manual (Printed Material)
10. ❑ Client References (Printed Material)
11. ❑ Pricing (Printed Material)

Please check the items you are interested in receiving and fax to 508-830-3616, call 800-652-7712 or email your request to excel@bartlettinc.com. Be sure to include your name, company, mailing address and phone.

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Northrop Grumman Nuclear Instrumentation and Control

Proudly Serving Two Fleets for Over 50 Years

Northrop Grumman has designed, manufactured, and supported both commercial nuclear and Nuclear Navy I&C equipment for over five decades — from Shippingport and the Nautilus to new construction today.

Commercial Nuclear

As the original equipment manufacturer of commercial nuclear I&C equipment, Northrop Grumman has a long heritage in the design, manufacture, and support of safety and non-safety monitoring and control equipment. For over five decades, our engineers have designed and supported NSSS equipment.

Northrop Grumman Nuclear engineering and design teams work closely with our customers to address equipment obsolescence and supportability. Our expertise and well-established product baseline provide affordable solutions that address issues related to aging electronic instrumentation and control systems.

Nuclear Navy

Our core business is highly focused on safety-critical applications involving Power Distribution, Machinery Controls, and Nuclear Systems for the United States Navy. Northrop Grumman is the primary supplier of Nuclear Instrumentation (NI) for both new construction and retrofit applications for the U.S. Navy. Whether controlling the arrestment of aircraft, regulating power for mission critical equipment, or ensuring safe operation of the reactor, Northrop Grumman has leveraged systems engineering excellence into every aspect of our product offering.

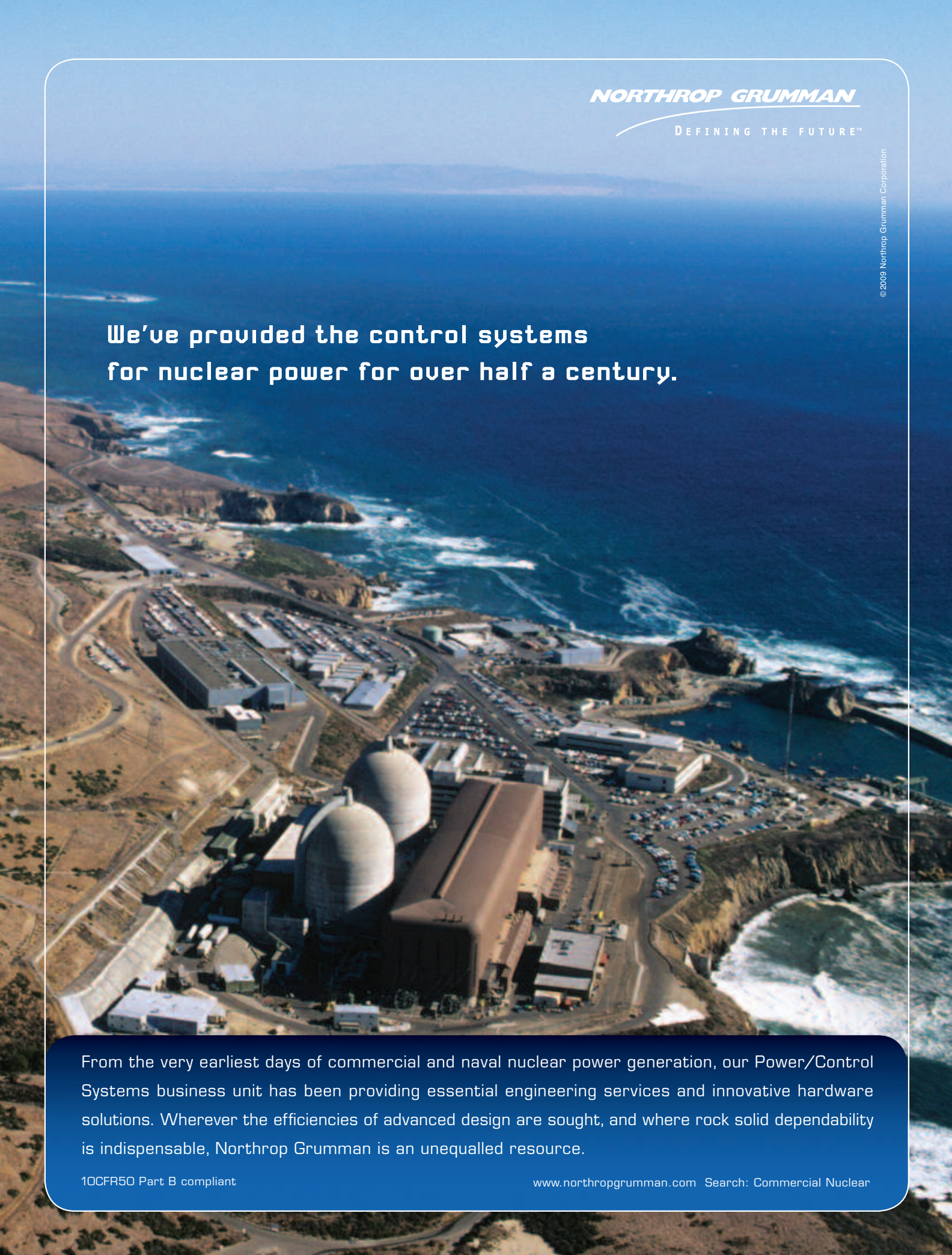
The Nuclear Navy maintains a high level of reliability and performance through continued process and technology improvements. Northrop Grumman is fully invested in this disciplined approach and provides systems-based solutions focused on long-term system supportability. Our approach leverages industry trends into multiple generic application designs, which maximizes commonality across the entire nuclear product line. The Nuclear Navy realizes economies of scale for design, fabrication, and support. The outcome is both cost-effective today and supportable tomorrow.

Nuclear Instrumentation and Control Offerings

Design Services • Engineered Solutions • NI Drawer Modules • Reverse Engineering Services • Digital Upgrades and Retrofits • Obsolescence Management

NORTHROP GRUMMAN

Power/Control Systems
410-552-2809 • nuclearpower@ngc.com
www.northropgrumman.com search: commercial nuclear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DEFINING THE FUTURE™
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We've provided the control systems
for nuclear power for over half a century.
From the very earliest days of commercial and naval nuclear power generation, our Power/Control Systems business unit has been providing essential engineering services and innovative hardware solutions. Wherever the efficiencies of advanced design are sought, and where rock solid dependability is indispensable, Northrop Grumman is an unequalled resource.
10CFR50 Part B compliant
www.northropgrumman.com Search: Commercial Nuclear

Providing practical clean energy.

With 50 years of nuclear experience in designing and manufacturing nuclear equipment, B&W is now developing a scalable nuclear reactor, featuring zero-emission operations.

The modular **B&W mPower™** reactor will provide affordable, efficient, passively safe and flexible power. As a single 125 MWe reactor, or as multiple units, B&W is leading the way in providing a progressive nuclear energy solution.

B&W mPower reactor design

Manufactured in North America.
Creating jobs. Generating energy.

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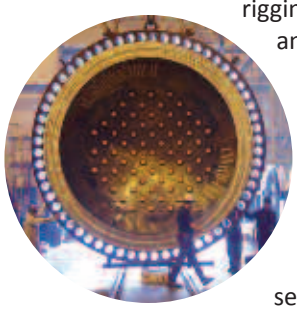
We are nuclear experts with valuable solutions for the commercial nuclear industry.

An Original Equipment Manufacturer

With ASME N-stamp certified manufacturing facilities, The Babcock & Wilcox Company (B&W) is the only North American manufacturer of major reactor plant components including new and replacement steam generators, reactor vessels, RV closure heads, safety-related heat exchangers, pressurizers, control rod drive mechanisms, and other primary-side auxiliary equipment. With more than 50 years in the nuclear industry, B&W is poised to provide quality nuclear components to both operating and new nuclear power plants.

Providing Component Installation and Maintenance Support

B&W has the detailed planning, engineering and construction expertise to successfully install a wide range of large-scale components for the nuclear industry. Our capabilities include steam generator replacement, main condenser replacement, reactor vessel head installation, containment vessel or liner plate fabrication and installation, piping replacement, as well as modularized assemblies and BOP component installation. Our maintenance services include scheduling, rigging and heavy lift analysis and design, procurement and transportation, and safety management. Building on our experience with power plant and environmental equipment installation, B&W provides exceptional engineering and construction services to the nuclear industry.

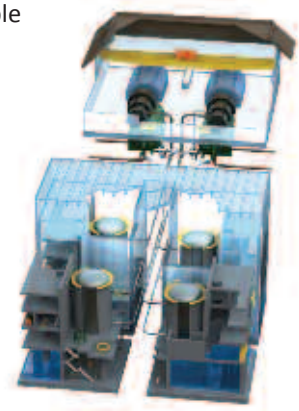


Servicing Steam Generators and So Much More

Our work doesn't end after manufacturing or installation. B&W offers a full spectrum of services for steam generators and BOP equipment. Eddy current, visual inspections and a variety of field service activities are performed by our subsidiary, Intech, Inc., with more than 250 engineers and technicians available to deploy worldwide. B&W also offers comprehensive material evaluation as well as chemical and radchem analytical services through B&W's Lynchburg Technology Center. Licensed by the Nuclear Regulatory Commission, the laboratory is equipped with a hot cell and hot machine shop for conducting NDE and testing on contaminated specimens. B&W continues to develop capabilities in concert with EPRI to meet industry inspection needs.

At the Forefront of Innovation

B&W is shifting the landscape of global energy markets with the B&W mPower™ Reactor – a modular, scalable source of energy with zero-emission operations. The scalable design allows B&W to match the generation needs of the power industry. Each reactor module will be capable of generating 125 MWe, but multiple modules may be arranged in parallel to produce additional power in 125 MWe increments. This Generation III++ design embraces standard nuclear technology that the industry knows to be reliable and efficient without the risk of deploying untested fourth generation concepts.



Additional B&W mPower Reactor Features:

- Passive safety systems
- Spent fuel storage capacity for the 60-year life of the reactor
- Integral nuclear system design
- Five-year operating cycle between fueling
- Modular assembly and construction
- Secure underground containment

With a network of ASME N-stamp certified facilities in North America, B&W is able to design and manufacture components for the B&W mPower Reactor – streamlining construction and reducing field construction costs.

B&W mPower statements are based on the expected final, certified design.

We are Babcock & Wilcox.

For more information on how B&W can provide you with expert, valuable solutions, contact us today.

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434.522.6800

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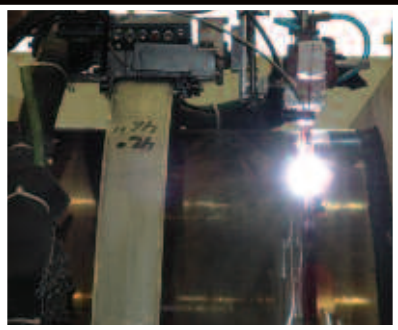
Precision Crafted Solutions

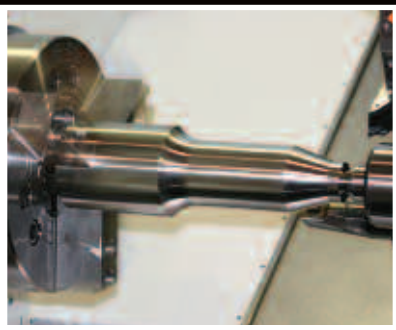
energysteel

State-of-the-Art Operations

We are committed to the future of nuclear power. A new 60,000 square foot, state-of-the-art facility opened in January 2008; firmly placing 40 tons of lifting power behind more than a quarter century of trusted experience in providing our industry the following quality products and services:

- Engineering
- Design
- Fabrication
- Machining
- Reverse Engineering
- Plating/Painting/Coating
- On-Site Support
- Project Management
- ASME Code Welding
- Raw Materials
- Obsolescent Spare Parts
- Weld Overlay Cladding/Hardfacing





SUB-COMPONENTS ***LARGE COMPONENTS*** ***SPECIALTY WELDING*** ***PRECISION MACHINING***

To learn more about extended nuclear support, please visit

www.energysteel.com

N NPT NS U R

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email: sales@energysteel.com

Energy Steel & Supply Co. is a
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EXPERIENCE MATTERS

27 YEARS OF PRECISION CRAFTED SOLUTIONS

"Energy Steel has evolved technically into a fabricator of major components dedicated exclusively to the Nuclear Power Industry. Our growth has been encouraged and supported by the nuclear utilities. Energy Steel has earned the confidence of the nuclear utilities by fabricating complex critical components meeting the most stringent nuclear quality requirements. We always welcome a challenge and look forward to continuing service to the existing nuclear fleet as well as the nuclear renaissance."

Allan Valentine
Business Development Manager / Partner

ASME Section III, Class 1,2,3 Pumps and Valves

Main Steam Isolation Valves
Containment Spray Header Valves
Feedwater Isolation Valves
Automatic and Manual Strainers
Positive Displacement Pumps
Horizontal Sump Pumps
Vertical Sump Pumps

ASME Section III Class 1,2,3 Piping Systems and Supports

Reactor Coolant System Pipe Spools
Feedwater Pipe Spool Pieces
Rolled and Welded Pipe
Steam Generator Upper Lateral Supports
Main Steam Whip Restraint Supports
Core Support Structures
ESW Pipe Supports
Cable Tray Supports

ASME Section III, Class 1,2,3 & MC Pressure Vessels

Accumulator Vessels
Auxiliary Feedwater Tanks
Nitrogen Accumulator Tanks
Heat Exchangers
Spent Fuel Pool Heat Exchangers
RHR Heat Exchangers
RBCCW Heat Exchangers
Emergency Diesel Generator Heat Exchangers
Coil Type Heat Exchangers

Bechtel: The First Name in Nuclear

WORLD LEADER IN NUCLEAR INDUSTRY

Bechtel has been the active leader in the nuclear industry for more than 60 years.

- More than 74,000 MW of nuclear design, construction, and operating plant support experience on over 150 plants worldwide
- Maintenance and Operating Contractor for seven U.S. National Laboratories
- Engineering services and/or construction services for over 88% of the U.S. nuclear power plants
- Ranked #1 overall contractor in the U.S. by Engineering News-Record since 1998
- Ranked #1 in power by ENR since 1996

NEW GENERATION AND DOE SUPPORT ACTIVITIES

Bechtel's new nuclear generation activities include:

- Browns Ferry Unit 1 restart
- Watts Bar Unit 2 completion
- Construction and Operating License applications
- Early Site Permits
- Design certification support of reactor technology suppliers

STEAM GENERATOR AND REACTOR PRESSURE VESSEL HEAD REPLACEMENT

Bechtel's industry achievements include:

- 34 steam generator replacements completed or ongoing and 8 reactor pressure vessel head replacements completed
- Shattered the world record by 8 days by replacing four steam generators and a reactor head in 55 days
- Lowest U.S. SGR accumulated radiation exposure

NUCLEAR OPERATING PLANT SERVICES

Bechtel offers a comprehensive array of operating plant services, including:

- Engineering, licensing, and design modifications
- Plant maintenance and modifications
- Planning, scheduling, and cost control
- Power uprates
- License renewals
- I&C digital control upgrades
- Equipment qualification

BECHTEL

bechtel.com

Zachry offers full-service capabilities in emerging U.S. nuclear market

At the dawn of a new generation of nuclear power, Zachry uses its time-tested skills and innovative thinkers to take nuclear into the future. With full-service engineering and construction capabilities, Zachry, including its subsidiaries Zachry Nuclear, Inc. comprising Zachry Nuclear Engineering, Inc. and Zachry Nuclear Construction, Inc., brings 85 years of construction expertise together with more than 30 years of industry-specific engineering knowledge.

Zachry Nuclear

"Zachry Nuclear is an exciting, emerging player in the construction and engineering services portions of the nuclear industry," said Keith Manning, Zachry Nuclear chairman. "Zachry's 80-plus years of building major generation units coupled with the strong technical service capabilities of Zachry Nuclear Engineering is proving to be a formidable combination."

The formation of Zachry Nuclear and the full integration of Zachry Nuclear Engineering gives customers the unique option of a full EPC firm, providing services ranging from early design through startup.

"We build on our strong culture of safety, collaboration and values in the revitalization of the nuclear industry," Manning said. "We stand ready to serve our customers with cost-effective, high-quality engineering, project management and construction of both ongoing plant modifications and new build nuclear."

Zachry Nuclear Engineering

Zachry Nuclear Engineering provides engineering, design and project management services to the nuclear power industry through the skills of experienced mechanical, electrical, controls, civil and structural design professionals. Engineers in both the Groton, Conn. and Chicago, Ill. offices are experienced in power plant systems, engineering analysis and modification package development.

"Zachry enjoys a long history of private ownership with shared values," said Mark Mills, president of Zachry Nuclear Engineering. "We look forward to a bright future and to strengthening our relationships and capabilities with the current fleet of operating nuclear facilities."

Zachry Nuclear Construction

Zachry Nuclear Construction, based in San Antonio, brings decades of experience in the power industry to the forefront of nuclear unit construction. As a top-ranked power provider, Zachry has led the industry in quality, service and integrity for more than 50 years.

"This industry represents a significant opportunity for growth over the short- and long-term horizon and is well-suited to Zachry's existing strengths in large-scale engineering and construction," said Ed Bardgett, president of Zachry Nuclear.

A true EPC provider, Zachry is engaged in the *planning, building* and *renewing* of the world's most critical infrastructures including emerging energy, power, cement, refining and nuclear facilities. Zachry remains a family-owned, privately held company whose values—*Safety, Commitment, Trust, Integrity, Service, Economy* and *Skill*—lead every decision, every time. Founded in 1924, Zachry's long list of experience has led to more than 6,000 completed projects in the United States and abroad.

As a *collaborative, practical* and *visionary* force, Zachry is one of the largest direct-hire, merit-shop contractors in the United States. *Engineering News-Record* (ENR) ranks San Antonio-based Zachry No. 23 in the Top 400 Contractors 2009; No. 44 in the Top 500 Design Firms 2009; and as a top firm in the power, fossil fuel and nuclear markets. Please visit **www.zhi.com** for more information.

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Griffolyn® internally reinforced polyethylene laminates have been designed for a wide range of prospective applications. When your project requires a product that protects against weather, contaminants and other elements, specify Griffolyn®. It is performance engineered to be highly resistant to tears and punctures with an exceptional outdoor service life. Whether storing or protecting equipment or isolating and containing contaminated materials, Griffolyn® products may be designed and fabricated to your specific needs and requirements.

SPECIAL FEATURES

- Reinforced polyethylene laminate resists punctures and tears
- Fire retardant for safety applications around critical materials and work areas
- Anti-static
- Corrosion inhibitors
- Heat shrinkability
- UV stabilization protects the material from degradation and ensures an outstanding service life
- A wide range of colors and custom printing available
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- Custom fabrication is available to meet your exact specifications

ADVANTAGES

- Maintain schedule
- Stay on time and within budget
- Reduce cost

GRIFFOLYN® OFFERS UNMATCHED PERFORMANCE AND OUTSTANDING SERVICE LIFE.

All Griffolyn® materials are performance engineered for the most difficult applications while providing an exceptional ability to withstand extended exposure to weather. Griffolyn® products can protect your investments year round. These high quality plastics can be produced with specialized properties including fire retardancy for safety applications around critical materials or work areas, or anti-static and corrosion protection for sensitive equipment. Cover your investment and protect it with Griffolyn®.

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Westerman: Continued success. . . for nearly a century

In the brief span of two decades, The Westerman Companies emerged as a trusted supplier to many large firms in the Energy Industry.

The company has long been one of the world's largest producers of enriched uranium hexafluoride (UF6) storage and transportation cylinders.

A legacy of excellence

Behind the Westerman Companies' success is a corporate history of manufacturing and service excellence that began with the production of natural gas and petroleum equipment in 1909. Today Westerman also produces a variety of containers, pressure vessels and equipment for use in ***all three segments or the nuclear market; enriched uranium storage & transportation radio active waste and remediation containers, and power plant components and subassemblies***. In addition Westerman has the capability to certify material for use in nuclear applications.

What distinguishes Westernman products is the attributes the company's founders brought to their work instinctively; an intense focus on customer needs, a demonstrated commitment to customization, and the ability to establish a culture of continuous quality, safety and performance. These attributes have always been the hallmark of Westerman's product lines.

Volume, product line growth

The demand for Westerman products is growing rapidly in both U.S. and international markets. Although still considered a small company by **SBA** standards, Westerman has both custom build and production run manufacturing capability, and can accommodate limited orders as well as large-quantity demands. The company's manufacturing and fabrication facilities have steadily grown in size and now exceeds 250,000 square feet...and is still growing.

Superior customization capability

Capabilities in **fabrication**, **machining** and **testing services** with experience in light and heavy gauge materials allow Westerman to satisfy customer needs and specifications in a variety of mediums ranging from stainless and carbon steel to metal alloys and special clad materials.

Above & beyond quality assurance

The scope and depth of Westerman's manufacturing experience combined with established quality assurance processes enable the company to meet stringent **NQA-1** standards set by **A.S.M.E.** and those of the **NRC** (Nuclear Regulatory Commission), including **10 CFR 50 (Appendix B)** and **10 CFR 21 subpart (h)** requirements.

The company likewise meets the most rigorous standards established by the U.S. Department of Energy, the U.S. Corps of Engineers, the U.S. Department of Defense, and numerous prime and secondary government contractors involved with the production and handling of nuclear material and products.

Westerman's Nuclear Division, is proud to have achieved **A.S.M.E.** Nuclear Certification in **five (5) areas**, **"N"** (manufacturing of vessels, piping, storage tanks, support structures), **"NS"** (fabrication), **"N3"** (storage and transport containments), **"NA"** component assembly and **"NPT"** (material certification).

The overarching imperative: SAFETY

From the office to the production floor, decisions made at Westerman are informed and molded by a nuclear safety culture that is as powerful as it is pervasive.

Westerman Nuclear

World Class

NQA-1 and ISO 9001/2000

10 CFR 50 APPENDIX B

ASME SECTION III & VIII

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NA N N3 N PT NS P U UM R

Westerman Companies

Westerman Nuclear LLC is a wholly owned subsidiary of the Westerman Companies

Dedicated to
QUALITY PRODUCTS
and SERVICE
since 1909

Problem?

NLI's sole focus is to effectively address the needs of the nuclear industry's most demanding applications, providing answers for all types of equipment problems including electrical, mechanical and instrumentation.

SOLUTION EXAMPLE 1

Because of our long standing relationship with Trane, NLI is able to provide the innovative Adaptiview digital upgrade for chillers. NLI's scope includes the design, fabrication, mock-up testing, dedication testing, qualification, installation, and start-up of the control system. These units can be used on literally any chiller in the nuclear industry. Supplied as pre-packaged kits, Adaptiview units are prequalified for seismic, mild environment, V&V and EMI/RFI, and of course they can be provided for either safety- or nonsafety-related applications. Two NPPs are benefiting from these superior digital upgrades, and the word is spreading.

SOLUTION EXAMPLE 2

In conjunction with our teaming partner Square-D Services, NLI designs, manufactures, qualifies and supplies MASTERPACT® low voltage breakers to replace old maintenance-intensive breakers such as GE AK, AKR and Westinghouse DB, DS and ABB K-Line breaker series. This equipment is furnished as pre-qualified* replacements for existing breakers, requiring *no field changes* to install, and each unit is amazingly *maintenance free* for up to 10,000 "operations or 40 years. Fourteen nuclear plants have selected the MASTERPACT to replace low voltage breakers, and several more are looking at the benefits of this innovative equipment.

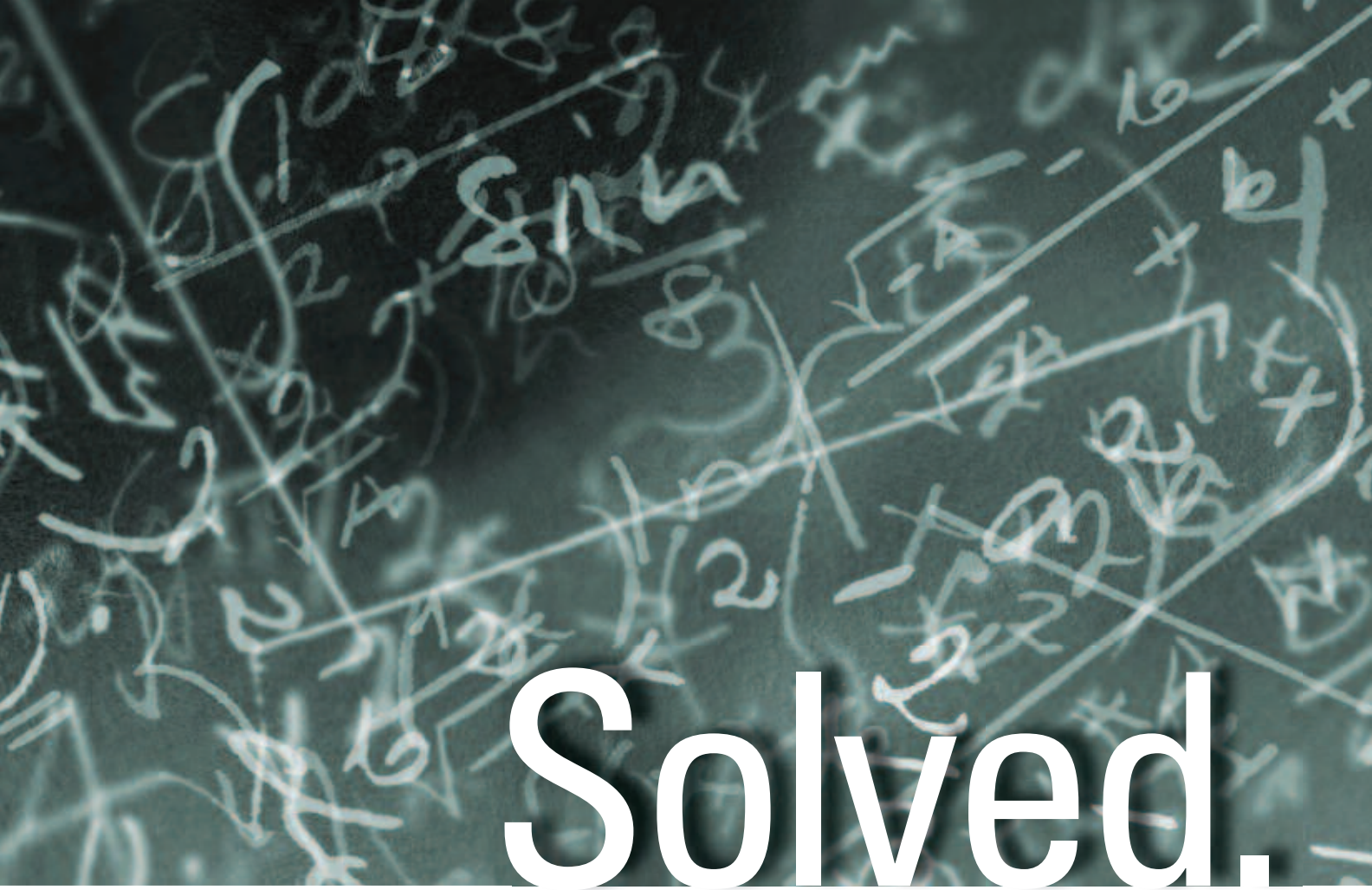
SOLUTION EXAMPLE 3

NLI manufactures, tests and supplies accumulators and corresponding parts as ASME Section III "N-Stamp" components. Provided as direct replacements for Greer Hydraulic, Inc. accumulators, these parts are produced under NLI's ASME Section III Certificate of Authorization to the original design documents, ensuring proper fit up with the existing installed base. Responsibility is held by NLI for all aspects of design, manufacturing, NDE and testing to meet unique specifications. Currently, five facilities have installed our N-Stamp accumulators with great results.

NLI consistently meets the exacting requirements of our clients, and we are able to support the nuclear industry with proven, state-of-the-art solutions.

* NLI has prequalified the subject equipment in accordance with IEEE Std. 323, IEEE Std. 344, IEEE Std. 7-4.3.2 and EPRI TR-102323, exceeding all requirements.

MASTERPACT® is a registered trademark of Square D Services.



Solved.

Challenges can be anticipated or unexpected, complex or straightforward, or an overwhelming combination.

Add that to the mire of on-going difficulties associated with managing daily operations, and you've got the recipe for a real conundrum. That's where NLI comes in. Whether it's new construction and OEM capabilities or ongoing maintenance and upgrading issues, we are ready to take on any obstacle the nuclear industry faces. We truly think outside the box, finding innovative ways to provide state-of-the-art equipment and services that address current requirements and will stay reliable and effective for years to come. Our track record proves it—we are constantly developing new processes and procedures for equipment and other solutions that help our clients supply the world with nuclear power. Next time your facility is faced with seemingly insurmountable challenges, let us provide you with creative anwers.

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We offer nuclear power customers a broad spectrum of high-level application solutions from a single point of contact. We work to bring superior products, services and the expertise you require. Choose from a variety of instrumentation, sold under the Thermo Scientific brand, to optimize your process.

Our products and services help power producers satisfy regulatory and safety requirements. They help customers achieve maximum efficiency and profitability to meet demand while generating low cost, clean and reliable power. Our integrated solutions assist you in exceeding customers' demands while delivering peace of mind.

Integrate Thermo Scientific products throughout your power process (see Fig. 1). Look to one company that can offer you solutions with a depth of products to fit your application and your environment throughout your operations.

Want to learn how Thermo Scientific products can benefit you and your plant?

- Neutron Flux Monitoring
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- Level and Density Measurement
- Custom Radiation Shielding
- Industrial Hygiene
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- Water Analysis
- Laboratory Informatics
- Radiation Tolerant Imaging (Inspection and Monitoring)
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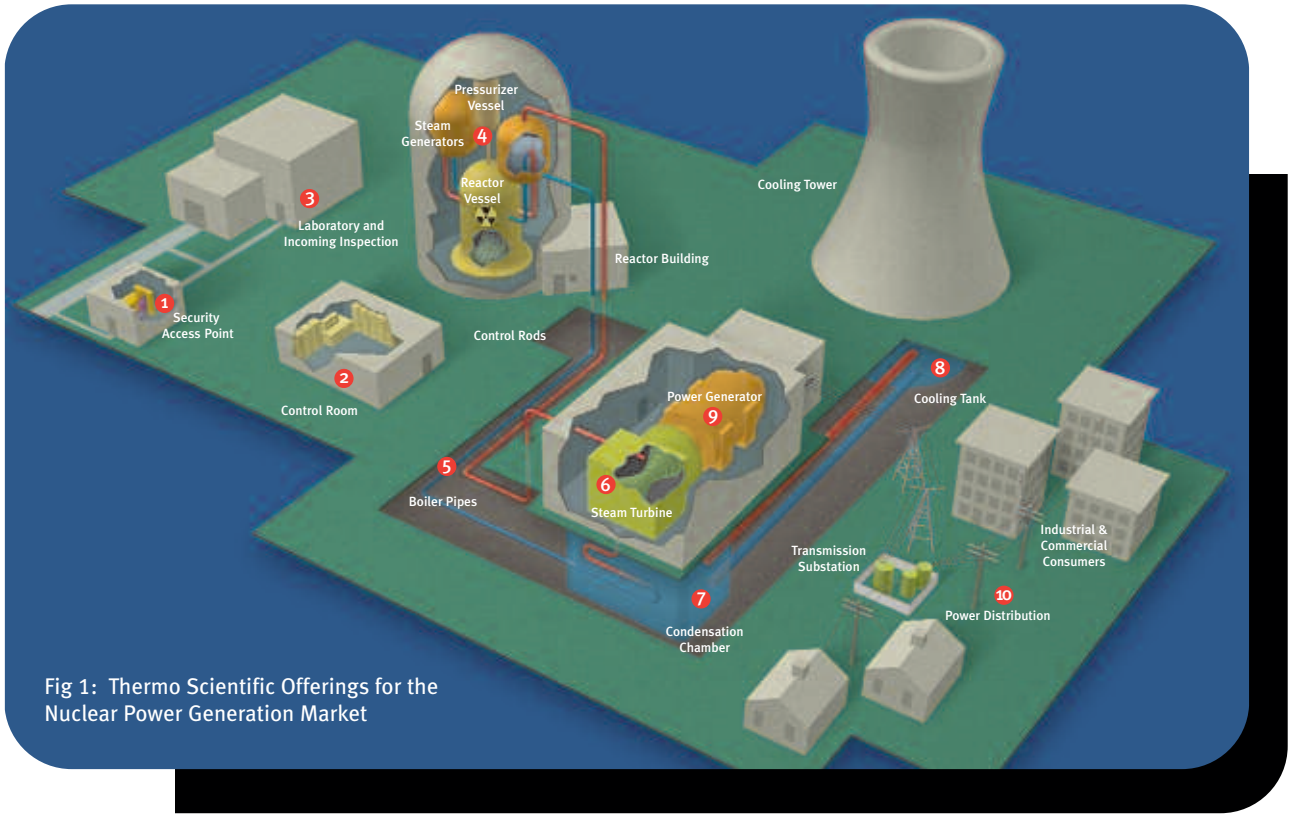

Fig 1: Thermo Scientific Offerings for the Nuclear Power Generation Market

LEGEND KEY

1 SECURITY ACCESS POINT
- Radiation measurement and protection monitoring

2 CONTROL ROOM
- Radiation measurement and protection monitoring
- Data acquisition, monitoring and management
- Alarm monitoring
- Neutron flux monitoring
- Reactor protection systems
- Audible count rate drawers
- Boron dilution monitoring
- Thermo margin monitoring
- Class IE qualified safety-related cabinets
- Class IE qualified power supplies
- LCD digital meters

3 LABORATORY AND INCOMING INSPECTION
- Radiation measurement and protection monitoring
- Data acquisition, monitoring and management
- Weld and alloy verification
- Informatics

4 REACTOR BUILDING
- Radiation measurement and protection monitoring
- Data acquisition, monitoring and management
- Level measurement
- Ex-core neutron flux detectors for source range, intermediate range and power range reactor power monitoring
- Class IE safety-related post-accident qualified cable assemblies
- Audible count rate during shutdown maintenance periods
- Installed gamma area monitors
- Boric acid storage monitoring
- Water analysis monitoring

5 BOILER PIPES
- Cooling water and condensate flow measurement

6 STEAM TURBINE
- Radiation measurement and protection monitoring
- Data acquisition, monitoring and management

7 CONDENSATION CHAMBER
- Data acquisition, monitoring and management
- Level measurement

8 COOLING TANK, COOLING TOWER AND RESERVOIR
- Data acquisition, monitoring and management
- Influent and discharge flow measurement
- Density and level measurement
- On-line water analysis

9 POWER GENERATOR
- Data acquisition, monitoring and management

10 POWER DISTRIBUTION
- Data acquisition, monitoring and management

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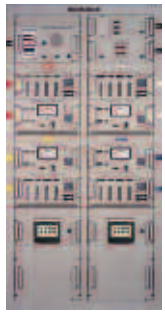
To learn more, visit www.thermo.com/nuclear or call 1 (800) 488–4399.



Thermo Scientific Neutron Flux Monitoring Systems —
Qualified for Post-Accident Monitoring and Class 1E Safety-Related applications.

Moving science forward

Thermo SCIENTIFIC

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Holtec International: a global leader in power generation technologies and nuclear waste management.

Holtec International provides engineered equipment and services under 10CFR50, 10CFR71, and 10CFR72 regulations and IAEA standards (where applicable) to nuclear plants around the world. Holtec prides itself on the substantial number of awarded turnkey contracts wherein Holtec engineers, manufactures, and installs the equipment and associated systems with an undivided responsibility for completion.

Holtec is a proven innovator that continually discovers how to stay a generation ahead. Holtec essentially invented the ultra-high-density wet storage technology during the '80s and is credited with pioneering Multi-Purpose-Canister (MPC) technology in the '90s (Holtec was the first in the U.S. to license and manufacture systems that employ the MPC technology). The technical staff employed by Holtec formulates innovative solutions to operational and technological problems. The company secures, on average, five patents each year. Our most recent innovation is the HI-STORM FW, which is uniquely designed to maximize storage capacity and heat load, minimize occupational dose, permit storage of severely deformed or canisterized fuel, and to be extremely resistant to deleterious flood and wind. The HI-STORM FW basket is manufactured entirely from METAMIC®-HT. This advanced material provides structural support, neutron absorption, enhanced heat transport, and is low weight. The basket is configured to hold either 37 PWR assemblies (MPC-37) or 89 BWR assemblies (MPC-89), in addition to VVER 440, VVER 1000, or RBMK fuel types. Holtec is also proudly licensing the first underground storage system, HI-STORM 100U, which is essentially impregnable to the post-9/11 terrorist threats. In addition to wet and dry systems for managing spent nuclear fuel, Holtec also provides custom engineered steam surface condensers, feedwater heaters, and safety related heat exchangers designed by Holtec's Power Plant Component Division (PPCD).

Holtec's vertical integration allows control over quality, schedule, and cost and provides customers fully integrated solutions. Holtec Manufacturing Division is wholly-owned plant in Pittsburgh, Pennsylvania with over 450,000 sq.ft. of manufacturing space, 400 tons of lift capacity, state-of-the-art machinery and all needed ASME nuclear and non-nuclear stamps (N1, N2,N3,NDT, etc.). At the end of 2008, Holtec expanded its manufacturing capabilities with the purchase of two aluminum manufacturing plants in Ohio and the purchase of METMIC® LLC (now Nanotec Metals Division or NMD). With these acquisitions, Holtec expects to synergize the ongoing R&D work in powder metallurgy at NMD and the manufacturing savvy of the Ohio plants to develop and offer a new generation of supermetals to users in need of advanced materials.

Holtec International is headquartered in Marlton, New Jersey, which is located in the Philadelphia metropolitan area, and has operational centers around the globe. To learn more about Holtec, call Joy Russell at 856-797-0900 Ext. 655.

Quality Manufacturing Capabilities and Capacity for Growth

AT&F Nuclear, Inc. has earned a reputation for quality and service by providing steel solutions to customers since 1940. Steel, alloys and non-ferrous materials are transformed into large-scale precision fabrications, using equipment that is among the largest and most powerful in the world.

The company serves nuclear plant operators, U.S. government contractors, OEMs and fabricators worldwide. AT&F Nuclear offers a unique combination of equipment capabilities, staff and quality systems that make them a reliable choice for a metal service partner and an equipment fabricator.

It employs the most powerful laser cutting systems in the industry, and one of the longest press brakes anywhere. Its rolling and forming capacity easily accommodates heavy wall, long length shapes and cylinders constructed in a single piece. Examples are engineered steel components for nuclear and fossil power generation. These include reactor internals, structural supports, containment parts, heat exchangers, pressure vessels, piping systems, tanks, safety-related heavy lift rigs, containers for storing and transporting radioactive materials and material upgrades.

AT&F Nuclear works with all types of plate, cast and forged materials: carbon, stainless, alloy and high-hard abrasion resistant steel, plus titanium and other advanced metals.

Quality systems include: ASME, "N", "NPT", "N3", "NS", "U" and "S" stamps. Their ISO 9002 compliant quality system meets or exceeds stringent military requirements.

Contact AT&F Nuclear to discuss your specific nuclear needs.

AT&F Nuclear INC.

800-544-5316
info@atfnuclear.com

WCS Continues to Expand Capabilities
July 2009 Status Report

With the approval of the Low Level Radioactive Waste Disposal License, Waste Control Specialists LLC (WCS) holds the most comprehensive licenses of any company in the United States to treat, store and dispose of toxic, hazardous and low-level radioactive waste. WCS' operations are licensed and regulated by the Texas Commission on Environmental Quality (TCEQ), U.S. Environmental Protection Agency (EPA) and Nuclear Regulatory Commission (NRC).

Major Current Initiatives

General Electric Project – Under authorization from the EPA, WCS entered into a contract with General Electric Company (GE) to dispose of PCB sediments dredged from the upper Hudson River in New York state. Dredging began May 15, 2009, and the first shipments arrived by rail car at the WCS site in late June 2009.

- Phase I – Disposal of approximately 390,000 tons of sediment.
- Phase II – If needed, disposal of 2.4 million tons of sediment to be dredged between 2011-2015. Phase II depends of results of Phase I.
- In connection with the GE Project, WCS expanded its on-site rail line, added unloading equipment, constructed a covered transfer building to unload rail cars, and added multi-ton capacity dump trucks.

Byproducts Disposal – With the U.S. Department of Energy (DOE) approval, WCS has been storing Cold War-era radioactive material from Fernald, Ohio since 2005. The TCEQ granted
WCS a license to dispose of radioactive byproduct material in May 2008

- Construction of Byproduct disposal facility began in August 2008.
- July 2009 - Landfill construction complete.
- Disposal of 3,776 canisters, or 750,000 cubic feet, of Fernald byproduct material is scheduled to begin in August 2009.

Low-Level Radioactive Waste Disposal – TCEQ granted WCS a license to dispose of low level radioactive waste on January 14, 2009 for both Texas Compact material and federal waste. License to be signed following acquisition of remaining mineral interest ownership (approximately 1 percent). Final state condemnation hearing set for August 11, 2009.

- Disposal operations scheduled to begin September 2010 following one year for facility construction
- Capacity:
    - Texas Compact Waste Disposal Facility - 2,310,000 cubic feet
    - Federal Waste Disposal Facility – 26,000,000 cubic feet

WCS is a subsidiary of Valhi, Inc. (NYSE: VHI). Valhi is engaged in the titanium dioxide pigments, component products (security products, furniture components and performance marine components) and waste management industries.

WASTECONTROL
SPECIALISTS LLC

Guided by Good Science… Unsurpassed Geology… The Best Technology

WASTECONTROL
SPECIALISTS LLC

On June 8th, 2009 Waste Control Specialists LLC received the first container of thermally processed Class C low-level radioactive waste from Studsvik, Inc. for interim storage pending development of a permanent disposal facility. WCS has been processing and storing low-level waste at its Andrews County facility since 1998.

For more information contact David Cronshaw at:
(801) 944-2464 or dcronshaw@valhi.net

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WCS Corporate Address
Three Lincoln Centre, STE 1700
5430 LBJ Freeway, Dallas, TX 75240

WCS Site Physical Address
9998 Highway 176 West
Andrews, TX 79714

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NUCLEAR / MILITARY / EXOTIC MATERIALS FABRICATORS

- Penn Iron Works is a custom plate fabricator, machine shop, assembly facility and testing site operating under highly structured and documented quality assurance programs coupled with detailed project execution.
- Penn Iron Works is a supplier to customers in commercial nuclear, Navy nuclear, defense, pressure vessel and structural component industries.
- Penn Iron Works has six (6) decades of experience involving complex components and multiple material specifications.

– Reading, Pennsylvania location
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50 ton Crane Lift Capacity
– Heat Treating furnace
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– CNC Burning Table
  • to 6" in Stainless
  • to 21" in carbon steel
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– Wet Painting booth
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– 200 + qualified welding procedures to ASME 1X and military standards (SMAW, GSAW, GTAW, FCAW, SAW processes)
  • Carbon Steels
  • Stainless Steels
  • Exotic Ferrous
  • Non-Ferrous

✓ NPT certificate N-2927 expires 28 JE 2011
✓ NS certificate N-3175 expires 28 JE 2011
✓ U certificate 18,105 expires 18 NV 2009
✓ R certificate R-6985 expires 18 NV 2009
✓ S certificate 35,174 expires 18 NV 2009
✓ Military Technical Publications
  • S9074-AQ-G B- 010/248
  • S9074-AR G B - 010/278
  • T9044-AS-G B - 010/271
  • NAVSEA 0900 – LP-003-8000
✓ ASME Section V Inspections
  • LPI Procedure 212-03
  • MPI Procedure 213-92
  • Visual procedure ASME V Art. 9
✓ Radiography & ultrasonic inspections via audited, approved suppliers

MIRION TECHNOLOGIES

Mirion Technologies Sensing and Imaging Systems Divisions, featuring IST branded products, are worldwide leaders in the nuclear industry. The portfolio of IST branded products has successfully grown and solidified a strong market position. Mirion Technologies offers products with a range of operational safety and non-safety radiation monitoring equipment such as its IST, IST-Rees, and IST-Conax Nuclear brands.

Sensing Systems Division

The Sensing Systems Division (SSD), maker of the IST and IST-Conax range of products, provides the nuclear power industry with in-core and out-of-core detectors and electrical penetrations. In addition, Mirion's SSD manufactures the associated electronics, temperature sensors, thermocouples, special purpose valves, connectors, cable/connector assemblies and electrical conductor seal assemblies.

Imaging Systems Division

The Imaging Systems Division is a leader in the sale of highly specialized closed circuit camera systems used for inspection and surveillance in difficult and hazardous environments, supplying cameras for all stages of the nuclear life cycle, from construction through operation, to decommissioning and waste management. Our products are used in nuclear power plants, nuclear reprocessing plants and waste management facilities. The IST-Rees product line also includes a wide range of accessories, such as lighting attachments and positioning devices, that allow operators to carry out a variety of monitoring and inspection tasks. From small, low cost cameras to high performance viewing systems, the Imaging Systems Division provides an imaging solution for the nuclear market.

Mirion Technologies

For more than 50 years, Mirion Technologies has delivered products and services that help to ensure the safe and efficient operation of nuclear facilities. Our customers rely on our solutions to protect people, property and the environment from nuclear and radiological hazards. Mirion operates facilities in North America, Europe and Asia. Mirion's strength stems from its five divisions: Sensing Systems, Imaging Systems, Health Physics, Dosimetry Services and Radiation Monitoring Systems. These divisions provide high quality products and services to a wide range of customers including nuclear power plants, militaries, government agencies, research labs, hospitals, dental offices, veterinary offices and other medical facilities. For more information about our products and services visit: www.mirion.com.

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Out-of-Core Detectors | In-Core Detectors | Electrical Penetrations | CCTV Inspection and Surveillance Cameras & Systems

CANDU Services – high-quality products and services

to help you achieve success . . .

CANDU® nuclear power plants consistently outpace the competition with superior engineering and design.

With a high capacity factor, and features such as on-power fuelling and two independent shutdown systems, CANDU nuclear power plants outperform all competing technologies.

When it comes to servicing your nuclear plant, we develop effective solutions that increase safety, optimize performance and extend plant design life. Our products include our ECC strainers that hit the target on safety by featuring passive operation and a compact design that can accommodate layout restrictions.

AECL: partnerships that power the world.

AECL

Atomic Energy of Canada Limited **www.aecl.ca**

U.S. regulator praises ECC strainer testing

Atomic Energy of Canada Limited (AECL)—a full-service nuclear technology company—is a recognized leader in ECC strainer design for both CANDU® and PWR reactors.

AECL developed the Finned Strainer™, which maximizes filtration area within an available volume for minimal space impact. AECL designs, fabricates and installs Emergency Core Cooling (ECC) system strainers for existing nuclear power plants as well as for new-build projects. ECC strainers filter ECC sump water so that the ECC pump and associated equipment functions properly in the event of a Loss-of-Coolant Accident (LOCA).

AECL also provides analysis, testing and design services to ensure that plants meet the latest regulatory requirements in this area. Major testing facilities at its Chalk River Laboratories in Ontario allow AECL to effectively customize and optimize strainers for individual nuclear power plants (NPPs)—and to analyze the effects of plant-specific debris build-up and water chemistry, including the combined effect of these factors. These testing facilities are available to other utilities for testing programs. One was built under contract to Dominion Generation and allows multiple tests to be carried out simultaneously.

AECL's Finned Strainer

AECL's innovative Finned Strainer™ modules consist of a set of perforated fins attached to a common header, with the fins providing most of the strainer surface area. The strainers feature passive operation, a compact design to minimize footprint and low head loss under extreme conditions. The flexible, modular design can overcome acute layout restrictions, while meeting filtration-sizing needs.

Currently, AECL-designed strainers have been installed in 50 NPPs around the world—in Canada, the US, France, Argentina and Romania.

Design and Testing for U.S. PWRs

A recent project, completed in 2008, involved supplying ECC strainers for six Dominion Generation units.

The project illustrates AECL's strong design and analysis, testing, manufacturing, installation, project management and licensing support capabilities. It analyzed plant-specific conditions of system function, water level, debris mix, seismic loads and available floor space at each plant. Designs were developed and tested to confirm the required strainer surface area and fin pitch. The design was optimized for thin-bed and thick-bed debris loadings, and tests were performed to validate the design and ensure it met requirements.

An AECL Finned Strainer was successfully designed, tested and installed at each of the plants. Subsequent plant-specific water chemistry effects were analyzed and tested for plant-specific conditions to confirm the effectiveness of the strainers with chemical effects combined with debris loading.

Dominion Generation and AECL designed, built and commissioned an additional multi-loop test facility, allowing six independent tests to be run concurrently.

Chemical effects tests are performed in the new multi-loop strainer test facility at AECL's Chalk River Laboratories. The facility, which can run six concurrent tests, was designed, built and commissioned by AECL for Dominion.

The new facility was installed in 12 weeks—a testament to the close collaboration between Dominion Generation and AECL.

In an audit report released by the U.S. Nuclear Regulatory Commission (NRC), they highly praised AECL's ECC strainer testing as having "fully addressed chemical effect issues with the regulator."

In conclusion, the NRC commented on AECL's thoroughness and attention to detail. NRC staff reported that AECL constructed, "a high-quality multi-loop test rig . . . to complete the chemical effects head loss testing in a timely manner."

AECL

Atomic Energy of Canada Limited **www.aecl.ca**

Rigging International Forms Strategic Alliance With Sarens

A strategic alliance has been formed between Rigging International (RI) of Alameda, California and the Sarens Group of Belgium. Effective May 31, 2009, Sarens acquired 100% of the shares of RI, which will continue to operate under its present management and operating structure.

The alliance allows the Sarens Group entry into the US market and greater reach internationally. Rigging International's position is similarly strengthened domestically and worldwide.

The Sarens Group, with headquarters in Wolvertem, Belgium, has been active in crane rental and heavy lifting and special projects since 1955. Sarens operates in 25 countries and has more than 2,000 employees.

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Engineered Solutions for:

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Rigging International

1210 Marina Village Parkway, Alameda, California 94501, USA
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Email: info@rigginginternational.com www.rigginginternational.com

Rigging International was founded in 1969 and is celebrating its fortieth anniversary this year. RI maintains its world headquarters in Alameda, CA and is a major player in the heavy lift rigging and heavy haul transport industry. They have offices in Southern California, New Jersey, Ohio, Montana and Tokyo.

For further information about the merger, please contact either Victor Rollandi at Rigging International, 1 (510) 865-2400, vlrollandi@rigginginternational.com, or Hendrik Sarens at Sarens, 32 (0) 52 319 397, hendrik.sarens@sarens.com.

Both Rigging International and Sarens have substantial domestic and international nuclear power work history. Recent accomplishments by RI includes Nuclear Power Plant Projects in the U.S. and Japan:

- Reactor Head Replacement
- Reactor Pressure Vessel Package Removal
- Reactor Core Internals Removal
- Steam Generator Replacement
- Steam Generator Disposal
- Feedwater Heater Replacement
- Assembly of Dry Cask Storage Modules

Nuclear work history for Sarens includes Power Plants in Belgium, France, Hungary, Slovenia, Finland and Spain.

The Rigging International and Sarens combination will result in equipment, design, project management and execution synergies that will lead the industry in meeting the heavy lift and heavy haul transport needs of their nuclear power clients worldwide.

For further information about RI's and Sarens' Nuclear Services, please contact Jim Roberts at 1 (406) 543-4427, Kerry Donahoe at 1 (510) 865-2400 or Hendrik Sarens at 32 (0) 52 319 397. Please visit our websites at www.rigginginternational.com and www.sarens.com.

Our Cost-Effective, Internal Pipeline Rehabilitation Services Provide Long-Lasting Solutions

Whether it's circulating water or safety related piping, Miller Pipeline has a cost effective solution that can be installed quickly and professionally. The flagship of Miller's service offerings in nuclear power plants has been our internal joint sealing product, WEKO-SEAL®, which is used to provide corrosion protection from brackish water or terminate troublesome leaks at joints.

The WEKO-SEAL is a cost effective solution that provides outstanding long-term results in part because of the installation techniques we use when placing them. Their design and the physical properties of the seal itself, which is made from a flexible EPDM (Ethylene Propylene Diene Monomer) rubber compound is held in place with hydraulically expanded stainless steel retaiingbands that ensure a bottle tight installation.

The WEKO-SEAL® is installed via man-entry in pipelines with penetration distances in excess of 1,000 feet. The WEKO-SEAL comes in a variety of widths but can also be used for continuous coverage of any distance through our Sleeve/Seal capabilities.

In addition to the WEKO-SEAL, we offer a cured-in-place pipe (CIPP) that is used to reline an existing pipeline of virtually any size or configuration.

The resins used in our MPC ToughTube® CIPP can be designed to meet specific service requirements. Whatever the need might be, or whatever product used, our technicians work closely with staff engineering personnel to formulate and execute all desired outage objectives.

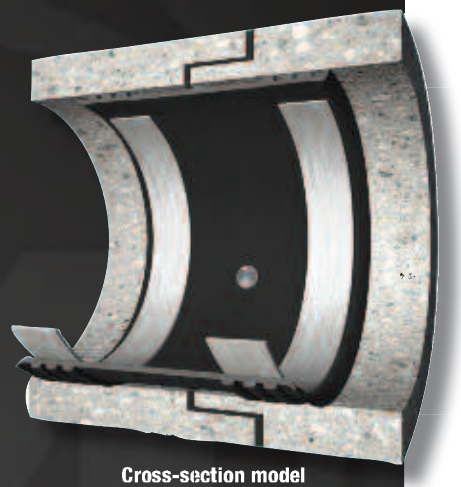
For over 25 years, Miller Pipeline Corp. has served the nuclear industry by providing inspection services, coating repairs, ultrasonic testing, internal joint sealing corrosion prevention, maintenance, video inspection and pipeline cleaning, pipe relining and replacement and more. Miller Pipeline is an industry leader in a number of various trenchless technologies which ensure little to no disruption to above ground facilities or operations. All of Miller Pipeline's technicians are confined-space trained and certified to comply with all requirements of 29CFR 1910.146 Federal OSHA's Permit Required Confined-Space Regulations. Our technicians can quickly gain unescorted access and are able to perform all required activities with short notice.

At Miller Pipeline we understand the stress of refueling outages and view our role as an extension of plant personnel to achieve assigned tasks, on time and in a professional and safe manner.

For additional information regarding Miller Pipeline Corp. please visit our website at millerpipeline.com or call us at 800-428-3742.

What We Can Do For You

- WEKO - SEAL® Internal Joint Seal
- CIPP Installations
- Pipeline Assessment Services
- Certified Coating Applications
- Corrosion Prevention / Maintenance
- UT Testing
- Video Inspections
- Detailed Inspection Analysis



Cross-section model of WEKO-SEAL®

Great people delivering customer-focused, quality-driven, utility solutions

Solving the Brain Drain of the Nuclear Industry:

Capture and manage your company's institutional knowledge for immediate action

FREE White Paper: Learn how to dynamically capture your workers' tribal knowledge and lessons learned for improved efficiency and safety. The following is an excerpt:

In 2006, the IAEA's (International Atomic Energy Agency) report titled Risk Management of Knowledge Loss in Nuclear Industry Organizations stated "There are two other complicating factors. The USA faces the issue of a 'greying' workforce where literally half the current workers will be eligible to retire within the next five years. Secondly, the lead time required to produce an individual capable of safely operating the complex nuclear systems and technologies may exceed the time frame available until substantial retirement of the existing workforce begins."

According to the IAEA it is critical to establish knowledge management programs to "maximize the flow of nuclear knowledge from one generation to the next and attract, maintain and further develop a dedicated cadre of highly competent professional staff to sustain nuclear competence.[1]"

Managing knowledge is a multi-step process which includes the capture, dissemination and utilization of information. The benefits of effective knowledge management are numerous:

- Capture and identify tribal and institutional knowledge
- Increase productivity through easy access to information and reduced impact on work schedules caused by rework and repeatable errors
- Increase safety levels
- Improve/maintain competitive advantage through operational efficiencies
- Minimize the impact of worker mobility
- Maintain high levels of information integrity

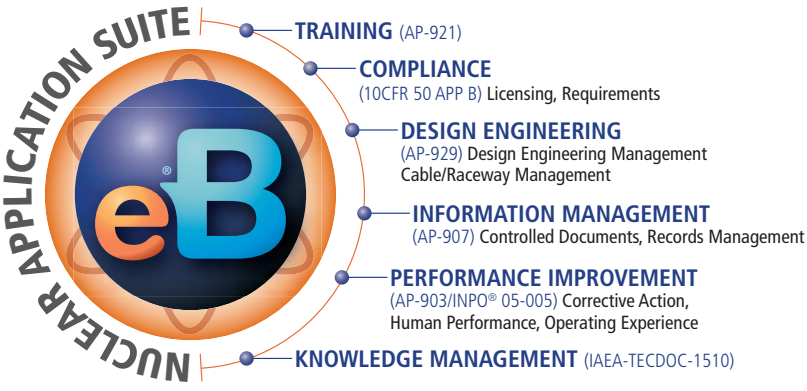
Rather than bury information in static documents, a better approach for managing institutional knowledge is to integrate it with accessible operational processes...

[1]IAEA Nuclear Energy Series No. NG-T-6.2, *Development of Knowledge Portals for Nuclear Power Plants*

Request this FREE white paper today at www.ebfornuclear.com/nn-nkm-wp

Introducing eB Nuclear Knowledge Management

eB Nuclear Knowledge Management joins the eB Nuclear Application Suite, providing an integrated platform for the capture and reuse of institutional information. Just as the other eB for Nuclear applications ensure the integrity of controlled information by uniquely managing connectivity to all other relevant information, eB Nuclear Knowledge Management seamlessly plugs into existing operational processes, capturing knowledge episodes and relating them to information assets so that they can easily be retrieved when needed. This unique approach to knowledge management provides the most efficient access to actionable information by eliminating the need to do separate searches for related knowledge episodes.



Enterprise Informatics serves the leaders of the nuclear industry:

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- CH2M Hill
- Constellation Energy
- EnergySolutions
- Entergy
- Florida Power & Light
- Lockheed Martin IT
- New Brunswick Power
- Nuclear Fuel Services
- NuStart Energy
- Wolf Creek Nuclear Operating Corporation
- Westinghouse Nuclear

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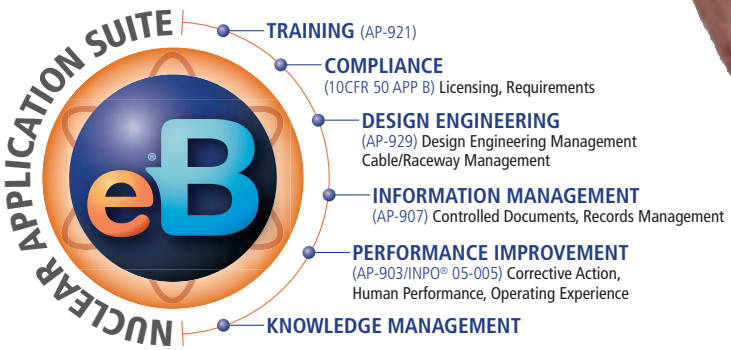
Contact us at 858 625 3000, 800 992 6784 or email to info@enterpriseinformatics.com
www.ebfornuclear.com

Change is inevitable.
How well you control it is purely optional.

> “With eB we’ve been able to improve the rigor of our engineering design change process in accordance with INPO® AP-929 and can ensure that we are compliant with our licensed design basis requirements.”
>
> *— Janice Hoerber, IT Supervisor, AmerenUE/Callaway Plant*

In this industry, where access to relevant and accurate information is key to your plant’s maintenance and operations, Enterprise Informatics’ integrated eB Nuclear Application Suite is your most viable option.



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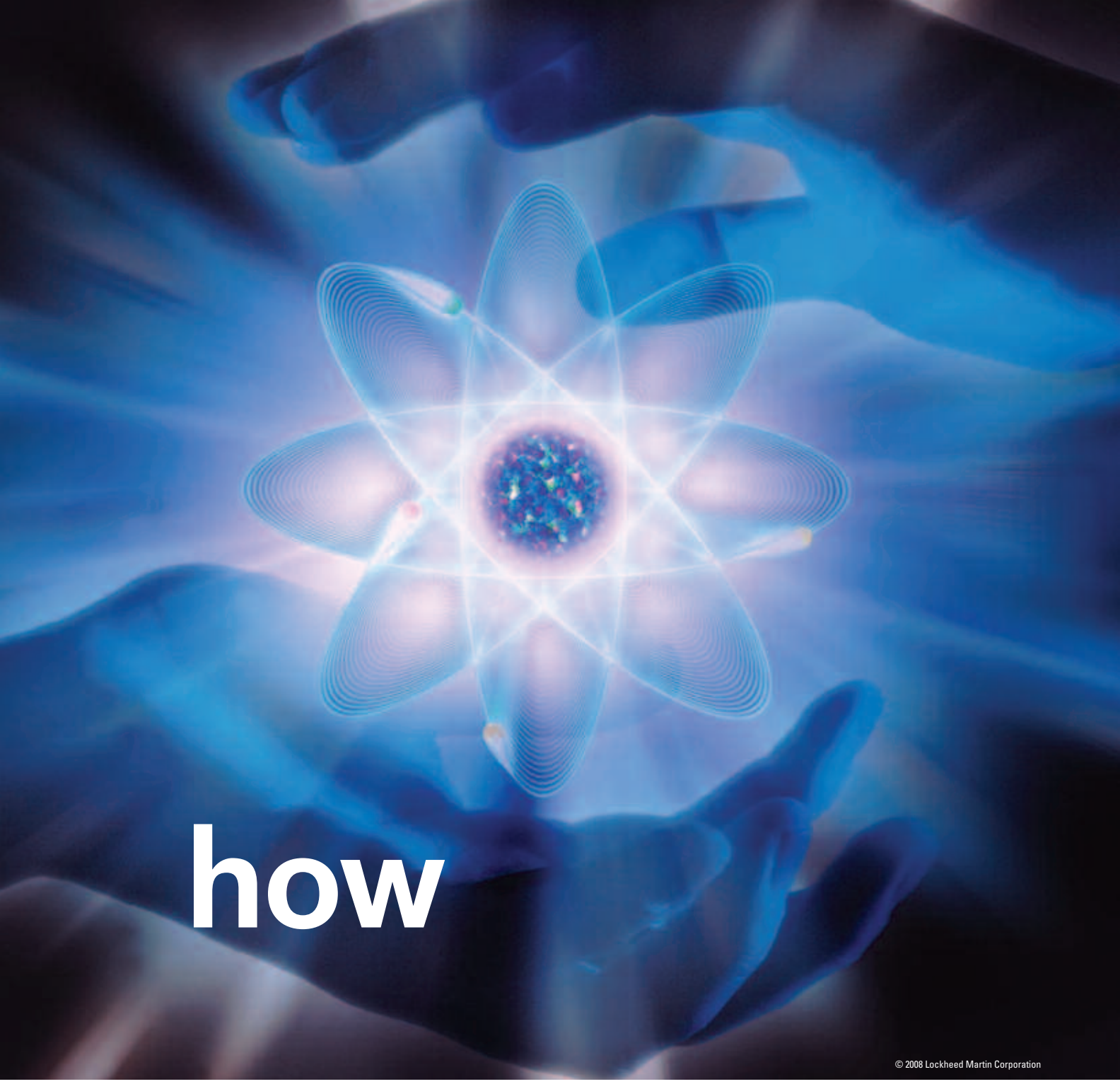
Information Management for the Intelligent Enterprise

Download the AmerenUE Callaway Case Study at
www.ebfornuclear.com/ameren



BETWEEN SAFETY AND RELIABILITY, THERE IS ONE IMPORTANT WORD: HOW.

As a leader in digital instrumentation and control, we're proud of our 50 years of military and nuclear energy experience. Our 70,000 engineers have been, and will continue, to help military and commercial energy customers face down their most difficult challenges. Integrating vital systems is all a question of how. And it is the how that makes all the difference.

lockheedmartin.com/mfc/nuclearsands/

LOCKHEED MARTIN

We never forget who we're working for®

Innovative Bolting Technology

Multi-Jackbolt Tensioners prove to be an ideal alternative for large diameter applications.

Critical large-diameter bolting applications have traditionally been difficult to safely and accurately tighten. The problem is that while the strength of a fastener increases with the square of its diameter, the torque required for tightening increases at an even greater rate – to the third power. Because of this, standard nuts and bolts larger than an inch in diameter cannot be effectively tightened with hand tools.

Nuclear bolting applications in particular can face tough challenges with time restrictions and radiation exposure to workers. Various methods have been introduced to handle this problem – stud heaters, hydraulic wrenches and nuts, and hydraulic tensioning. Depending on the application, these can be used with success, but these methods present some of their own challenges and may not be effective in certain circumstances.

Another solution to the inherent challenges of large-diameter bolting is the Multi-Jackbolt Tensioner (MJT). Instead of having to generate enough torque to tighten an entire hex nut, MJT's break those torque requirements down by utilizing a series of hardened jackbolts threaded through the body of a round tensioner. This enables the user to generate the needed clamping load while using only hand or air tools for installation and removal.

This is a huge advantage in that you no longer need cumbersome or expensive tooling to bolt the joint. Worker safety is greatly increased, and also MJT's boast an accuracy of +/- 5% when calibrated torque wrenches are used. Time savings is another advantage of MJTs. Even though MJT's have several jackbolts to tighten on each tensioner, they have reduced installation times compared to other methods. The use of air tools also greatly speeds up the tightening process **(Fig. 1)**, and in many applications multiple workers can be used. Here's how they work:

To install, you first place the hardened washer over the stud or bolt and then thread the tensioner on, hand tight. With simple hand tools, the jackbolts are tightened uniformly. Turning the jackbolts creates a thrusting of the nut body away from the washer surface, creating bolt tension and imparting a stretch on the main thread. MJT's flex slightly, adding elasticity to the system which helps keep the joint tight, even when there are temperature changes and fluctuating loads. Common problems such as stud seizure and thread galling are greatly reduced as MJT's are loaded in pure tension.

Figure 1: *Multi-Jackbolt Tensioners only require hand/air tools to install or remove.*

Multi-Jackbolt Tensioners offer a bolting alternative that may be an ideal fit for your machinery. For more information visit www.superbolt.com.

DIVESCO – THE Nuclear Industry's Well-Rounded Parts Solution.

During its three decades of service Divesco has evolved into a full service supplier of I&C, electrical and mechanical parts and components to the nuclear industry worldwide. Divesco assists utilities with their Investment Recovery Programs, giving them economically feasible alternatives when faced with reduction of their inventories. Additionally, Divesco specializes in the supply of obsolete or hard-to-find parts and components back to nuclear plants in need.

Divesco's 25 years of experience in the nuclear field has given them credibility in the handling, shipping, and storage of the parts and components they own. Their NUPIC audited Quality Assurance Program ensures that their 50,000 square feet of Level B warehouses conform to exacting standards. A standing inventory of more than 15,000 items is accessible on the web 24/7. And for parts that are not available immediately from stock, Divesco expedites the sourcing of emergency items via a network of partners to assure plants get what they need, when they need it.

Powering Divesco's expansive inventory is the Divesco team and their industry-leading Priority One Expediting™ service. Divesco has learned through years that there is no time for down time. Their location, adjacent to **Jackson, Mississippi** Airport, has enabled Divesco to ensure that orders are delivered within the most critical timeframes and deadlines.

Whether it is helping utilities reach their investment recovery goals, providing the supply of obsolete and hard-to-find parts, or their Priority One Expediting™, Divesco has put a world of qualified nuclear surplus at their client's fingertips. The scope of their services and the scale of their inventory have earned Divesco the distinction of being the leader in the nuclear surplus industry.

Available. Fast. Reliable. DIVESCO
Your well-rounded solution!

601-932-1934 DIVESCO **www.divesco.com**

Team provides specialized services and products for the world's nuclear power industry

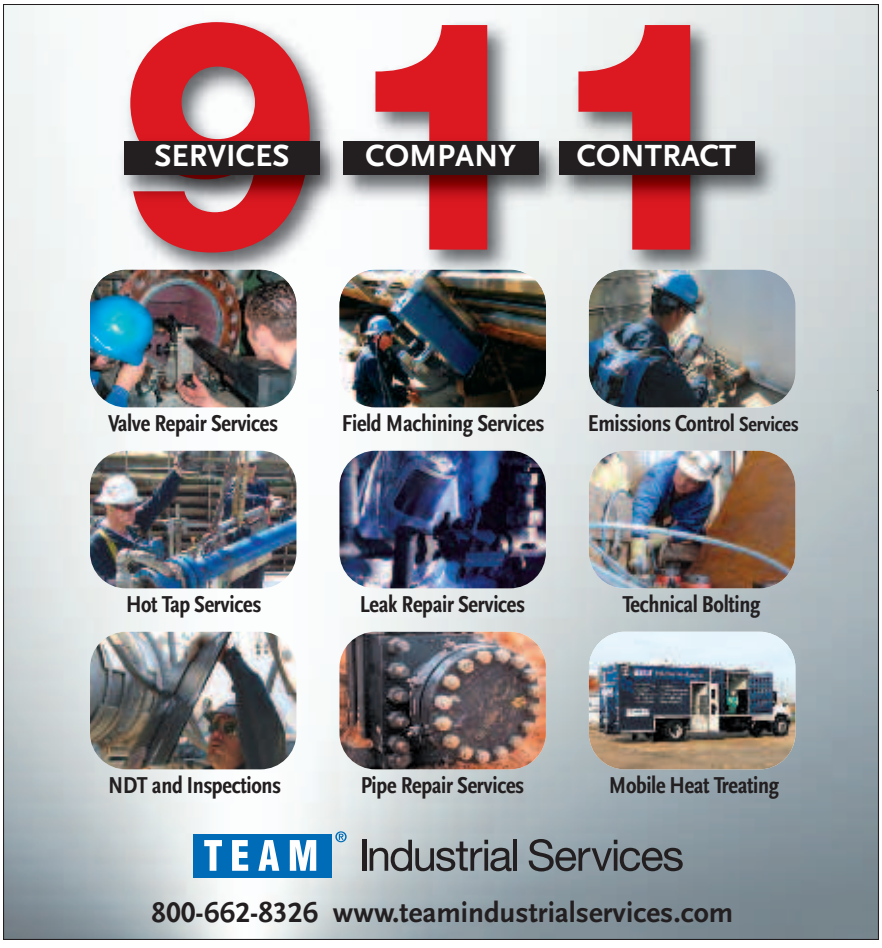
Founded in 1973, Team is the largest specialized industrial service company in the U.S. Team's Mechanical Services and products include:

- Onsite and on-stream non-destructive leak sealing from vacuum to 6,000 psig, and from cryogenic to 1700° F
- Hot tapping in excess of 1400° F and 4300 psig
- Line stops through 48″ diameter
- Line freezing up to 30″
- Turnaround, Shutdown, and Outage services
- Field machining
- Bolt tensioning and torquing
- Onsite and inline valve repairs
- Pipe Isolation and Weld Testing
- Field Heat Treating
- Weld preheating
- Post weld heat treatment
- Refractory dry-outs
- Wireless Heat Treating Equipment
- Fugitive emissions monitoring (LDAR)
- Mechanical Integrity Inspections/Quality Assurance Programs
- Digital and film radiography utilizing X-ray and gamma sources
- Alternating current field measurement (ACFM)
- Long-range guided-wave ultrasonics
- Positive material identification
- Dye penetrant testing

Team is a global company

Global in scope, Team operates from more than 100 locations in the U.S. and Canada, and serves international customers through its own wholly owned branch locations as well as through licensed agreements in 17 countries.

The company operates around the clock and works directly for manufacturing facilities as well as through some of the world's largest contractors; utilizing more than 3,000 trained, experienced technicians to respond quickly to industry needs.



These technicians are safety-trained and technically certified at the company's formal state-of-the-art training facility; long acknowledged as the standard for the industry. Here, technician training and safety records are computerized and available online to company and customer personnel alike.

Team manufactures one-of-a kind products and nuclear-approved sealants

Team's engineering, manufacturing, training, and headquarters facilities are located on an 11-acre industrial site strategically located near Houston to facilitate rapid land, air and sea shipments of its manufactured products. Customized (original) leak sealing and hot tapping hardware can be engineered and manufactured at this facility for customers anywhere in the world on a routine or emergency basis.

Special alloys, one hundred percent material traceability, and high pressure testing are available for these manufactured products upon request.

ISO-9001 certified, Team's manufactured products include a complete line of standard leak sealing pipe repair clamps, enclosures, and related hardware, plus more than 100 proprietary (asbestos-free) sealants, including nuclear-approved sealants for high temperature-high pressure applications.

These products are used by industry to prevent expensive plant shutdowns when leaks occur.

Plants can either stock and apply Team products on-line and under-pressure themselves, or have Team's certified technicians apply the products for them.

Utilizing these products, and through techniques developed after more than three decades of experience, Team can contain and seal virtually any industrial leak on-stream — regardless of temperature, pressure, or process.

Team also is known throughout industry for its exemplary safety record.

Listed as #3 on the Forbes Magazine list of 200 best small companies, Team's common stock is traded on the NASDAQ Global Select Market under the ticker symbol "TISI". Additional information and videos about Team may be viewed at: www.teamindustrialservices.com, or by calling 800-662-8326.

IN-SERVICE INSPECTION SYSTEMS

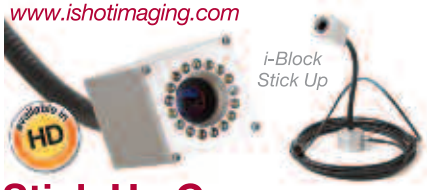
Retrieval Tools, Visual Inspection Systems and Non-Destructive Testing Equipment

InterTest, Inc.

InterTest, Inc. designs, manufactures and distributes RVI systems & NDT equipment for Nuclear Power Generation applications. InterTest's 30 years in business of problem solving inspection applications with radiation hardened video & fiberoptic systems, submersible & rugged cameras, retrieval tools, borescopes, videoscopes and fiberscopes will prove invaluable on your next critical path inspection.
www.intertest.com

iShot Imaging™

InterTest's iShot Imaging brand continues to grow in popularity with nuclear maintenance and inspection management due to the product line's reliability, high quality video inspection results, craftsmanship, and rugged system design. Product lines include the i-Block™ Series, PTZ Series, iGrab™ Retrieval Tools, XtendaCam® Series, SeeUV® Series and Weld-i® Series.
www.ishotimaging.com



i-Block Stick Up

Stick Up Camera

The i-Block™ Stick Up Camera with 15" gooseneck and magnetic base is a quick telepresence solution to remote observation. It can easily be placed in just about any position. The adjustable high resolution color zoom POV camera is waterproof and rugged. It is perfect for harsh environment remote video observations.


XtendaCam Tilt with Non-slip Stabilization Legs

XtendaCam®

View live and record images from areas up to 25 feet away with the XtendaCam Motorized Tilt and Zoom Pole Camera Inspection System. Inspect out of reach areas in a matter of minutes by extending the 16' lightweight carbon composite pole– scaffolding, cranes and aerial lifts are no longer needed, dramatically speeding up the inspection process! The color camera is equipped with white LED illumination, 320 degree motorized tilt and 40:1 zoom. View storage facilities, fire walls, snubbers, behind large objects, around corners and inaccessible areas with XtendaCam.

PTZ462 with LED Illumination

PTZ Systems

iShot Imaging's industrial waterproof Pan, Tilt, Zoom Camera Systems can navigate through openings as small as 3 inches! They are capable of withstanding punishing conditions while delivering the high quality color video inspection footage you require. Different mounting and delivery options allow these systems to adapt to a variety of applications such as tank, pipe and vessel inspections. Accessories include CCU, optional LED, IR, flood or spot illumination, cable lengths up to 600 feet and a motorized PTZ Sony block camera capable of reaching up to 36x optical zoom. Submersible and HD models now available including display and recording accessories.


iGrab RT-750 with Viper Jaw Set

iGrab™ Retrieval Tools

Grasp and retrieve foreign objects in dark and narrow inaccessible areas with iShot Imaging's iGrab Manual or Electromechanical Retrieval Tools. The iGrab offering includes; cup forceps, fork and tine, pliers, alligator, viper, magnet and snare retrieval tools starting at 1.4mm in diameter. The iGrab Electromechanical RT-750 and RT-1000 Motorized Retrieval Kits include 4 waterproof jaw sets and remote control. Additional iGrab accessories include a 4 way articulating guide tube, video probes, tool handles, tool holders and push poles.

Stop by our Booth, Dec. 8 – 10th
Power-Gen International
Las Vegas, Booth N1-110

Fairbanks Morse Engine

Supporting the nuclear industry yesterday, today and tomorrow

Fairbanks Morse Engine is the leading supplier of emergency diesel generator sets (EDGs) to the nuclear power industry. Our EDGs are designed, manufactured, and tested in Beloit, Wisconsin in compliance with NRC requirements. With over 100 generator sets currently in nuclear service, next generation plant operators can look to our proven track record delivering reliable power, onsite service support, factory-direct engineering services, and OEM replacement parts.

Our leadership role in nuclear standby power dates to the earliest development of the technology. When the U.S. Navy needed diesel generators to support the emerging nuclear fleet, they turned to Fairbanks Morse Engine. As the first generation of nuclear plants came online in the 1960s, our Opposed Piston EDGs were chosen based on their performance under the Navy's rigorous operating conditions. Nuclear construction peaked in following decades, and the Fairbanks Morse Colt-Pielstick engine line entered service at plants throughout North America. Currently, over 60% of U.S. nuclear owner/operators depend on Fairbanks Morse for standby power.

With the next generation of nuclear plants expected to generate electricity for 60 years or more, the industry is looking for a proven engine manufacturer to build EDGs that will meet demanding NRC requirements and last for the life of the plant. Our engines are manufactured in accordance with USNRC Regulatory Guide 1.9, 10 CFR 50 Appendix B, IEEE387, and ASME Section III, Class 3. Additionally, we maintain a commercial-grade nuclear dedication program audited by NUPIC. Dozens of satisfied plant operators take advantage of our OEM replacement parts, onsite service support and factory-direct engineering services.

CASE STUDY

At the Wolf Creek Generating Station in Burlington, Kansas, system engineer Jim Weeks knows the importance of safety systems. Based on his 30 years of service at the plant, Weeks confidently asserts that "standby power engines are the second-most important pieces of equipment in the plant, after the Terry turbines."

Because of this extreme need for reliability, Wolf Creek depends on two Fairbanks Morse Colt-Pielstick PC2.5 engines to deliver over 10 MW of emergency power.

"Emergency backup engines are required to energize the bus in less than 12 seconds in the event of a power failure," continues Weeks. "Our Fairbanks engines start in around eight to nine seconds. They're very reliable – they have to be."

For more information about our role in the future of the nuclear power industry, visit us online at **fairbanksmorsenuclear.com**.

FAIRBANKS MORSE ENGINE

an EnPro Industries company

FAIRBANKS MORSE ENGINE
an EnPro Industries company

DIESEL GENERATOR SETS

The Proven Leader

www.fairbanksmorsenuclear.com

WorleyParsons

resources & energy

Power - Nuclear Services

WorleyParsons has been a provider of professional technical, construction and project management services to the nuclear industry for over 50 years.

WorleyParsons supports each phase in the lifecycle of nuclear projects. Whether enhancing your nuclear operations with radiological design basis, safety analysis, and emergency management support, or supporting your new plant feasibility, development, design, construction or commissioning, WorleyParsons keeps your nuclear plants in compliance, online and operating at peak performance. We have the demonstrated industry commitment and capability to deliver outstanding support service from new plant development to deactivation and decommissioning, with the global presence and local project capabilities to assist customers in all phases of an asset's lifecycle.

Services include:

- Full-service design analysis
- Modification engineering
- Extended power uprate
- License renewal
- Licensing support
- Decommissioning engineering
- Construction management
- Owner's engineer
- Feasibility studies and services
- Equipment qualification
- Project management, estimating and project controls
- Due diligence reviews and evaluations
- Applied engineering analyses
- Radiological analyses
- Program development and updates
- Process and procedure development and improvement programs
- Supplemental resources
- Nuclear site evaluations and licensing
- Emergency management support
  - Accident offsite dose calculations
  - Reduction/assessment of emergency planning zone (EPZ) effectiveness
  - Protective action strategies
  - Emergency management planning, process and procedures
- NSSS Technology evaluations/selection
- Early site permitting
- Combined Operating License Application (COLA)
- Procurement

60+
Serviced Nuclear Units

18
Engineer of Record

40
Safety Analysis Performed

Contact: Kirk Noonan, Director, Business Development
Phone: 610-855-2578
E-mail: kirk.noonan@worleyparsons.com

NuclearServices@worleyparsons.com
www.worleyparsons.com

WorleyParsons

resources & energy

EcoNomics

31,700
Personnel

37
Countries

114
Offices

"The acquisition of Polestar significantly increases WorleyParsons' capability in the nuclear consulting and analysis segment of the international nuclear industry."
John Grill, WorleyParsons' Chief Executive Officer

Write to: NuclearServices@worleyparsons.com
for complete information.

OneWay™
to Zero Harm

The Next Generation of Global Nuclear Power Capability

Our services to the Power industry cover the full asset spectrum both in size and lifecycle – from the creation of new assets to services that sustain and improve operating assets. Our comprehensive global network of expertise and local presence, strengthened by the acquisition of Polestar Applied Technology, Inc., allows us to offer tailored solutions to our customers for nuclear power generation from compliance and operating performance to the most current safety, risk assessment, and deactivation and decommissioning standards.

EcoNomics™ - Environmental and social imperatives now affect the bottom line for all major corporations and projects globally, which are particularly challenging in the resources and energy sectors. WorleyParsons is uniquely positioned to work both globally and locally with our customers to deliver on the value of EcoNomics™. Our range of services and technologies embed environmental, social, and financial sustainability into project delivery, across the asset lifecycle.
www.worleyparsons.com

Now hiring talented engineering professionals. For more information, visit our web site at: www.worleyparsons.com/employment.

PCI PROMATEC

The Leader in Passive Fire Protection for 30 Years

Since 1980, Promatec has led the industry in the development of passive fire protection solutions designed especially for nuclear-related facilities. Our proprietary line of designs and products is utilized in the vast majority of commercial nuclear plants in the USA and many DOE facilities. Internationally, we actively service markets in China, Korea, Taiwan, and Europe.

COMPLETE SOLUTIONS:

From Design Concept to Completion Turnover

- Penetration seals for fire, radiation shielding, pressure, security, seismic, and movable pipe with typical fire ratings of 1-5 hours
- Exclusive rights to 3M Interam™ E50 series flexible electrical fire barrier wrap with qualification testing by Promatec to USNRC Generic Letter 86-10, Sup. 1
- Rigid fire wall and floor barriers specifically tailored to nuclear applications
- Full engineering, training, and test support services
- Complete turnkey capabilities, including design, supply, and installation
- Successful completion of contracts over $20 million

Visit www.PROMATEC.com
Or, better yet, call us at 281-933-7222
to discuss your needs personally

PCI Promatec:

Pioneering Passive Fire Protection Systems in the Nuclear Industry for More Than Three Decades

PCI Promatec offers an unmatched library of products and designs qualified to meet the rigid standards of fire safety in the nuclear industry, from the development of our own line of penetration seals to the acquisitions of other industry leaders, including Bisco/Brand, ICMS, and Techsil.

We offer qualified systems for fire, pressure, radiation, security and flood seals. Additionally, through our exclusive agreement with 3M, we have qualified 1-3 hour electrical raceway fire barrier systems that fully comply with the most rigid USNRC requirements.

Our NQA-1 Quality Assurance program has passed the rigorous audit process of NUPIC every year since its inception. Our Target Zero safety program is the best in the industry.

As a wholly-owned division of Performance Contracting Group (PCG), we offer financial stability as "One of the Top 10 Specialty Contracting Firm in the USA," as ranked by *ENR Magazine.*

Our core staff averages 25 years experience in nuclear passive fire protection, making PCI Promatec "the authority" in this industry.

Our customer base includes the majority of nuclear plant owners in the USA, DOE, and a number of international utilities in Asia and Europe. In an average year, we do business with over 50 facilities with services ranging from technical support to full turnkey contracts. With contracts successfully completed from $1,000-$20,000,000, no job is too large or too small.

If you have a need, we have a solution. Call Randy Brown at 281-933-7222, email info@promatec.com or visit us on the web at www.promatec.com.

PCI's Metal Fabrication Division Provides Solutions to BWR Strainer Issues

Our experience with BWR and PWR ECCS blockage issues and resolution allows complete solutions that translate directly into cost savings and lower risk for customers.

40 Years of Technical Expertise

PCI, in association with other Team Companies, is ready to bring the best and most up-to-date technical solutions (turnkey or cafeteria style) to our customers, in all aspects relating to this issue, including:

- Plant Assessments & Walkdowns
- Preparation of Tech Specs and/or Mod Pkgs
- Debris Generation/ Transport Analysis via CFD Modeling
- **Debris Bypass Testing with a Chugging Facility**
- Downstream Effects for Plant Equipment and Reactor Fuel
- Chemical Effects
- Head Loss Testing of ECCS Screens with Debris
- Resolution Options
- Installation/Implementation
- Assistance with Tech Justifications and Closure

In addition, we have the ability to effectively interact with the NRC and conduct full-scale Performance Testing.

Our Talent Is Not Limited to Creating Strainers & Insulation Systems – If You Can Imagine It, We Can Build It

In regards to metal, our talented craftsmen can laser, shear, roll, brake, edge, bead, crimp, weld, polish, bolt, rivet, seal and more. *Our new laser can cut 1" thick stainless steel!*

Our Quality Assurance Program Provides Confidence Upon Delivery

Our Quality Assurance Program is fully compliant to 10 CFR 50 Appendix B; NQA-1.

We've Built Our Business On Service

We understand short turnarounds and will work with your tight deadlines. Send us your inquiry and give us a chance to help.

Visit our website for additional information: www.PCImetals.com

ATTENTION:

PCI's Sure-Hold™ Band System can help reduce the ZOI/debris generated and transported in a post-LOCA event for insulation systems.

Contact Us For Information! 913-928-2800

LASER-CUTTING CAPABILITIES:

Cut Carbon Steel up to 1" Thick

Cut Stainless Steel up to 1" Thick

Cut Sheets up to 60" x 120"

Cut with Near Machine Shop Tolerances

Full Design Support to Job-Shop Fabrication

What is Zero Leakage?

Our Mission. ValvTechnologies defines zero leakage as no detectable leakage of gas or a liquid for a period of three minutes or greater. The valve must not leak after multiple cycles and must exhibit zero leakage at various pressure conditions – from vacuum to full-rated pressure. Unprecedented criteria.

More traditional valve manufacturers have published acceptable leakage rates, even when brand new. At ValvTechnologies, we will not ship a valve unless it shuts off completely. We test every valve made according to ASME / ANSI standards (MSS SP-61, ANSI Class V), then we toughen the standard to 100 percent shut-off **(zero bubbles)** and attach our signed and witnessed test report to **every valve we ship.** With this kind of quality control, ValvTechnologies' valves last longer and reduce maintenance and operation costs.

Houston, Texas USA
Corporate Headquarters

Founded in 1987 in the garage (yes, it's true) of a valve design engineer, ValvTechnologies has expanded quite a bit over the past 20 years .

Today, ValvTechnologies employs over 300 employees worldwide. Corporate offices are located in the United Kingdom, Mainland Europe, China, the Middle East and South America.

Manufacturer representatives can be found worldwide. To find out more about the products or services offered, or to locate a representative, visit www.valv.com.

Four Year, Zero Leakage. Guaranteed.

All ValvTechnologies' valves manufactured for the nuclear industry are stringently tested to meet the zero leakage testing criteria and are backed by a **four year, ZERO leakage guarantee.** In addition, every valve that we manufacture for nuclear generation comes with extensive documentation and full materials traceability which include:

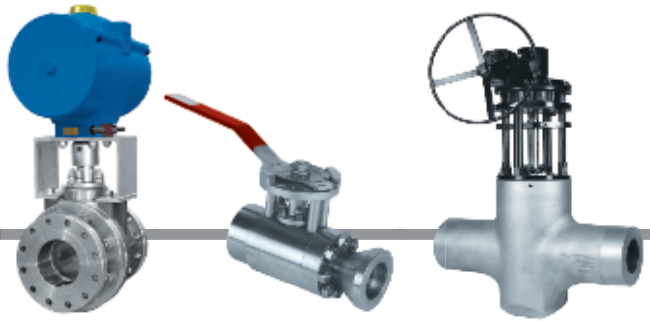
- CMTR – Certified Materials Test Report
- Certificate of Compliance
- Valve Test Report
- Design Report
- Drawings

VALVTECHNOLOGIES

Four Year Zero Leakage Guarantee.

Vent, Drain, Isolation and Control Valves for the Nuclear Industry:

Integral Seat Ball, Trunnion & Parallel Slide Gate Designs
Forged & Cast Materials
End Connections SW / BW / Flanged / Special
Primary, Secondary and Auxiliary Systems
Applicable to all BWR, PWR and CANDU Designs



Zero Leakage Valve Solutions

+1 713 860 0400 www.valv.com sales@valv.com

EXCELLENCE IN METAL FABRICATION AND MACHINING

RANOR a leader in Fabrication and Machining of components and equipment for the Nuclear Industry was founded in 1956 in an 18,000 sq. ft. manufacturing space in Fitchburg, MA. RANOR's reputation for the manufacture of demanding parts - delivered on-time - quickly spread and our customer base soon expanded to include OEMs in the steam turbine, paper-making and machine tool industries. By 1975 RANOR had outgrown the original facility and moved to our present location situated on 65 acres in North Central Massachusetts. Our 125,000 sq. ft. manufacturing facility is the home for state-of-the-art equipment unique to the industry. RANOR's fast turn around time and fresh approach to working with customers' representatives has created an abundance of opportunities for the company; and numerous expansions to our facility and capabilities ensued. RANOR enjoys a reputation as one of the most respected precision manufacturing companies in the United States. We are proud to offer customized services and a "one-stop shop" for components and integrated "turn key" solutions. We have earned our reputation through outstanding technical expertise, flawless attention to detail, total commitment to quality, and excellence in customer service. RANOR is committed to working with its customers to manufacture their products using the most efficient and precise methods possible.

FABRICATION SERVICES:

Cutting - direct CAD/CAM link-up - up to 22" thick carbon steel; 7" thick stainless steel and non-ferrous metals; table size: 17 ft. x 50 ft.
Hydraulic Press Brakes - up to 1,500 ton by 30 ft. long bed, up to 6" thick
Rolling - to 12 ft. lengths; up to 6" thick
Welding - Welders qualified to: ASME, AWS, MIL-STDs; welding from 1/16" through 10" material thickness
Robotic Welding - 2-zone Work Cell Plasma Cutting & Welding; 6-Axis Arm
Assembly

- 10,000 sq. ft. of dedicated assembly space (available for rent)
- Complex assemblies performed
- Functional & qualification testing for acceptance and service use
- Electromechanical assembly
- 100 ton lift capacity; up to 32 feet "under the hook"

Additional Services

- 75 ton capacity thermal stress relieving unit
- Vibratory stress relieving unit
- Fully enclosed Grit-blast and Paint room

PRODUCTION CONTROL:

- Dedicated team with the sole focus for on-time delivery
- Responsible for scheduling, project management and expediting from time of RFQ until the job shipment
- Communication with customers on a regular basis

MACHINING SERVICES:

CAD/CAM - Mastercam with IGES and DXF Translator capability (for e-mail transferable data bases) with DNC capacity on all CNC machine tools
Horizontal Boring Mills – 9 CNC floor and table types: up to 30 ft. x 12 ft, 6-axis and rotary tables
Vertical Boring Mills – 7 CNC from 78" to 248" swing; 120" under the rail; 5 with live tooling capabilities

- 47,000 sq. ft. State-of-the-Art Machine Shop
- 100 ton lifting capacity, with up to 32 feet "under the hook"
- All CNC machines are 3rd party laser calibrated annually
- Lathes, Drills and secondary equipment available

ENGINEERING:

- Manufacturing engineering staff works directly with customer's design engineers
- Develop innovative manufacturing approaches
- Provide design change recommendations for ease of manufacturability
- Plan every facet of a project in detail: equipment and manpower requirements, methods, and tooling; custom production fixtures to optimize efficiency and reduce costs for RANOR and its customers

QUALITY CONTROL:

- In-House NDT and Testing Capabilities (RT, MT, PT, UT, Hydrostatic/Pneumatic/Vacuum)
- State-of-the-Art Laser & Inspection Arm (Portable CMM) Capability

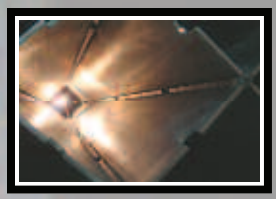
Serving the Nuclear Industry for over 30 Years

A "One-Stop Shop" for large complex components – offering Materials, Engineering, Fabrication, Machining, Inspection, Assembly and Testing.

A Modern 125,000 sq. ft. facility; 100-ton lift capacity
Welding Processes—FCAW, GMAW, GTAW, SAW and SMAW; all welders qualified: ASME, AWS, MIL-STD
In-House Non-Destructive Examination
Large Horizontal and Vertical machining capabilities.

Quality Program Requirements:

- ***ASME Section III Divs. 1 and 3 – 'N', 'NPT', 'NA', 'NS'***
- ***10CFR50B; 10CFR71H; 10CFR72G***
- ***ASME Section I – 'S', 'PP'***
- ***ASME Section VIII Div. 1 – 'U'***





RANOR
Excellence in Metal Fabricating and Machining

1 Bella Drive Westminster, MA 01473 Phone (978) 874-0591 FAX (978) 874-2748 www.ranor.com

The E&C Industry is Equal to the Nuclear Build-Out Challenge

The possibility of a nuclear renaissance has raised concerns that the E&C industry would be overwhelmed by a building surge of tens of thousands of new nuclear megawatts. But our own history suggests something quite different—that we adapt to challenges and meet the demands.

More than 130 commercial nuclear units were commissioned in the U.S. during the second half of the 20th century. From the late 1960s to 1990, more than 90% of our national nuclear capacity came online. That's about 110,000 MW in a little more than 20 years, or about 2½ times the capacity represented by all of the COLAs the NRC expects to receive by 2010. In pursuing this buildup, the power industry, with the E&C industry in step, shifted from the dominant coal-gas-and oil-fired plants of the 1950s and 1960s to the promise of a new era. We went from virtually no nuclear capacity to the world's largest nuclear fleet in a period burdened by multiple recessions, soaring interest rates and moderate to high unemployment.

The surge from the 1960s through the 1980s was not an isolated event. In 2000, our average capacity growth of 10 GWs a year zoomed to 30 GWs in a combustion turbine led market that peaked at more than 70 new GWs in 2002. CTs are a simpler technology to be sure, but it was necessary for E&C to ramp up rapidly from minimal new capacity additions in the mid-90s to meet the largest new capacity build in the industry's history, only to fall back again to a period of moderate growth by 2005.

But there was more to be done—a mandate for clean air system retrofits on hundreds of operating coal-fired plants—again, not nuclear-level efforts, but often individually large enough to require hundreds of millions of dollars and hundreds of thousands of hours to execute. And the demands continue with component replacements, uprates, T&D, renewables and continuing support services.

The E&C hours expended to complete the projects of the past decade, based on typical rates from URS' database, would have been enough to build 18-20 new nuclear plants in the 1970s and 1980s, as defined by rates compiled for Oak Ridge National Laboratory and reported in the Energy Economic Data Base. That's 18-20 new nuclear plants built with few of the techniques and efficiencies we have in today's transformed nuclear industry. Today, the rework in a Generation II plant will be eliminated by COL commitments. The old customized designs will be mitigated by standardization. Productivity has been lifted dramatically by sophisticated 3D tools, integrated material management and project control systems, and advanced modular construction. And, now a global event, the nuclear renaissance will be manifested not in isolation, but rather in interdependence.

The historic ascent of nuclear power has been justified by its record of safety and reliability. The E&C industry is equal to the challenge of adding to this great legacy.

URS Readiness Level

- 7,000 nuclear professionals
- 1st new construction in 25 years—the National Enrichment Facility
- Engineering supporting the GE ESBWR and MHI US-APWR
- Award-winning, record-setting major component replacements
- Lessons learned as AE or C on 49 units
- Major new programs at Hanford, Savannah River, Sellafield (UK) and West Cumbria (UK)
- World's largest safety/licensing consulting firm

Improving Material Properties Through Electropolishing

An Introduction to Electropolishing

Electropolishing is an electrochemical process by which surface material is removed by anodic dissolution. What may be envisioned as "reverse plating", electropolishing actually removes surface material, beginning with the high points within the microscopic surface texture. By removing these points, the electropolishing process will improve the surface finish, and enhance the near surface chemistry of the material.

Improving Corrosion Resistance & Reducing Product Adhesion

Electropolishing delivers a smoother, more reflective surface that reduces product adhesion and improves surface cleanability. Perhaps more importantly, electropolishing preferentially dissolves free iron, inclusions, and embedded particles from the surface of the work-piece. This process improves the near surface chemistry of the material, and promotes the formation of an improved corrosion resistant oxide layer. Please see the full description of each of electropolishing's benefits.

The Basics of Electropolishing

Electropolishing is accomplished by creating an electrochemical cell in which the material to be polished is the anode. A cathode is formed to mirror the geometry of the work-surface and the two are submerged in a electrolyte bath. When a DC current is applied, the electrical charge forces metal ions to be dissolved from the materials surface.

The key to the electropolishing process is the difference in current density across the surface. Within the microscopic surface profile, the current density is greater at the high points and lesser at the low points. The rate of the electropolishing reaction is directly proportional to the current density. The increased current density at the raised points forces the metal to dissolve faster at these points and thus tends to level the surface material.

Electropolishing Services

Harrison Electropolishing, L.P. specializes in electropolishing, precision mechanical polishing, passivation, oxygen cleaning, and chemical cleaning of high purity and corrosion resistant processing equipment.

Our services can be provided at our Houston facility or at your jobsite, anywhere in the world. We offer full technical evaluation, quotations, sales, and consulting services with quality assurance and test certifications.

Harrison Electropolishing L.P.

www.harrisonep.com
800-914-0615

Schulz Electric's History in Serving Nuclear Plants

Bucking the Trend

Back in the early 1990s, the Schulz Electric Company did something that few companies have done since the 1970s: Established a QA Program for supplying safety-related services under 10CFR50 Appendix B. Why? Because customers asked. For the same reason, Schulz Electric has recently opened an in-house decon shop for the processing of radiologically contaminated motors. Schulz Electric has now completed projects for every nuclear utility in the United States and for several non-U.S. nuclear utilities as well.

Welcome to the Neighborhood, Nuclear Plants!

Schulz Electric was founded in 1927. When nuclear plants came along, it quickly established an excellent reputation with them for repairs of key balance-of-plant motors. Several nuclear utilities then asked Schulz Electric to become a non-OEM source for inspecting and maintaining Class 1E equipment. Establishing in-house Appendix B QA for motor repair was a natural outgrowth of these inspection services, and Schulz Electric has since been audited by joint NUPIC-member teams, the U.S. DOE, and non-U.S. audit teams.

With over 80 years' experience in electric motor repair, Schulz Electric is just a few years younger than the introduction of the first AC induction motors and has accrued the experience needed to repair motors from any OEM source. Schulz Electric processes almost a thousand motors a year and has repaired motors and generators from every manufacturer you've heard of (and some you almost certainly haven't). Even OEMs use Schulz Electric for inspection, test, and repair.

Schulz Electric's Growth

As needs for these services have grown, Schulz Electric has expanded its plant capabilities and QA staff to cover even the largest projects on the tightest schedules.

For example, a recent EDG repair included the rewind of all eight rotor pole pieces for a plant in a refueling outage. It was completed in 16 days, including materials procurement and dedication. This quick turnaround kept the plant from extending its outage.

Schulz Electric's responsiveness in this and hundreds of other nuclear power-plant projects, large and small, is evidence of its commitment to a future of serving the nuclear industry.

TITANIUM
The Wonder Metal

Titanium tubing was installed in the surface condenser at Arthur Kill generating station in Staten Island, NY in 1971. Today, almost 40 years later, those same tubes are still in operation. Not only that, but in those 40 years, there have been ***zero corrosion*** events associated with these titanium condenser tubes.

Titanium was first discovered in the late 1700's, but it wasn't until 1940 that a metallurgist, Dr. William Kroll, was successful in developing a commercially viable process that could extract the metal from its raw ore. This process, known as the Kroll process, is still the basis for the production of titanium metal used today.

Titanium's first commercial applications took advantage of the material's excellent strength to weight ratio. Because of its high strength and light weight, titanium quickly became the material of choice in many aerospace applications. Most notably, the SR-71 Blackbird, developed and built in the 60's at Lockheed's Skunk Works, was designed with a full skin of a specially-designed titanium alloy.

Soon after titanium uses began to flourish in the aerospace market, this wonder metal was also recognized for its excellent corrosion resistance. This spawned the beginning of a new era where titanium would become the material of choice where seawater corrosion was of concern. Today, titanium has become a household name because of its use in golf clubs and other sports equipment, again, being recognized for its one-of-a-kind synergy of mechanical and physical properties.

CORROSION IMMUNITY OF TITANIUM
Why Condenser Tubing?

Titanium has earned its reputation as the tubing of choice in power plant surface condensers, especially where

water quality is a concern, because of its immunity to seawater corrosion.

How does it work?
When titanium metal is exposed to air or moisture, ambient or otherwise, an oxide film forms on the surface. This film is transparent in its normal state and is usually thin and not visually detectable. At higher temperatures, or by means of electrolysis, this film can be increased to various thicknesses causing light refraction that creates a rainbow of colors. (Yet another use…because of this, titanium has found its way in various art forms such as "paintings" and jewelry.)

The oxide film on titanium is very stable and will heal itself almost instantly in any environment where a trace of oxygen or moisture is present. Seawater, along with many other corrosive substances, will not attack this oxide film. Hence, the perfect material for condenser tubing is born. *Nothing is equivalent.*

Need we also mention the other benefits of using titanium tubing in power plant surface condensers under normal operating conditions?

- No corrosion allowance
- Thinner walls and increased heat transfer efficiency
- Higher flow rates
- No pitting
- No crevice corrosion
- No MIC
- No SCC
- Almost 40 years with zero corrosion events in condenser service

Why choose anything else?

WHY VALTIMET?
World Leader in Specialty Welded Tubing

As with all equipment in a power plant, the condenser is important to the operation of the plant and must be reliable. An integral component in the condenser is the tubes. Valtimet has supplied welded titanium tubing for over 700 power plants worldwide. This includes coal-fired, combined-cycle, as well as nuclear plants. This doesn't even include still more power plants using Valtimet stainless steel welded tubing in condensers. Valtimet welded tubing products are not limited to condensers. Valtimet's reference list also includes other specialty welded tubing used in feedwater heaters and MSRs.

Valtimet manufacturing facilities cover the globe. There are 8 plants on 3 continents.

Plants are ISO 9001:2000 certified. Customer service is world class.

When looking for a product that will meet or exceed all of your expectations in a nuclear power plant surface condenser…

Choose **titanium**.
Choose **Valtimet titanium welded tubing for nuclear power plant surface condensers**.

zero corrosion.

titanium

Photography & design for Valtimet by Stephan Caso

quality & safety

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premium titanium & stainless welded tubes
exclusive services, on site controls and assistance

Vallourec Group

25 years as Nova

25

5 years with Curtiss-Wright

We've arrived at 25. Thanks to you.

For 25 years, you've trusted Nova Machine Products as a leading manufacturer and supplier of nuclear-quality fasteners and precision-machined components. We've provided certified quality, responsive service, partnership, and profound value.

On our 20th anniversary, we began a new relationship, becoming part of Curtiss-Wright Flow Control Company, bettering our capabilities in technology and engineering. In an industry that can't afford mistakes, Nova celebrates 25 years of quality, dependability, and innovation . . . and with Curtiss-Wright, an unlimited view of the future.

Unistrut®
Metal Framing Systems
The original comprehensive engineered building and support system for conduit, pipe, and other applications.

PlasmaBond®
A molecularly bonded, permanent lubricant that eliminates galling and provides superior friction wear plus extended component life.

HydraNut®
The hydraulic tensioning system that offers superior joint integrity, faster bolting and rebolting, increased safety, and reduced outage time.

CURTISS WRIGHT
Flow Control Company
NOVA

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Enertech Expands Offerings: EST Heat Exchanger Solutions

Enertech, a business unit of Curtiss-Wright Flow Control Company, has been appointed by EST Group as their nuclear sales and marketing representative for the U.S. and Canadian nuclear power industry. The combined resources of EST Group and Enertech will provide a range of lifecycle products and services for tubular heat exchangers, condensers, chillers, pipe and piping systems and pressure vessels.

Located in Southern California, Enertech is an engineering, manufacturing, distribution and service company committed to providing solutions to meet the unique requirements of the nuclear power industry. Enertech provides advanced valves, actuators, pumps, instrumentation, heat exchangers, fluid sealing products, snubbers, diagnostic and test equipment, qualification and dedication services, maintenance, repair and engineering services to the nuclear power industry. Enertech will be responsible for the promotion, sales and service of EST products including tube plugs, flange test plugs and service tools for nuclear power plants; Construction and Engineering Firms engaged in nuclear power plant projects; NSSS Suppliers and OEM's involved in nuclear related activities.

EST Group, based in Hatfield, PA, is a business unit of Curtiss-Wright Flow Control Company. EST Group specializes in the development, manufacturing, and marketing of tools and systems that greatly simplify the maintenance of shell and tube heat exchangers, speeding up the in service inspection of pipe, pipelines, piping systems and pressure vessels. EST Group is best known for the patented Pop-A-Plug® Tube Plugging System and the GripTight™ High Pressure Test Plug that have saved millions of dollars in maintenance and downtime. Pop-A-Plug® tube plugs are suitable for tube plugging and sealing in systems operating up to 7000psi without welding or using explosives.

EST Group plugs have been successfully installed at more than 43 nuclear sites. Recently, nuclear facilities with water in-leakage problems have used the EST Group Perma Plug™ condenser tube plugs. The total change-out of the existing tapered pin, elastomer, and phoenalic style plugs have dramatically improved water chemistry and eliminated reduced-load incidents.

EST Field Services provides a complete range of turnkey field services targeted at the inspection and repair of shell and tube heat exchangers and condensers to include tube testing, cleaning, sleeving and plugging. EST is able to design, fabricate, and repair shell and tube heat exchangers, oil coolers, chillers, and double pipe heat exchangers and ASME section VIII vessels.

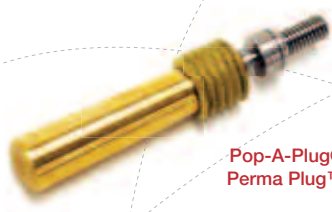
EST Group maintains a nuclear Quality Assurance Program, which complies with NQA-1, 10CRF50 Appendix B, and ANSI N45.2.

For more information please contact us at **866-211-6840** or visit our website **www.enertech.cwfc.com**.

CURTISS WRIGHT Flow Control Company ENERTECH

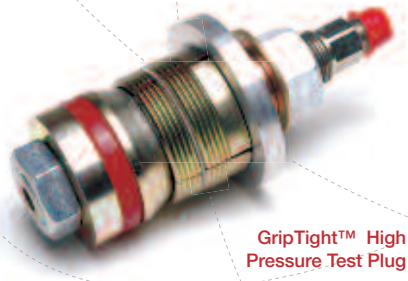
Tube Plugs, Tube Sleeving, Test Plugs, Flange Weld Testing & Services

- Locate and Identify Leaks
- Quickly Prepare and Plug Leaking Heat Exchangers and Condensers



Pop-A-Plug®
Perma Plug™

- Install and Remove Plugs Without Welding or Explosives
- Resleeve Heat Exchanger Tubes - Hydra-Loc™ Tube Sleeving
- Test Open End Pipes, Pipelines, Tubes and Pressure Vessels Quickly and Safely



GripTight™ High Pressure Test Plug

CURTISS WRIGHT Flow Control Company ENERTECH

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NTS® Engineering Services

Worldwide Nuclear Services

The success of organizations in today's market requires smart solutions to tough challenges. Since 1961, NTS has been helping organizations to access domestic and international markets. We are your single source for a full range of integrated engineering solutions, product testing, standards compliance, project management and managed services.

We office nuclear utilities and suppliers worldwide superior customer service in the provision of a full range of engineering services. Testing, equipment qualification, commercial grade dedication, engineering, component supply and field services are provided under our NUPIC and NIAC audited 10CFR50 Appendix B quality program.

Equipment Obsolescence Solutions

As part of our core competency, NTS focuses on the selection of new nuclear grade components, their qualification, and if needed, their dedication for safety related applications. We currently offer qualified replacements for many electrical and mechanical safety-related components that are no longer available from the OEM. NTS certifies equipment for Class 1E installation for mild or harsh environments to IEEE 323 and IEEE 344. These systems include instrumentation, digital recorders, batteries, gauges, motors, panels and chillers from manufacturers such as Bussman, Siemens, Yokogawa, Gems Sensors & Controls, Moeller and GE. NTS also offers engineering evaluations to determine the best potential replacement from over 200 manufacturers of nuclear grade equipment.

With a focus on solving plan needs, NTS leads the industry in digital upgrades, MCC bucket replacements, motor rewinds, governor rebuilds, modifications to or design of replacement safety-related systems, and instrumentation panel and component design. All programs are conducted in accordance with 10CFR50 App. B and 10CFR21.

EPRI NP-5652 - Nuclear Dedication

Through membership and direct participation in industry task groups, NTS maintains a leading edge in the industry. NTS participates in developing standards, guidelines and resolution of key NRC questions regarding critical characteristics verification, sampling, traceability, surveys, and like-for-like replacements. NTS' nuclear staff meets ANSI N45.2.6 Levell II Inspector requirements. Our nuclear dedication programs utilize the best approach for each application and nuclear safety related product. NTS also provides technical evaluations, critical characteristics and safety class determinations.

Nuclear Environmental Qualification

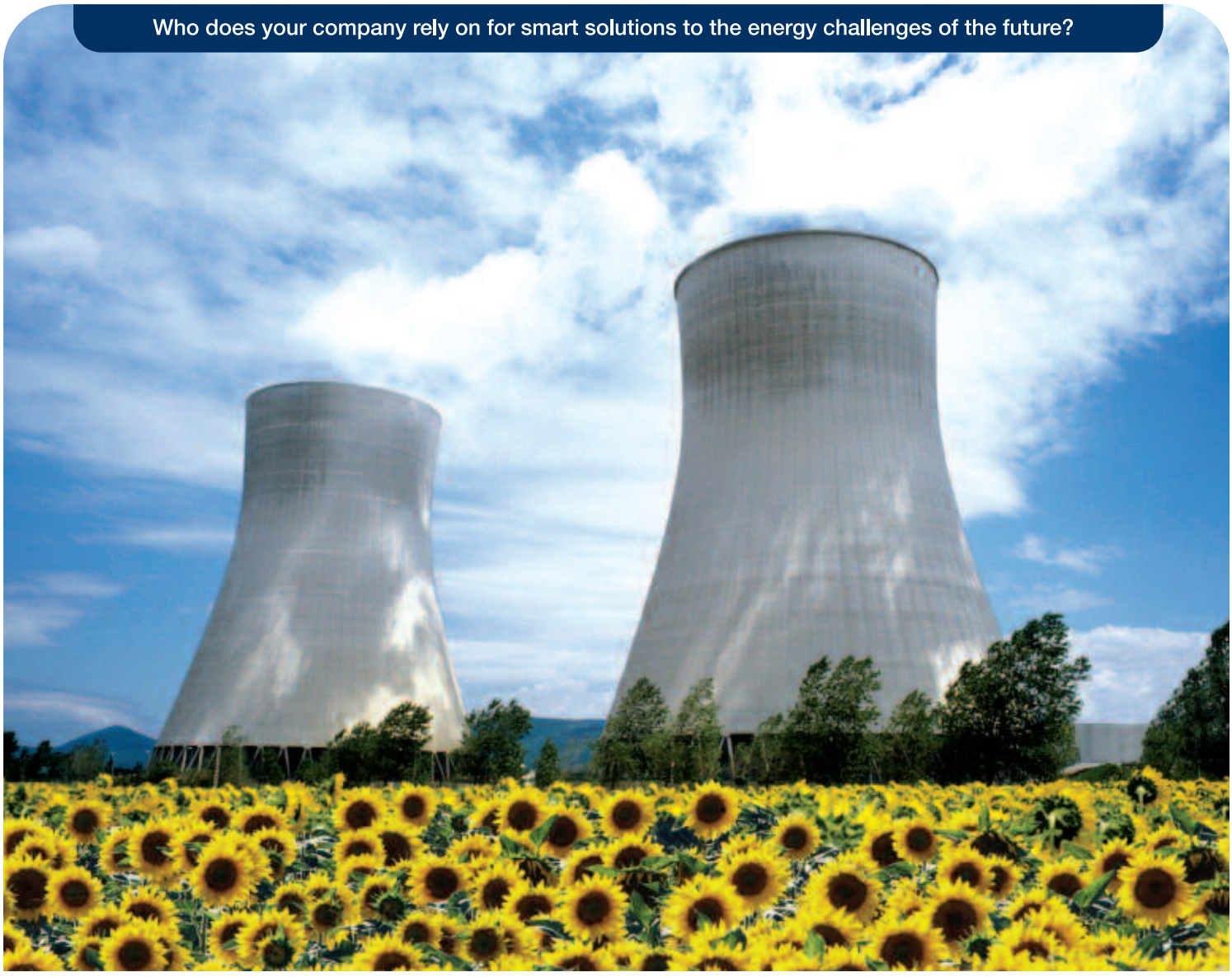
- Equipment Qualification to IEEE 323
- Seismic simulation- single axis, dependent biaxial and independent triaxial to IEEE 344
- Vibration aging and fatigue studies
- EMI/EMC testing and analysis
- Software Verification & Validation
- Qualification testing to EPRI TR-107330
- Materials Identification and Testing
- Mechanical Aging
- Normal or accident radiation exposure
- Reliability simulation and evaluation (MTBF)
- Thermal aging testing and analysis
- Vacuum testing, leak detection
- Climatics: temp., humidity, salt, solar, fungus, etc.
- Finite Element Analysis using ANSYS
- Nuclear Steam accident, LOCA, HELB to 600 degrees F / 300 psig

Contact us today to learn more about how NTS can help you solve your toughest engineering challenges. T: 877.211.1751 E: energy@ntscorp.com.

www.ntscorp.com/energy/nn

NTS®

Who does your company rely on for smart solutions to the energy challenges of the future?



SMART SOLUTIONS TO TOUGH CHALLENGES

- → TEST, MEASUREMENT AND DATA ACQUISITION
- → AUTOMATION AND CONTROL SYSTEMS
- → EQUIPMENT QUALIFICATION
- → COMMERCIAL GRADE DEDICATION
- → NUCLEAR-QUALIFIED PRODUCT SUPPLY

NTS Power & Energy: Embracing the Nuclear Renaissance and Powering the Future

National Technical Systems (NTS) is an integrated engineering services company offering a wide range of solutions for the Power & Energy industry. When NTS acquired Acton Environmental Testing in 1985 a commitment to exceptional service was born. Acton's extensive experience serving the needs of the nuclear power industry merged with the vast engineering resources of NTS created a very unique company; one that had the depth of knowledge required to understand the complex requirements of this unique marketplace combined with the adaptive ability to execute quickly and efficiently regardless of the size of the challenge at hand. Today NTS Power & Energy stands ready to provide smart solutions to your toughest challenges. Contact us today to discuss how we can help.

Contact us today to learn more about how NTS can help you solve your toughest engineering challenges. T: 877.211.1751 E: energy@ntscorp.com

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The Possibilities are Endless....

For more than 20 years, our slings have been the premier rigging solutions for heavy lifts.

With overload tell-tails, fiber optics, and Check-Fast® inspection systems, we offer our rigging customers the most advanced means of inspecting their Twin-Path® slings at the job site. Our durable K-Spec® fiber is available in all our synthetic products. And we offer engineered protection for our synthetic slings with CornerMax® Pads and sleeves.

In addition to our synthetic products, we have three multi-part wire rope sling designs that achieve over 90% efficiency making them truly high performance wire rope slings. They are flexible and can be made to precise lengths.

All of this is backed up by the most extensive sling testing in our industry, a worldwide network of 40 sling fabrication locations, and a commitment to provide the highest quality rigging solutions for our customers.

Contact us for more information or to find your local Slingmax® Rigging Solutions dealer in 60 locations worldwide.

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Now available in K-Spec® Twin-Path® and single-path slings. Also in polyester roundslings.

The Check-Fast® System is designed to improve job-site safety. The ✓Fast® Tag and External Warning Indicator (EWI) on a roundsling product provides for a pass/fail inspection of the internal load bearing core yarn. Damage to the core yarn from fiber on fiber abrasion, fatigue, and severe overload can be detected. If the sling is mistakenly overloaded beyond rated capacity, the EWI is designed to disappear before the sling fails. The inspector no longer has to feel and squeeze around the entire sling to guess if the core has been severely overloaded. This safety system is available for polyester or High Performance K-Spec® Fiber slings fabricated by authorized SLINGMAX® Dealers.

Cut Protection – Engineered Softeners

CornerMax® pads are shown at right. The pad creates a "tunnel" of cut protection – a no-touch zone. Therefore, the edge does not come in contact with the pad or sling. Note that the sides of the pads must be completely supported in order to create and maintain the "tunnel".

CornerMax® sleeves *(left)* may look like traditional protection sleeves, but ours are made of Dyneema® fiber that is specially woven to provide cut protection for a variety of edges and surfaces. Most commonly used sleeve material cannot stop an edge from cutting the sleeve and possibly the sling too. Ask your Slingmax dealer for test results.

SLINGMAX® RIGGING SOLUTIONS

The Utility Services Division (USD) of ATC delivers best-in-class safety-related and non-safety related hardware and services to the utility industry. Our Spectrum Technologies and Southern Testing Services (STS) Divisions provides its customers with cost-effective programs, as well as solutions to their obsolescence needs, that enable their plants to operate safely and productively.

For more than 20 years, our business has successfully supported the Nuclear Utility Industry. By utilizing our services, our customers have avoided significant plant downtime and they have realized major cost and time savings. Our industry strengths include plant outage support, the delivery of solutions to plant obsolescence issues, and advanced electrical and mechanical testing services.

Spectrum Technologies and Southern Testing Services (STS) delivers complete **Qualification and Dedication Services** to the nuclear industry.

We have dedicated and completed seismic and/or full harsh environmental qualification programs on Mechanical Equipment, Electrical Equipment, and Digital Equipment. Our dedication is in accordance with EPRI NP5652, and we follow IEEE-323 and IEEE-344 for our qualification.

Our Services include Re-engineering and Replication, Obsolescence Solutions, Circuit Card Repair and Refurbishment, Seismic/Environmental Testing, Motor Control Center Retrofitting, and Outage Support.

Our quality assurance program is in full compliance with the requirements of 10CFR50, Appendix B, ASME NQA-1, ANSI N45.2, MIL-I-45208A and 10CFR Part 21 requirements. We have had had no major findings as a result of several NUPIC audits and NRC inspections.

Spectrum Technologies

Spectrum Technologies
a division of Argo Turboserve Corporation
112 Erie Boulevard
Schenectady, NY 12305
(518) 382-0056
(518) 878-8071 (24/7)
E-mail – Spectrum@argoturbo.com

Southern Testing Services

Southern Testing Services
a division of Argo Turboserve Corporation
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Knoxville, TN 37932
(865) 966-5330
Fax (865) 675-5399
E-mail – SouthernTesting@argoturbo.com

ATC
SUPPLYING INNOVATION

ATC has been called the "Best Kept Secret in the Industry."

And that's no rumor.

ATC's Spectrum Technologies and Southern Testing Services (STS) Divisions deliver best-in-class safety-related and non-safety hardware and services to the utility industry. Our core business is Commercial Grade Dedication (CGD) and Equipment Qualification (EQ) services. These services can be provided to you cost-effectively and quickly. Your plant operates 24/7, and so do we – day or night, we're here when you need us. Our Knoxville, TN and Schenectady, NY locations provide plants with a local presence. Whatever your specific needs, ATC can always figure it out. We hope you'll partner with us, and let us deliver a solution to suit your every need. **www.argoturbo.com**

Spectrum Technologies

Schenectady, NY • 518-382-0056

STS

Southern Testing Services

Knoxville, TN • 865-966-5330

*T*radition, Quality and Advancement That is... *Renaissance Ready*

Precision Custom Components began manufacturing energy related equipment over 100 years ago. For the last 50 years, PCC has produced nuclear primary system components beginning with the reactor internals for the Shippingport Project, the first commercial nuclear power reactor in the U.S.

Today, PCC is a major domestic supplier to the Commercial Nuclear Industry, the National Laboratories and the Departments of Energy and Defense. The company has recently completed and has been selected to supply additional critical components for new nuclear power plants in the southeastern U.S. and overseas.

The Nuclear Renaissance Has Begun for PCC!

PCC's 270,000 sq. ft. manufacturing facility located in York, PA has the fabrication and machining infrastructure to manufacture the most complex and high integrity equipment. With rail and truck access to anywhere in the Americas, including the nearby Ports of Baltimore and Philadelphia, PCC has shipped equipment weighing over 400 tons throughout the US and to the Middle East and Asia.

Quality is a critical asset for PCC with a Quality Management System that meets or exceeds NQA-1 and ISO 9001. PCC has ASME Code certifications for both Section III and VIII components, holding N, NS, NPT, R, U, U2, and U3 stamps. In fact, PCC is one of only ten firms worldwide to maintain its U3 stamp for large, ultra-high pressure vessels.

PCC's engineers and craftspeople have an average of 30 years experience in the design and manufacture of nuclear components. Material selection, machining, welding and NDE are integral to the culture of PCC and its people.

Relevant experience includes:

- Closure Heads
- Reactor Vessels
- Primary Coolant Pump Components
- Internals (240+ sets)
- Pressurizers
- Steam Generators
- SNF Casks and Canisters (250+)
- Fuel Canal Seal Plate
- Integrated Head Assemblies

To learn more about PCC, contact Jim Stouch at **717-848-1126**; or by email at: **jstouch@pcc-york.com**; or visit our website at: **www.pcc-york.com**.

Quality Inspection Services, Inc. (QISI)

QISI has been providing nuclear quality services for over 20 years in the civil material, non-destructive examination (NDE), heat treating, stress relieving, QA/QC management, geotechnical and environmental drilling, and health and safety services.

QISI has 13 offices located throughout the nation and has successfully mobilized temporary laboratories to jobsites throughout the United States. Our company was formed in 1987, and currently employs approximately 300 fulltime trained and certified individuals. In 2008, QISI had an unprecedented growth increase of 28%.

Our employees are highly skilled and dedicated professionals qualified/certified in accordance with the following organizations: ASME NQA-1 for Inspection Personnel and Lead Auditors; American Welding Society as Certified Welding Inspectors (CWI), Certified Welding Educators (CWE); ASNT-SNT-TC-1A, NAS410, CP-189, and Mil-Std-271 for Nondestructive Testing; and ACI, ICC and NICET for Concrete and Soils.

Our team is able to support all projects from the ground up….from your civil work to Project Commissioning & Turnover. QISI is the team to trust, start to finish, utilizing our NQA-1 Quality Assurance Program (ANSI/AMSE 1984-2004 Editions and ISO 9001 Compliant).

Partial listing of current nuclear projects QISI has performed services under our NQA-1 Program include:

- **Remote Handled Waste Facility** (West Valley, New York). Work includes: QA/QC, Civil, NDE and Safety Management. Overall programmatic implementation.

- **National Enrichment Facility** (Eunice, New Mexico). QISI mobilized an onsite Civil Material Testing Laboratory and a staff of 25 technical personnel within 30 days of the Notice to Proceed. The project also follows the 10CFR50 Appendix B Program Requirements.

- **River Protection Waste Treatment Plant** (Hanford, Washington). QISI mobilized an onsite Civil Material Testing Laboratory and technical personnel within 90 days of the Notice to Proceed.

- **Idaho Cleanup Project** (INL) – Work includes: QC field engineers, civil material and Level III NDE services.

QIS maintains a leading edge in providing consistent and thorough services through technological investment, research and development. This is what keeps us on the cutting edge of our industry for the most effective and safe inspection and testing process.

We will be responsive to our customer's needs and fulfill their expectations by delivering a quality service on or ahead of schedule, and at or below budget; with the utmost attention to Safety and Quality. "For Job Satisfaction-Think Quality!"

Call 1-877-QIS-4-NDE (1-877-747-4633) for more information.

NQA-1 Quality Assurance Program

Providing:

Civil Material Testing
Nondestructive Examination
Heat Treating
Safety & Health Services
Staff Augmentation
QA/QC Services
Vendor Surveillance
Lead Auditor Services

Trust the Team with Quality!

Quality Inspection Services, Inc.

37 Franklin Street, Cathedral Park Tower, Suite 400
Buffalo, New York 14202
Phone: 1-877-747-4633 E-Mail: info@qisi.com
Visit Our Website: www.qisi.com

Office Locations:

Buffalo, NY
Rochester, NY
Syracuse, NY
Long Island, NY
Albany, NY
Erie, PA
Pittsburgh, PA
Manchester, CT
La Porte, TX
Idaho Falls, ID
Hanford, WA
Tampa, FL
Eunice, NM
Jacksonville, FL

Over 40 Continuous Years as a Nuclear Safety Related Fabricator

SSM Industries, Inc. (formerly Schneider Sheet Metal) is the largest Safety Related HVAC designer / fabricator / supplier / installer in the United States. SSM entered the nuclear industry over forty (40) years ago as the metal fabrication division of Schneider Power.

The Power Division of SSM Industries Inc. provides design, qualification, fabrication, and installation support to utilities in today's nuclear market. Over $100 million of safety and non-safety related HVAC ductwork and components has been designed, tested and fabricated by our existing personnel at our facility. We have supplied equipment to virtually every Commercial Nuclear plant in the United States, as well as Nuclear Plants worldwide.

We have developed a complete Nuclear HVAC product line specifically addressing industry issue such as:

- Bubble tight dampers with “Double Acting Pivot Arms” to assure bubble tight performance for 40+ years
- Four different Tornado and High Energy Line Break (HELB) damper designs to assure correct product design is used
- Patented UL rated 3 hour Dynamic Fire Dampers to allow penetrations to be completely sealed

SSM Industries fabricates and installs an average of over 5 million pounds of ductwork a year. 80% of that ductwork is for close tolerance, high quality and regulated applications such as Commercial Nuclear Power Plants, Department of Energy (DOE) facilities, laboratories and hospitals.

SSM maintains a complete 10 CFR 50 / NQA-1 (including all Supplements) Quality Assurance Program. SSM is listed in the NUPIC data base as a pre-qualified vendor to supply Safety Related HVAC equipment and services, including the commercial dedication of components fabricated by others, to all of the commercial nuclear plants in the United States.

SSM INDUSTRIES, INC.
3401 Grand Avenue
Pittsburgh, PA 15255
Phone: (412)-777-5101
Email: powerdiv@ssmi.biz

SSM INDUSTRIES, INC.
POWER DIVISION
Formerly Schneider Sheet Metal

Engineered HVAC & Specialty Metal Fabrication Products, Systems and Site Services for Critical or Safety Related Applications.

Complete Seismic & Environmental Qualifications

1E Qualified

Complete 10 CFR 50 Appendix B NQA-1 Q/A Program

• HVAC SYSTEM COMPONENTS

- ☑ Access Doors
- ☑ Actuators: Electric & Pneumatic
- ☑ Air Handling Units
- ☑ Charcoal Adsorber Units
- ☑ Dampers:
  - ☑ Backdraft
  - ☑ Balancing
  - ☑ Bubble-Tight
  - ☑ Control: Manual, Electric & Pneumatic
  - ☑ Diverter
  - ☑ Fire & Smoke
  - ☑ Guillotine
  - ☑ HELB
  - ☑ Isolation
  - ☑ Tornado
- ☑ Ductwork & Supports
- ☑ Fans: Axial & Centrifugal
- ☑ Filters & Filtration Units (incl. HEPA)
- ☑ Flexible Connections
- ☑ Grilles, Registers & Diffusers
- ☑ Housings
- ☑ Heat Exchangers
- ☑ Cooling Coils
- ☑ Louvers
- ☑ Plenums
- ☑ Sleeves

• SPECIALTY FABRICATIONS

- ☑ Angle Rings
- ☑ Cable Trays & Covers
- ☑ Control Cabinets
- ☑ Doors: Access, Heavy-Duty & Blast
- ☑ Equipment Bases
- ☑ Filter Boxes
- ☑ Fire Barriers: U. L.-Rated, 3 Hour
- ☑ Glove Boxes
- ☑ Sealed Enclosures
- ☑ Seismic Supports
- ☑ Cooling Coils
- ☑ Heating Coils
- ☑ Heat Exchangers
- ☑ Tanks

• RADIATION SHIELDING

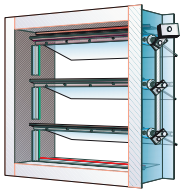
- ☑ Doors & Barriers
- ☑ Penetration Seals

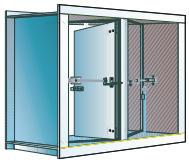
• MATERIAL PROCESSING

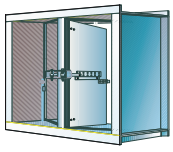
- ☑ Material Bins, Tanks & Chutes
- ☑ Ladders & Sorting Platforms

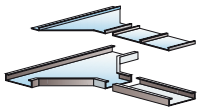
➢ SERVICES ➣

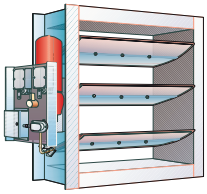
- ☑ Field System Walk downs
- ☑ Engineering Support
- ☑ Installation Supervision & Craft
- ☑ Component and Total System Testing, Adjusting & Balancing
- ☑ Commercial Dedication of client selected Equipment or Components as well as Stock Materials & Supplies


RELIEF / BACKDRAFT DAMPER


TORNADO DAMPER

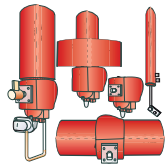

HELB DAMPER

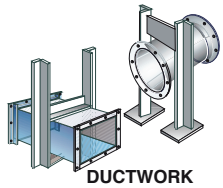

CABLE TRAYS AND COVERS

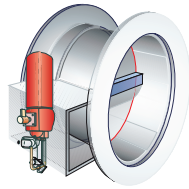

ISOLATION DAMPER

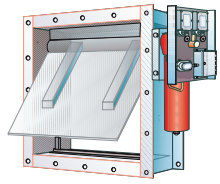

FLEX CONNECTION

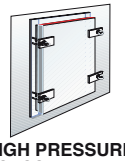
Grills, Registers & Diffusers

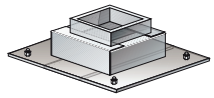

Actuators Pneumatic, Electric, & Electrohydraulic ("fail safe")

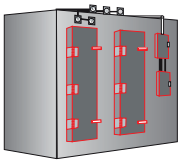

DUCTWORK & SUPPORTS

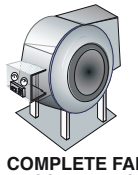

BUTTERFLY DAMPER

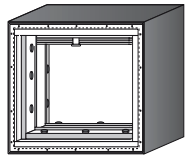

BUBBLE - TIGHT DAMPERS (Class 0, ASME AG-1)

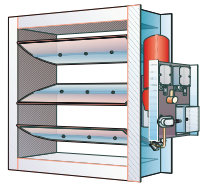

HIGH PRESSURE ACCESS or PLENUM DOOR


REMOVABLE FIRE RATED BARRIOR


COMPLETE HEPA & ADSORBER UNITS (To ASME N-509, 510 & AG-1)


COMPLETE FAN ASSEMBLIES (To ASME N-509, 510 & AG-1)


INTERNAL EXPANSION AIRFLOW RATED 3hr FIRE DAMPER


CONTROL DAMPER

SSM-PL/11

SSM INDUSTRIES Inc.

3401 Grand Ave. - Pittsburgh, PA 15225-1507

Tel: (412) 777-5101 - Fax: (412) 771-5382

E-mail - m.saucier@ssmi.biz

Is Your Supply Chain Ready for the Nuclear Renaissance?

Assure Your Preparedness Now

The Nuclear Energy Institute has identified a shortage of available sources for key, critical hardware. Today's supply chain was built on the single-source supplier as a means of lowering overhead and controlling costs. As growth changes the landscape, your supply chain should reflect this new reality.

Multiple vendor options are critical for your safety related hardware demands. Tightening supply will inevitably lead to delays and increased costs. Preparation now will lead to a more predictable future.

A single choice is NOT a choice.

TRUST Manufacturing is a **manufacturer and distributor of safety related hardware** for all sectors of nuclear power generation, energy and military markets.

Our products include:

- **Safety Related Fasteners**
- **Nuts**
- **Bolts**
- **Studs**
- **Alloy and Stainless Grades**
- **Made to Order Specials**
- **Fittings and Steel Shapes**

Our on-time delivery, 24/7 service, and quality products will enhance the reliability of any project. Trust's 35,000 square foot manufacturing facility and extensive manufacturing capabilities enable us to respond to your routine and expedited requirements.

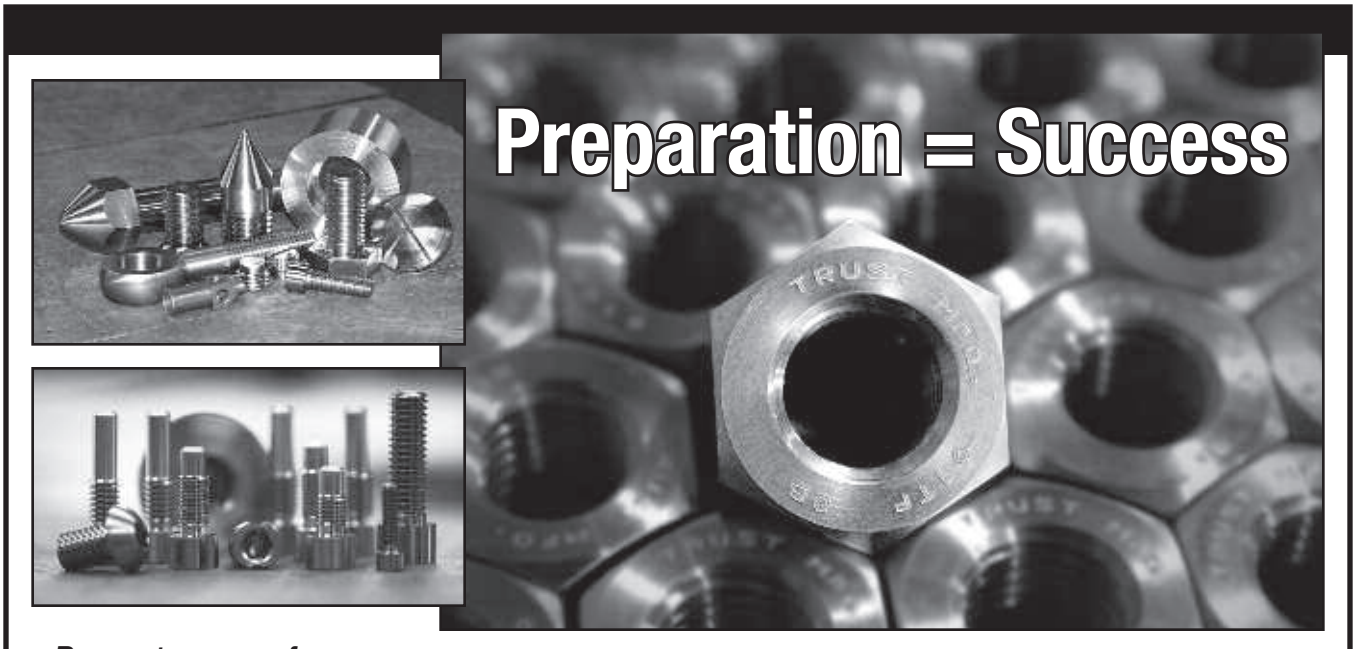
The Trust Manufacturing Quality Assurance Program has been developed to meet the precise and rigid demands of our markets including the following nuclear industry codes and standards.

- **ASME Accreditation for Section III (QSC 594)**
- **US NRC 10CFR Part 50 Appendix B**
- **ASME Section III Subsection NCA-3800 / NCA-4000**
- **ASME / ANSI N45.2 and NQA-1**
- **US NRC 10CFR Part 21**

Preparation = Success

TRUST Manufacturing

www.trustmfg.com



Request a copy of our Quality Assurance Manual

Contact Jim Fitzwilliam at 216-531-8787 or email fitz@trustmfg.com

Call 216-531-8787
www.trustmfg.com
ASME QSC-594

TRUST Manufacturing

Safety Related Fasteners • Nuts • Bolts • Studs • Alloy & Stainless Grades • Made to Order Specials

SUPPORTING MAINTENANCE INNOVATIONS TO IMPROVE ASSET PERFORMANCE

Innovative maintenance practices are essential to safe and efficient plant operation. Underwater Engineering Services, Inc. provides specialized technical and engineering services that promote best practices and ensure that plants meet stringent regulatory and safety requirements. UESI has provided quality technical services and outage support for over twenty years. Today, we are still working with our industry partners to develop new maintenance processes that help to lower maintenance costs, shorten outage schedules, and reduce radiation exposure.

UESI
Underwater Engineering Services, Inc.

Partnerships for the New Nuclear Industry

Call (772)337-3116 or visit our website at **www.uesi.com**

A Greenman-Pedersen, Inc. Company

INNOVATIVE MAINTENANCE PRACTICES IMPROVE ASSET PERFORMANCE

The prospect of new nuclear construction is exciting, but operating nuclear plants will require diligent management of facility assets for years to come. Innovative maintenance practices will be essential to keeping plants operating safely and efficiently. For over twenty years, Underwater Engineering Services, Inc. has provided quality technical services and outage support. In 1988, UESI developed a unique approach to the underwater inspection and repair of safety related coatings that remains in use around the world. Today, UESI is working with its industry partners to develop new maintenance processes that take advantage of advances in robotic technology to lower maintenance costs, shorten outage schedules, and reduce radiation exposure.

As the nuclear industry moves into its next phase, UESI will continue to provide the kinds of quality technical and engineering services critical to meeting regulatory and safety requirements. Our services and capabilities include:

- ASME IWE code inspections
- Underwater coating assessment and repair
- Wet welding to ASME/AWS requirements
- Diving services in the suppression chamber, reactor vessel & fuel pool
- Robotic solutions
- Intake and discharge maintenance
- Project Management
- QA Oversight
- Staff Augmentation
- Engineering Assessments
- Maintenance Program Management

Underwater Engineering Services, Inc.

UESI

Project Assistance Corporation

Nuclear Quality Assurance & Engineering Services

Experience That Counts

Project Assistance Corporation (PAC) has over 33 years of success providing Technical Support Services to the Nuclear Power Industry. PAC has a proven track record of successful project completion and continued relationships with client organizations.

We provide a wide range of support to commercial, industrial, utility and government sector clients. PAC enjoys a reputation for cost effective technical excellence in their services, thoroughness in analysis and documentation, and innovation in solutions.

We are dedicated to supporting clients' needs and in solving every obstacle they face. Experience, knowledge and capability of providing solutions that will help you overcome your greatest challenges under budget and on time are what set us apart.

Quality Assurance, Engineering,
Project Management, Safety & Risk Analysis,
Government and Staff Augmentation Support

Augusta, GA ◆ Austin, TX ◆ Berkeley, CA ◆ Richland, WA ◆ Walnut Creek, CA

WWW.PACPEOPLE.COM

PAC SERVICES

NUCLEAR QA PROGRAM DEVELOPMENT & IMPLEMENTATION

PAC develops supporting Quality Assurance programs for companies entering the Nuclear Industry, and will provide a sound program based on current regulatory requirements. If you have a NQA-1 program that requires updating; an ISO program that you would like to adapt for Nuclear Safety related use, or are in need of a new Nuclear QA program developed from scratch, PAC can provide you with a program that meet the requirements of NQA-1 and 10CFR50 Appendix B.

PAC can help implement your new QA program, provide required training, provide development of supporting procedures and processes, and provide ongoing monitoring of your program to ensure conformance and efficiencies are maintained. These programs consist of areas such as:

- QA Records Control
- Non-Conformance Reporting
- Human Performance Management
- Lessons Learned
- Corrective Action
- Quality Control
- Root Cause Analysis
- Internal Independent Assessment

ENGINEERING SERVICES: DESIGN AND SUPPORT

PAC's Engineering division provides design, engineering and analytical support to the nuclear industry. Our engineering team are highly skilled professional engineers that cover all disciplines including: mechanical, electrical, civil & structural engineering. We excel at providing the resources necessary to engineer and design technically complex, specialized facilities. PAC provides a full array of qualification and dedication services for new and replacement commercial-grade components intended for service in safety-related systems

- Commercial Grade Dedication Testing and Inspections
- Material and Corrosion Engineering
- Structural Steel and Concrete Detailing
- Heat Transfer Analysis
- Stress and Fracture Mechanics Analysis
- Failure Analysis and Troubleshooting in Static and Rotating Equipment
- Detail Drawing Services
- Piping and Pressure Vessel Design and Engineering

GOVERNMENT SERVICES

PAC managers have worked in the U.S. Department of Defense (DOD) and Department of Energy (DOE) complexes since 1968. The scope of these contracts include support to; nuclear operations, environmental cleanup, facility design reviews, construction oversight and nuclear safety authorization basis oversight.

PAC government experience includes:

- Independent Assessment Reports
- Management System Design
- Structural Review Reports
- Environmental Permit Reviews
- Risk Management Plans
- Quality Assurance Programs
- Budget Packages
- Project Execution Plans
- Procedures
- Financial Reports
- Earned Value Analysis Reports

PROJECT MANAGEMENT / SCHEDULING & ESTIMATING

PAC personnel are expert users of Primavera, which has been instrumental in baseline planning of large and small projects:

Services Include:

- Cost Estimating
- Project Management
- Budget Formulation
- Life cycle baseline development
- Acquisition Planning
- Project Scheduling

QUALITY ASSURANCE SERVICES

Quality Assurance Services incorporates our traditional prime service area of Quality Assurance program and engineering support with support services for issues facing today's industry, such as dedication of commercial grade items for nuclear applications and programs for the detection of counterfeit parts. We have numerous Lead Auditors and Quality Technical Specialist on hand to help you with any and all your challenges you may face.
This area also incorporates our services associated with the following:

- Supplier Audits / Surveillances
- Internal Audits / Surveillances
- Independent Assessments
- Procedure writing
- Supplier Qualification
- Inspection Planning / Inspection
- Operational Readiness Reviews
- Commercial Grade Dedication program development

RISK MANAGEMENT

PAC performs risk management services for Government programs and projects to identify and manage key technical, schedule and cost risks to ensure successful program / project execution.

Risk Services:

- Risk Assessment
- Risk Handling
- Risk Monitoring
- Risk Feedback
- Determination of residual and secondary risk

ENVIRONMENTAL SERVICES

Our Hazardous waste services encompass both systems, engineering and administration program development. PAC's experience in environmental services and facility management includes, Tri-Party Agreement Support, RCRA permit reviews, pollution prevention program support, and support to the Tank Closure and Waste Management at Hanford.

STAFF AUGMENTATION SERVICES

With the overwhelming demand for quality and skilled professionals at all levels, PAC can help augment your staff or attract the "A" players for strategic positions which enhance your business' growth. We solve your workforce challenges by focusing on the critical qualifications required and the cultural fit for your organization.

Our recruiting team has 33 years of experience in the nuclear field, sound knowledge of the marketplace and the ability to work with complex organizations or small companies. We have the credentials, the talent and the expertise to provide an expedient and economical solution that works.

PAC
Project Assistance Corporation

CORPORATE OFFICE
1855 Olympic Blvd, Suite 165
Walnut Creek, CA 94596
(706) 945-0304 (Inquiries)
(925) 943-5750
(925) 943-5753 FAX

REGIONAL OFFICES
- Augusta, GA
- Austin, TX
- Berkeley, CA
- Richland, WA

For more information on PAC and a detailed overview of our services, please visit
www.pacpeople.com
or
Email: info@pacpeople.com