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A Leader in Waste Management and Decommissioning
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What next, Diablo Canyon?

In the nuclear world, and the radwaste world in particular, things typically move slowly. It can, for example, take years to license a nuclear facility, and often many more to overcome the myriad obstacles to make it a reality. That’s why it is interesting, and maybe a bit jarring, to see such phrases as “expedited process” and “hurried pace” being used when talking about a nuclear project.

These exact phrases were used in an August 23 New York Times article to describe the quickening efforts to keep California’s Diablo Canyon nuclear power plant from closing. Plant owner Pacific Gas & Electric announced back in 2016 it was considering plans to shut down the plant’s two units by 2025. And while many clearer heads in the state and elsewhere since then have raised concerns about closing the state’s last operating nuclear power reactor, recent efforts to keep Diablo Canyon running have reached a fevered pitch. Most recently with a proposal in early August by Gov. Gavin Newsom to provide PG&E a $1.4 billion forgivable loan to keep the plant operational.

In the background of the battle to save Diablo Canyon, PG&E has been quietly planning for shutdown and decommissioning. This is the focus of our feature beginning on page 20. It may seem premature to discuss the burial of a still-living power plant (I cannot help but imagine the poor serf in Monty Python and the Holy Grail proclaiming, “I’m not dead yet!”), and it may be. By the time this issue reaches your hands, PG&E may have announced a decision to keep the plant open. PG&E’s pre-closure planning, however, is unlikely to go to waste. As noted in the article, the company has been able to reduce its estimated decommissioning cost by around $1 billion from its initial 2019 estimate. Those savings are unlikely to disappear should the plant remain open for another 5-10 years or longer. The preplanning also has allowed the utility to align its decommissioning methodologies and goals with regulators and community members, reducing the potential for the kind of conflict that can delay schedules and increase costs.

The importance of that last point cannot be overemphasized. Currently, there is talk among those in the nuclear industry of the value of designing new nuclear power plants with decommissioning in mind. This, of course, means making the segmentation, packaging, and removal of nuclear systems and components as easy, safe, and efficient as possible. But it should also mean building plants with as much stakeholder input as possible (within reason). Having community members, local governments, and of course regulators, involved in building a vision for the plant, and with its retirement in mind, may avoid many of the pitfalls and frictions that have plagued previous endeavors.

Hopefully, the lessons learned from Diablo Canyon and the almost two dozen other power reactors undergoing decommissioning in the United States will serve well to inform the decontamination and decommissioning of the next generation of nuclear power plants. In the meantime, we hope you enjoy this issue of Radwaste Solutions, which focuses on issues related to D&D and environmental remediation.
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Final EIS issued for New Mexico interim storage facility

The Nuclear Regulatory Commission in July published its final environmental impact statement (EIS) for Holtec International’s proposed HI-STORE consolidated interim storage facility (CISF) for spent nuclear fuel in southeastern New Mexico. Based on its environmental review, the NRC staff recommends issuing the license, subject to the findings in the staff’s ongoing safety review of the application.

Holtec proposes initially to store 500 canisters holding approximately 8,680 metric tons of spent nuclear fuel at the HI-STORE CISF in a first phase and eventually up to 10,000 canisters in an additional 19 phases. The canisters would be transported by rail from operating, decommissioning, and decommissioned commercial nuclear power plants around the country.

The NRC’s final EIS assesses the environmental impacts of the entire project, or all 20 possible phases, from construction through decommissioning. It looks at the impacts to land use, transportation, geology and soils, surface waters and wetlands, groundwater, ecological resources, historic and cultural resources, environmental justice, and several other areas.

“Our community is pleased that the NRC has verified with the issuance of its environmental impact statement that the HI-STORE CISF project is a safe project with no negative implications to our existing businesses or to the public,” said Sam Cobb, mayor of Hobbs, N.M.

The city of Hobbs, along with the city of Carlsbad, is a member of the Eddy-Lea Energy Alliance (ELEA) of New Mexico, which in 2015 launched the initiative to establish an interim spent fuel storage facility at a site between the two cities. Holtec, in partnership with ELEA, submitted its application to the NRC for the HI-STORE CISF license in 2017.

The NRC published a draft EIS for public comment in March 2020. Due to the COVID-19 public health emergency, the public comment period was extended to six months. During that time, NRC staff held six online public meetings to present the draft EIS and receive public comments. According to the NRC, more than 4,800 comment submissions with 3,718 individual comments were received and addressed in the final EIS.

Publication of the final EIS completes the environmental portion of the NRC’s licensing review. The staff will make a licensing decision following completion of its safety evaluation report, expected in January 2023.
DECOMMISSIONING

EnergySolutions gets go-ahead for D&D Kewaunee, NS Savannah

The Nuclear Regulatory Commission approved in March the transfer of the operating license of the shutdown Kewaunee nuclear power plant from Dominion Energy to Utah-based EnergySolutions for decontamination and decommissioning. Wisconsin Public Service Commission also approved the transfer, which includes the general license for the Wisconsin site’s spent fuel storage facility.

EnergySolutions entered into an agreement with Dominion in May 2021 to acquire the Kewaunee site for accelerated decommissioning. The transaction would transfer the plant operator, Dominion Energy Kewaunee, to EnergySolutions, and rename it KewauneeSolutions.

The Kewaunee facility, a 574-MWe pressurized water reactor, is EnergySolutions’ fourth ongoing nuclear power plant decommissioning project. The others are the San Onofre nuclear plant in California, the Fort Calhoun plant in Nebraska, and Three Mile Island-2 in Pennsylvania. Located in Carlton, Wis., Kewaunee began operations in 1974 and permanently shut down in May 2013. Transfer of the fuel to the dry storage facility was completed in 2018.

For the decommissioning work to be done by KewauneeSolutions, the facility will be fully dismantled and all radioactive waste will be removed. According to the NRC, EnergySolutions has said it intends to begin active decontamination and demolition of the facility this year and complete decommissioning by 2030—decades earlier than Dominion Energy had planned.

EnergySolutions also announced in March that it has joined Radiation Safety and Control Services (RSCS) in the decommissioning of NS Savannah, the world’s first nuclear-powered merchant ship, currently berthed at the Port of Baltimore in Maryland.

EnergySolutions said that a joint venture of the two companies, Nuclear Ship Support Services, is conducting the final phases of decommissioning the ship’s reactor, which was defueled in 1975 but remains in place. The ship, one of only four nuclear-powered cargo ships ever built, was in service between 1962 and 1972. It will be preserved for future use as a museum following decommissioning.

According to EnergySolutions, remediation work is expected to be completed in mid-2023, and NS Savannah’s license from the Nuclear Regulatory Commission is expected to be terminated by 2025. Designated a Nuclear Historic Landmark by the American Nuclear Society and a Historic Mechanical Engineering Landmark by ASME, NS Savannah was commissioned in July 1956 under President Eisenhower’s Atoms for Peace program.

Source Points continues
Holtec acquires Michigan’s Palisades and Big Rock Point

Holtec International has completed the acquisition of the Palisades nuclear power plant and the Big Rock Point site from Entergy Corporation. The Nuclear Regulatory Commission approved the license transfer for the two sites, both located in Michigan, in December 2021.

Under Holtec’s asset transfer agreement with Entergy that was announced on June 28, ownership of the sites has been transferred to Holtec International, with Holtec Decommissioning International serving as the license holder and prime decommissioning contractor.

The Palisades nuclear power plant. (Photo: Holtec International)

Located in Covert, Mich., Palisades’ 777-MWe pressurized water reactor was removed from service on May 20 after more than 50 years of operation. The shutdown occurred 11 days prior to the plant’s scheduled May 31 retirement date after a site and world-record production run of 577 straight days of operation. Big Rock Point, located in Charlevoix, Mich., was shut down in 1997 and decommissioned in the early 2000s. Only the reactor’s independent spent fuel storage installation remains at the site.

Holtec has stated that over the past few years it has been working methodically with Palisades personnel on an integrated transition plan, laying the foundation for decommissioning of the site. The first substantial activity will be moving the plant’s spent fuel from its spent fuel pool to dry storage, which is projected to be completed by 2025.

The Palisades decommissioning project will have a 19-year timeline and will render the 400-plus acre site fit for commercial and industrial use, except for the independent spent fuel storage installation.

LOW-LEVEL WASTE

NRC consolidates Part 61, GTCC LLW rulemaking

The Nuclear Regulatory Commission will integrate two separate rulemaking activities concerning the disposal of low-level radioactive waste, issuing a “re-proposed” rule that consolidates updates to 10 CFR Part 61, Low-Level Radioactive Waste Disposal, and proposed changes to the requirements for the near-surface disposal of greater-than-Class C (GTCC) waste.

The three acting NRC commissioners voted in March to approve the recommendation of agency staff to combine the rulemaking activities, as proposed in its October 2020 paper, Path Forward and Recommendations for Certain Low-Level Radioactive Waste Disposal Rulemakings (SECY-20-0098). The commissioners’ votes and accompanying comments approving SECY-20-0098 were made public on April 5.

The commissioners also approved a provision, included in SECY-20-0098, allowing NRC...
Agreement States to license the disposal of GTCC waste streams that are suitable for near-surface disposal, along with a staff recommendation to explore regulatory approaches that would allow for a single regulator for an Agreement State licensee disposing of GTCC waste containing strategic special nuclear material.

In approving the SECY-20-0098 recommendations, the commissioners directed NRC staff to reexamine the technical basis for the performance objectives in Part 61 and ensure that the compliance period following the closure of a disposal facility is based on scientific data.

“Rather than using the same compliance period for disposal sites containing significant amounts of depleted uranium, GTCC, or transuranic waste, the staff should consider a site-specific, graded approach based on when the peak dose is projected to occur or establish a longer compliance period for disposal sites containing significant quantities of mobile, long-lived radionuclides,” an April 5 memorandum to NRC staff states.

DOE authority to sell depleted uranium needs clarification, GAO says

The Government Accountability Office is recommending that Congress clarify the Department of Energy’s legal authority to sell depleted uranium hexafluoride (DUF₆) left over from uranium enrichment operations at the department’s Portsmouth Site in Ohio and the Paducah Site in Kentucky.

The DOE estimates that it could cost at least $7.2 billion to convert its inventory of DUF₆ into more stable chemical forms and dispose of it off-site. But if the DOE can transfer portions of its DUF₆ inventory—such as by selling some to a private company—it could save billions, according to the GAO.

The GAO findings are contained in its report Nuclear Waste Cleanup: DOE’s Efforts to Manage Depleted Uranium Would Benefit from Clearer Legal Authorities, published on July 27.

The DOE’s Office of Environmental Management (EM) used the COVID-19 shutdown to perform maintenance and modifications at the two DUF₆ conversion facilities at Portsmouth and Paducah. These facilities convert DUF₆ into two primary products: depleted uranium oxide and hydrofluoric acid.

According to the report, the agency spent about $47.4 million on modifications to improve the facilities’ efficiency. EM has not fully assessed the impact of this shutdown on the conversion mission, but officials have stated that they were developing new cost and schedule estimates for the facilities that will be finalized in 2022, the GAO said. Conversion operations restarted at the Paducah facility in November 2021, and EM officials told the GAO that operations restarted at the Portsmouth facility in July 2022.

EM has three agreements to reserve nearly 30,000 cylinders of DUF₆ (about 44 percent of the inventory) for use by other entities. If the agreements are finalized, the agency may not need to convert all its DUF₆ and could reduce operations of the conversion facilities by roughly 30 years, potentially saving over $2 billion in operations costs, according to the GAO report.

A DUF₆ storage cylinder is moved at the Portsmouth DUF₆ conversion facility. (Photo: DOE)
Texas threatens DOE on continued storage of Los Alamos waste

The Texas Commission on Environmental Quality is threatening enforcement action against the Department of Energy for failing to meet its obligations in removing containers of transuranic waste currently held in temporary storage at Waste Control Specialists’ Federal Waste Facility in western Texas.

In a letter to DOE deputy secretary David Turk dated May 10 and made public on June 1, Toby Baker, executive director of TCEQ, said that the DOE has yet to come up with a plan to remove 74 standard waste boxes of TRU waste that were shipped from Los Alamos National Laboratory to the WCS facility in 2014. The waste was to be disposed of at the Waste Isolation Pilot Plant in New Mexico but was diverted to the WCS site after operations at WIPP were suspended because of the February 2014 radiological release at the underground repository.

Under an agreement signed by the DOE and TCEQ in 2015, the DOE was to remove the TRU waste from the WCS site for shipment out of Texas once WIPP resumed normal waste disposal operations. WIPP was able to resume disposal operations in January 2017 after the facility was remediated and stricter waste controls were put in place.

Some of the LANL waste boxes that were shipped to WCS, however, were found to be similar to the waste drum that breached at WIPP, and those boxes no longer meet Department of Transportation shipping requirements or WIPP waste acceptance criteria.

In his letter to the DOE, Baker notes that the department submitted a draft plan with the commission for handling the LANL waste on April 1 of this year. Baker, however, said the plan only addresses the unloading and storage of the waste after it is removed from the federal waste facility, with no indication of when and how the waste will be shipped off-site. “The DOE’s draft plan is not a plan to expedite the removal of the remaining LANL TRU waste in 2022. In fact, it does not address removing the waste from Texas at all,” Baker wrote.

In a May 19 follow-up letter to William “Ike” White, senior advisor for the DOE’s Office of Environmental Management, David Carlson, president and chief operating officer of WCS, also urged the DOE to find a pathway for removing the waste. Carlson said that his company is “concerned that the patience of TCEQ will be exhausted absent a greater commitment by DOE to establish date certain milestones” in moving the LANL waste off-site.

The Nuclear Regulatory Commission issued an order in 2014 allowing WCS to store the LANL TRU waste at its facility until 2016. Since then, the NRC has extended that two-year deadline three times, and the agency is currently considering another request to further extend the storage period until December 2024.

The NRC, noting that the LANL waste cannot be shipped from the WCS site because it currently does not meet DOT shipping requirements, issued an environmental assessment and finding of no significant impact in the May 27 Federal Register in support of WCS’s latest request to continue storing the waste at its site.
WIPP

$3 billion M&O contract awarded to Bechtel affiliate

Reston, Va.–based Tularosa Basin Range Services (TBRS), a single-purpose entity under the umbrella of Bechtel National, has been awarded the 10-year, $3 billion management and operating contract for the Waste Isolation Pilot Plant (WIPP) by the Department of Energy’s Office of Environmental Management (EM). Located near Carlsbad, N.M., WIPP is the DOE’s geologic repository for defense-generated transuranic waste.

The new contract replaces the current WIPP M&O contract held by Nuclear Waste Partnership, which expires on September 30. The contract with TBRS was announced on July 11.

EM issued a final request for proposals for the WIPP M&O contract on June 2, 2021. The office said it received five proposals in response to the solicitation, and TBRS was selected after its proposal was determined to be the best value to the government.

The agreement with TBRS is a cost-plus-award-fee M&O contract with an indefinite delivery/indefinite quantity contract line item number. It will include a four-year base period and six one-year option periods. As the WIPP M&O contractor, TBRS will support EM’s mission by managing, operating, and maintaining the WIPP site by performing work that includes the following:

- The Centralized Characterization Project.
- Transportation activities.
- WIPP operations.
- Projects, both capital asset and non-capital asset.
- Experimental and testing activities.
- WIPP program support.

The company is also required to maintain and report on an annual Community Commitment Plan. TBRS will use Los Alamos Technical Associates as a small business teaming subcontractor.

IDAHO SITE

Test run completed on liquid waste treatment facility

The Department of Energy’s Office of Environmental Management (EM) said it continues to make progress toward the start of operations of the Idaho National Laboratory Site’s Integrated Waste Treatment Unit (IWTU), having completed a final test run of the facility earlier this year. EM announced on August 2 that IWTU staff operated the facility continuously for nine weeks under stable temperatures and pressures, converting approximately 137,000 gallons of liquid simulant to a granular solid.

In addition to more than doubling the previous simulant treatment milestone—about 64,000 gallons—engineers and operators with EM contractor Idaho Environmental Coalition (IEC) also...
successfully completed a contractor readiness assessment. The DOE scheduled an independent federal facility readiness assessment that was to commence in mid-August. Those two assessments are crucial for validating the readiness of IWTU for radiological operations, according to EM.

“The plant has operated extremely well during this several-week run,” said Bill Kirby, IEC senior director of liquid waste and fuels. “Our staff has done an outstanding job managing all facets of the facility. We continue to set performance records weekly.”

Once fully operational, the IWTU will introduce a small percentage of sodium-bearing waste to simulant, then increase the percentage of waste in increments until 100 percent of the feed is actual waste. The IWTU was scheduled to begin radiological operations this fall.

HANFORD SITE

Supreme Court rules against Washington workers’ comp law

The U.S. Supreme Court has struck down a Washington state workers’ compensation law that was designed to make it easier for workers at the Department of Energy’s Hanford Site to receive compensation benefits. The court, by unanimous decision, found on June 21 that the law violates the U.S. Supremacy Clause and discriminates against the federal government and its contractors.

In 2018, Washington state lawmakers passed legislation amending the workers’ compensation law to presume that diseases, including cancers and respiratory illnesses, that developed while employed at Hanford are occupational and should trigger benefits eligibility. The 2018 law applied exclusively to workers at the Hanford Site, located near Richland, Wash.

The federal government challenged the law, arguing that it exposes government contractors, and by extension the United States, to high costs that are not incurred by similarly situated state and private employers. The law was upheld by the U.S. District Court for the Eastern District of Washington in 2019, and the Ninth Circuit Court of Appeals affirmed that decision in August 2020. The Biden administration then appealed the case to the Supreme Court in September 2021.

After the Supreme Court agreed to hear the case, and to address concerns voiced by the federal government, the Washington state legislature modified the law in March of this year to apply to all workers at all radiological waste sites in the state. Having amended the law, Washington argued that the case was moot and should be dismissed by the Supreme Court.

In delivering the Supreme Court’s opinion, Justice Stephen Breyer said that the Washington state law is unconstitutional under the Supremacy Clause, which “generally immunizes the federal government from state laws that directly regulate or discriminate against it.” Breyer further added that the law does not fall under a congressionally mandated waiver of immunity.

As for the state’s argument of mootness, Breyer said, “If there is money at stake, the case is not moot.” Breyer
Source Points

noted that, in winning the case, the U.S. government stands to recoup or avoid paying between $17 million and $37 million in workers’ compensation claims awarded under the 2018 law.

Following the Supreme Court’s decision, Bob Ferguson, attorney general for the state of Washington, said that the court’s ruling does not affect the state’s amended 2022 law, which will remain in place.

**Cocooning begins on K East Reactor**

The Department of Energy’s Office of Environmental Management (EM) reported that construction is well underway on a protective enclosure, or cocoon, for the K East Reactor building at the Hanford Site. EM states that it has achieved one of its key construction priorities for 2022 by beginning construction of the enclosure, which is designed to protect the reactor building while the radioactivity in the deactivated reactor core decays over the next several decades, making it safer and easier to decommission.

Last summer, EM contractor Central Plateau Cleanup Company was awarded a subcontract for the installation of the steel frame, and crews broke ground on the site last fall. Earlier this year, workers finished backfilling and compacting the area around the former reactor with approximately 34,000 cubic yards of sand and gravel to level the site before pouring a 6-foot-thick concrete foundation to support construction of the cocoon. The first steel columns for the enclosure were placed in mid-May.

Construction activities were to continue through the summer, with workers expected to finish the structural steel skeleton and install metal siding on the walls and roof to fully enclose the building by fall. The completed structure will be more than 150 feet wide and 120 feet tall. The design allows for routine inspections of the reactor every five years. Additional safety features include new lighting between the structure and the reactor building, as well as upgraded lighting inside the building.

**CANADA**

**NWMO moves closer to selecting spent fuel repository site**

Canada’s Nuclear Waste Management Organization (NWMO) has completed a deep borehole drilling program at the two sites in Ontario under investigation for potentially hosting a deep geological repository to hold the country’s spent nuclear fuel. The NWMO said that Canada’s top geoscientists are leading the studies, in which approximately eight kilometers of core samples were pulled from the bedrock in the Wabigoon-Ignace area and the Saugeen Ojibway Nation (SON)–South Bruce area.

The township of Ignace and municipality of South Bruce are the remaining two communities under consideration for hosting a geological...
An NWMO geoscientist examines core samples pulled from rock in South Bruce, Ontario, as part of investigations of a potential deep geological repository. 

(Photo: NWMO)

repository from the initial 22 communities that expressed interest when the NWMO began its site selection process in 2010. The NWMO gradually narrowed its focus to fewer areas through technical site evaluations and working with the interested communities. The organization said in August that it expects to select a final site in the fall of 2024.

The completion of the last borehole at the potential site in the South Bruce area follows on work in the Ignace area, which wrapped up in November 2021 after five years of field study that started in 2017. Borehole drilling and testing up to 1,000 meters below the surface is part of the NWMO’s broader site investigation work to ensure the site will meet Canada’s regulatory requirements.

“Completion of this drilling program is a significant step forward in our geoscience work,” Lise Morton, NWMO vice president of site selection, said on April 7. “In addition to informing the safety case for the project, the resulting data will also provide important insights to the communities that are considering hosting the project in their area.”

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The Future of Diablo Canyon

While many Californians are hopeful the state’s last nuclear power reactor can be saved . . .
The reports of the death of the Diablo Canyon nuclear power plant may be greatly exaggerated. While Pacific Gas and Electric (PG&E) announced as early as 2016 that it would be closing California’s last operating nuclear power plant at the end of its current operating license, there has been growing political pressure to keep the plant, and its 2,200 MWe of carbon-free energy, running.

Both nuclear energy and environmental advocates have called for continued operation of the two-unit Westinghouse pressurized water reactor. On August 11, California Gov. Gavin Newsom proposed allocating up to $1.4 billion for a forgivable loan to PG&E to keep Diablo Canyon operating for another five to 10 years.

PG&E, likewise, has shown a willingness to keep Diablo Canyon open, saying this summer that it expected to submit an application to the Department of Energy for funding through the department’s $6 billion Civil Nuclear Credit Program. As of this writing, PG&E has not yet applied for the credit.

The company, however, has not been sitting idly by hoping for an 11th-hour reprieve. For the past six years the company has been drawing up a road map for the decommissioning of Diablo Canyon. Should the plant close, PG&E expects this early planning will accelerate the decommissioning schedule and save the company a significant amount of money in decontamination and dismantlement costs, all while increasing safety and efficiency.

How much money? Speaking at the 2022 Annual Meeting of the American Nuclear Society in June, Tom Jones, PG&E director of government relations, said that “between repurposing and early planning, we have driven over a billion dollars out of the project so far.”
the company estimated the cost of decommissioning Diablo Canyon to be $4.1 billion in 2020 dollars.

### The Economics

In November 2018, PG&E officially notified the Nuclear Regulatory Commission that it intended to permanently cease power operations at Diablo Canyon at the expiration of its existing operating licenses. (PG&E withdrew its 20-year license renewal application with the NRC in 2018.) Diablo Canyon’s Unit 1 is to shut down on November 2, 2024, followed by Unit 2 on August 26, 2025. The notification to the NRC followed PG&E’s August 2016 filing with the California Public Utilities Commission (CPUC) of a joint proposal with labor and environmental groups in which the company agreed to phase out nuclear power.

In making the decision to close the plant, PG&E said there were several contributing factors, including the increase of California’s Renewable Portfolio Standard to 50 percent by 2030, doubling of energy efficiency goals under the state’s Clean Energy and Pollution Reduction Act, the challenge of managing overgeneration and intermittency conditions under a resource portfolio increasingly influenced by solar and wind production, the growth rate of distributed energy resources, and the potential increases in the departure of the company’s retail load customers to Community Choice Aggregation.

Following notification to the NRC, PG&E submitted an updated post-shutdown decommissioning activities report (PSDAR) to the agency in December 2019. In that report, PG&E said it planned to decommission Diablo Canyon using the NRC’s DECON method, with the majority of decommissioning work beginning soon after Unit 2 is shut down. PG&E’s schedule aims at having the plant fully decommissioned, the site (excluding the independent spent fuel storage installation) restored, and its license terminated by 2038.

Included in the PSDAR is PG&E’s decommissioning cost estimate of $5.1 billion in 2019 dollars. That estimate includes the cost of storing the spent fuel and greater-than-Class C waste until it can be transferred to the Department of Energy, completing site restoration work, and terminating the NRC license.

More recently, in PG&E’s 2021 Nuclear Decommissioning Cost Triennial Proceeding, which is updated and filed with the CPUC every three years, the company estimated the cost of decommissioning Diablo Canyon to be $4.1 billion in 2020 dollars.

To conduct the decommissioning, PG&E’s Tom Jones said that the company will pursue a “hybrid model,” where PG&E will retain the Diablo Canyon license and oversight of the plant but contract out the decommissioning work to an outside contractor. This is similar to the model being used by the San Onofre Nuclear Generating Station in Southern California, where California Edison selected a joint venture of AECOM and EnergySolutions as the plant’s decommissioning general contractor.

Given California’s regulatory environment, Jones said that this contract model makes more sense for PG&E than methods used by plants such as New York’s Indian Point nuclear power plant, where the plant’s assets and license were wholly acquired by Holtec International for the purpose of decommissioning.

“It is the best model to protect potential future liabilities, maintain your revenue stream, and get the work done efficiently,” he said.
Stakeholder Engagement

Jones, describing PG&E’s efforts to reduce costs and accelerate the decommissioning schedule, said that part of the early planning his company did was to engage with state and federal regulators, along with the surrounding community, to find out what they wanted to see happen at the site. “We knew that if we could drive that process early, we could get alignment with key stakeholders and drive contention out of the regulatory process, preserving our schedule,” he said.

Soon after PG&E announced plans to close Diablo Canyon, the company established the Diablo Canyon Decommissioning Engagement Panel, a group of 11 volunteers who review information and provide direct input on behalf of the local community on decommissioning activities.

Jones said the panel membership broadly reflects the community, with knowledgeable members with differing interests and areas of expertise. This includes a radiologist, a member of the local labor union, a representative of the Northern Chumash Tribe, and local officials, as well as a spokesperson for the antinuclear group San Luis Obispo Mothers for Peace.
A map of the lands surrounding Diablo Canyon. The reactor campus is located in Parcel P. (Image: PG&E)
“They are not just interested in land use,” Jones said of the panel members. “They are talking about fuel management, labor strategies, and transportation of the waste products. They are also focused on the economic activities, ensuring that we are hiring local skilled labor.”

Jones added that the panel was interested in PG&E’s intended handling of the spent nuclear fuel and the design of its independent spent fuel storage installation. Given Diablo Canyon’s location in a marine environment with seismic activity, community members were concerned about the potential for chloride stress corrosion cracking and earthquake damage.

To build trust with the community, and to ensure transparency, Jones said that PG&E had some of its systems and processes independently evaluated, even though such reviews are not required by the NRC. This included having Diablo Canyon’s dry cask storage design evaluated by the California Energy Commission.

The company also worked with the B. John Garrick Institute for the Risk Sciences at the University of California at Los Angeles on developing a methodology for probabilistic risk assessment of spent nuclear fuel handling and storage programs, assessing the radiological risks associated with storing and moving spent fuel from Diablo Canyon’s two spent fuel pools to its ISFSI.

Jones also noted that PG&E works closely with state and local agencies in planning Diablo Canyon’s decommissioning. Several government entities share jurisdiction over Diablo Canyon’s 750-acre plant site. This includes the NRC, the California Coastal Commission, and San Luis Obispo County. Federal, state, and local permits and approvals are required to perform nearly every decommissioning activity.

“We have at least one and usually two regulators in California for every single action we want to do,” Jones said. “That is why we do so much stakeholder engagement up front, to keep those issues narrow, build a robust administrative record, and hopefully get through the process a bit easier.”

Cost and Schedule

Located along 14 miles of pristine coastline on 12,000 acres of PG&E-owned land, the remote Diablo Canyon nuclear power site acts as its own little city, with its own water desalination facility, sewage system, and police and fire departments. With all of the auxiliary structures and systems at the site, PG&E has looked into repurposing some of the plant’s infrastructure, saving the cost and time of demolishing and removing otherwise useful assets.

This includes Diablo Canyon’s breakwater and marina. The only protected marina on the coast between Morro Bay and Avila Beach, the marina currently hosts the reactor’s intake
structure and a marine vessel operations center. The breakwater contains twice the amount of material as the rest of the entire reactor complex, Jones said, adding that it would all have to be shipped out of state if it were to be removed.

Instead, PG&E is communicating with outside parties that may be interested in keeping the marina and intake structure and repurposing it for recreational and commercial activities, including supporting the development of offshore wind energy. Retaining the marina would save PG&E about $400 million in decommissioning costs, Jones said.

PG&E is also developing plans to use the marina to transport waste off-site by barge, which the company says will significantly reduce risk and environmental impact while also reducing total costs. Using barges along with trucks to ship bulk waste will enable large volumes of demolition waste to be shipped for disposal in a short period of time.

Another area Jones said PG&E has been able to reduce schedule and cost is in spent fuel handling. This spring, PG&E announced that it has contracted Orano to transfer Diablo Canyon’s spent fuel to dry storage using its Extended Optimized Storage NUHOMS system. According to PG&E, the increased thermal and seismic capabilities of the NUHOMS system will allow the company to complete the transfer of the spent fuel to the ISFSI soon after the plant’s scheduled closure.

In its initial filings with the NRC, PG&E assumed a seven-year cooling period before transferring the spent fuel to dry storage. The company later concluded that a four-year cooling period would be adequate. Now, with the new Orano system, the company plans to begin transferring spent fuel to the ISFSI after 3.25 years of cooling, at a savings of $300 million.

Finally, in 2019, the NRC granted PG&E exemptions from 10 CFR 50.82 regulations, allowing the company to withdraw nearly $188 million from Diablo Canyon’s decommissioning trust fund for decommissioning planning prior to shutdown. This was instead of the 3 percent of the generic amount the NRC allows under 10 CFR 50.75. “It worked out very well for us,” Jones said of the exemption.

Accessing the funds allowed PG&E to do preplanning work associated with spent fuel management and site restoration, and according to the company, has allowed it to streamline the decommissioning effort, reduce costs, and accelerate the decommissioning schedule while still enhancing safety and efficiency.
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The Decommissioning of Portsmouth’s X-326

Demolition and disposal shifted into high gear this spring at the DOE’s former uranium enrichment plant in Ohio.

In the 1950s, the U.S. Department of Energy constructed the Portsmouth Gaseous Diffusion Plant in rural southern Ohio to enrich uranium, alongside two other federally owned and managed facilities in Oak Ridge, Tenn., and Paducah, Ky. The Cold War-era plant was built as a self-sufficient industrial city with more than 400 buildings and facilities centered around three massive gaseous diffusion process buildings that could enrich the level of the uranium-235 isotope for nuclear fuel in the defense and energy sectors.

Gaseous diffusion enrichment operations ended at Portsmouth in 2001. Subsequent work has turned to environmental cleanup, waste management, and demolition of facilities and buildings that were no longer needed. It has been a methodical process, and progress has been steady but largely unnoticed, until recently when demolition and disposal activities shifted into high gear under the DOE’s Decontamination and Decommissioning contract, managed by Fluor-BWXT Portsmouth (FBP).

In June of this year, the most significant accomplishment occurred in the D&D era at Portsmouth when the first of the three huge uranium enrichment process buildings, X-326, was safely demolished. The result is 135,000 cubic yards of debris that will be disposed of at the newly constructed On-Site Waste Disposal Facility (OSWDF).

“Our goal is to place all demolition debris from the X-326 into our On-Site Waste Disposal Facility by the end of the year,” said Portsmouth Site Project Director Greg Wilkett. “This requires significant project coordination across multiple disciplines and support organizations.”

The massive X-326 gaseous diffusion process building (pictured below) was one of three similar large structures...
Right: Prior to demolition, thousands of process components were removed from the X-326 building for shipment and disposal off-site. Photos: Fluor-BWXT Portsmouth

Preventing for Demolition

Demolition of the half-mile-long X-326 building took less than 13 months, but the process of preparing the building to be torn down took nearly a decade. From 2011 to 2020, the DOE and FBP conducted a lengthy and thorough deactivation effort to identify, characterize, and remove the majority of radiological and chemical hazards.

Deactivation included more than 1 million measurements on the process piping and components to determine if the material would exceed the waste acceptance criteria (WAC) for the OSWDF. If located, the contaminated items were carefully removed and staged for further evaluation or decontamination. Deactivation also included the removal of more than 7,000 process components, which were safely shipped off-site for disposal. What remained in the building was determined to be safe for demolition and disposal into the OSWDF if it meets the regulator-approved WAC.

Finally, all utilities were safely removed from the X-326 building including electrical power, water, sewer, and alarms and the building was declared ready for demolition in late 2020.

The demolition project used lessons learned from similar projects in the DOE complex—specifically the successful demolition of the K-25 gaseous diffusion plant in Oak Ridge, Tenn. That project included five uranium enrichment process buildings similar to the X-326 building at Portsmouth.
Protecting Workers, Public, and Environment

During demolition and disposal, a prominent concern is the potential spread of airborne contamination. This is controlled through a number of methods, including the following:

- Adhesive fixative was applied to the exterior and interior of the X-326 building prior to and during demolition. This substance “locks down” potential loose contamination that could be disturbed during the demolition.
- Water misters were used to suppress dust during demolition and disposal, a standard practice in industrial settings.
- Fixative was also applied to the piles of demolition debris on the ground.
- Demolition work was not conducted if wind speed reached a sustained velocity of 15 miles per hour.

To ensure that contamination controls were working, a comprehensive network of air monitors and alarms were put in place to detect if levels of airborne radiological gases or particulates exceeded the safety levels of the Ohio Environmental Protection Agency and Ohio Department of Health. Real-time air monitors collect data and have alarms to provide a warning if elevated radiation levels are detected. Other monitors collect air-filter samples on a daily or weekly basis for laboratory analyses to detect specific particulate contamination in the air.

Monitors were located in various directions and distances from the X-326 building demolition site to provide sufficient coverage under a wide range of wind conditions. Monitoring data was discussed with the public through regular public meetings and was shared on websites and the Annual Site Environmental Report. Data collected to date have shown that dust control measures have been effective, and any detections have been far below regulatory limits.

Through a balanced approach, the highly contaminated waste from the X-326 building demolition has been
removed and is in the next stage of being shipped off-site for disposal. The remaining waste and demolition debris is placed into the 100-acre OSWDF, which began accepting waste in 2021.

The OSWDF is an engineered disposal site with a multi-layer line and cap system designed to consolidate demolition debris and rubble into one centralized confined space that protects public health and the environment. It is constructed to meet strict state and federal environmental laws and has been proven to be safe based on similar successful operations and closed on-site disposal facilities at other DOE sites in the United States.

Located in the northeast portion of the 3,700-acre Portsmouth Site, the OSWDF is accessed by a dedicated haul road that runs directly from the X-326 building demolition site. Only trucks hauling waste to the OSWDF are permitted on the haul road. Site and public traffic are prohibited.

The entire OSWDF design includes 12 individual cells. The first three cells have been constructed and are currently accepting debris from the X-326 building, as well as engineered fill to meet the waste compaction requirements. Additional cells will be constructed as more demolition debris is generated in the future.

Continued
Cross-Functional Coordination

Achieving the goal of placing all X-326 building debris by the end of the calendar year requires more of everything—workers, equipment, trucks, waste capacity, and compaction soil. FBP’s director of disposal integration, Frank Miller, is leading the effort to ensure that everything is done compliantly and, above all else, safely.

“This project has always been referred to as a three-legged stool with D&D, soil excavation, and On-Site Waste Disposal Facility operations,” said Miller. “With any stable piece of furniture, there are bolts, pins, and glue that keep it all together. That is where ESH&Q [Environment, Safety, Health, and Quality], WAO [Waste Acceptance Organization], Engineering, Construction, Waste Management, and others all play a role.”
Nuclear Safety, and nearly every other organization plays a key role."

With debris disposal comes a need for a lot of engineered fill soil, more than twice as much soil as waste is needed. The OSWDF requires a 2.4–1 ratio of fill material to waste. To achieve this, soils are excavated from legacy groundwater plumes and old landfills on site. “With this approach, we avoid buying clean fill for the OSWDF, expedite the environmental cleanup of the site, and provide more land for future reuse,” said Project Director Wilkett. “It’s a win, win, win for the site.”

Since the 1990s, plume contaminants, mainly industrial solvent trichloroethylene (TCE) used during plant operations, have been extracted from the ground with traditional groundwater pump-and-treat operations. It is a slow process, however, that can be costly over time. By digging up the remaining contaminant sources and contaminated soils, the cleanup of the groundwater plumes is significantly accelerated.

Removal and consolidation of legacy environmental concerns, including groundwater plumes and old landfills, also make more land available for future community reuse and reindustrialization—a benefit for stakeholders who want to build a sustainable economic future at the site post-cleanup. The DOE has already begun the process of transferring clean parcels of land to the designated community reuse organization, the Southern Ohio Diversification Initiative (SODI). The first parcel, 80 acres, was transferred to SODI in 2018, and another 220 acres are scheduled to be transferred this year.

Continued
The work is performed with regulatory approval under a Natural Resources Damage Act settlement and Director's Final Finding and Order authorizing excavation of five existing groundwater plumes as well as five closed waste units (i.e., landfills). Each individual waste unit or plume then needs an approved excavation work plan before excavation can be initiated, ensuring that excavation can be done safely, protectively, and compliant with all applicable or relevant and appropriate requirements. The excavated materials are then used as engineered fill in the OSWDF according to the approved WAC.

Since the first load of soil and waste was put into the cell in May 2021, more than 22,000 cubic yards of debris and 44,000 cubic yards of soil have been placed into the OSWDF. This summer, crews shifted into high gear to meet the year-end timeline. At the peak of hauling, crews were expected to move about 1,500 cubic yards of waste and 3,600 cubic yards of soil a week. That takes a lot of trucks and means sticking to a strict schedule.

“We have increased our fleet to 60 triaxle trucks in the rotation with 20 dedicated to debris and 40 to soil,” said Miller. “At peak, we will be running around 400 truckloads a day: 130 will be filled with debris and 260 with soil.”

As part of their independent oversight of the demolition and waste placement operations, the Ohio EPA and the Ohio Department of Health set up 23 air monitoring stations on and around the Portsmouth Site to provide verification of DOE air monitoring data.
Adding More Staff

A project of this magnitude requires a significant workforce. So far this year, 250 new workers have been hired for a wide range of jobs. One of those is the Waste Acceptance Organization (WAO).

All demolition debris and waste must meet the strict requirements of Ohio and U.S. environmental laws before it can be placed into the OSWDF. This set of requirements, the WAC, is a strict and systematic approach for choosing the right types of waste and the right disposal methods to protect the public, environment, and wildlife.

“WAO is a compliance organization within the environmental protection organization tasked with independent oversight of compliance with the waste acceptance criteria implementation plan for wastes dispositioned to the OSWDF,” said Bridget Eslinger, waste acceptance manager. “WAO provides oversight during the waste generation and handling process until the waste is disposed of in the OSWDF by the project team.”

While a project of this size would seem to be the DOE’s main focus at Portsmouth, it is just one of many projects taking place at the site. As crews work through the X-326 building demolition project, work is already underway preparing the next building D&D project, the X-333 building, along with the construction of three more cells at the OSWDF.

“The single reason this project will be successful this year is integration,” said Miller. “The caliber of people involved from all organizations across FBP provides me the confidence that the integration will prove true.”

This article appears courtesy of Flour-BWXT Portsmouth.
Oak Ridge’s Changing Skyline

The decommissioning of ORNL’s aging research reactors is clearing the stage for future missions at the site.

By Carol Hendrycks

An aerial photograph of Oak Ridge National Laboratory’s “Reactor Hill,” with, from left to right, reactor buildings 3042, 3005, and 3010. The DOE and its contractors are removing these excess contaminated facilities to eliminate risks and clear land for future research missions. (Photos: UCOR)
To prepare the 3010 Bulk Shielding Reactor building for demolition, the 27-foot-deep reactor pool inside the building was filled with a concrete mixture.

The Bulk Shielding Reactor was constructed in 1950 to lead groundbreaking aircraft radiation protection research as part of the federal government’s Aircraft Nuclear Propulsion Program. The core structure was suspended from a movable bridge that spanned a 20-foot by 40-foot pool. A second bridge was available as a working platform and to hold special equipment.
The Department of Energy and its environmental cleanup contractor United Cleanup Oak Ridge (UCOR) are poised to meet critical milestones as they continue to move to the next generation of cleanup at Oak Ridge National Laboratory in Tennessee. On ORNL’s main campus, crews on “Reactor Hill”—so named because of the four remaining reactor facilities on that hillside—and at the Experimental Gas-Cooled Reactor (EGCR) just east of the campus continue rigorous schedules as they enter a new phase of progress in the cleanup program.

The ORNL campus skyline will change dramatically this year with demolition of the 3010 Bulk Shielding Reactor complex and the 3005 Low Intensity Test Reactor facility. Safely removing these and other highly contaminated facilities will make way for expanding future missions at one of the nation’s leading research and development sites.

“We have been working toward the demolition plan of 3010 and 3005 since 2018,” said Kent Ridenour, UCOR’s ORNL reactors project manager. “To finally see the end in sight is impressive knowing the accomplishments and the challenges we faced over the last four years, but the craft crews and support groups worked together to make it possible.”

The 3010 Bulk Shielding Reactor complex was built in the 1950s for radiation shielding studies as part of the Aircraft Nuclear Propulsion Program. Crews have just completed filling the 27-foot-deep reactor pool with a concrete mixture, permanently entombing the pool as workers prepare to demolish the building.

Other final deactivation activities include asbestos removal on the degasification tank and pipes on the outside perimeter of the complex. Once this work is completed, crews will begin demo site preparations and mobilizing equipment. Demolition is planned for early fall.

Next door to Building 3010 stands the ORNL 3005 Low Intensity Test Reactor (LITR). It started operation as a 500-kW training reactor in 1951 and reached its final 3,000-kW level as a test reactor in 1953. It was shut down in 1968. Crews have completed characterization of the facility using a gamma camera lowered into the reactor to measure the levels of radiation. Other pre-demolition activities are underway to prepare this structure for teardown later in the fall.

Nearby is the Oak Ridge Research Reactor, known as Building 3042. Constructed in 1955, this isotope production and irradiation facility operated from 1958 through 1987 and was defueled in 1989. Upon discovering a slow seep from the reactor pool, workers removed highly irradiated components...
along with the pool water and sprayed the pool walls with a nonhazardous fixative to prevent contamination migration.

Today, crews are back at the 3042 Building site working on the next phase of deactivation—refilling the pool with approximately 116,000 gallons of demineralized water and inspecting the facility’s existing crane, which will be used to remove the concrete shield caps and any remaining items in the reactor pool. Hazardous waste, including pipes and fixtures along the walls, will be removed from inside and outside the structure. The demolition date will be determined once these activities have been finalized.

East of the main ORNL central campus is the EGCR. Construction of this facility began in the late 1950s but was halted in 1966 when it was approximately 95 percent complete. The reactor never went operational. The facility is an eight-level, 107,922 square-foot-building constructed of steel and concrete, 114 feet in diameter and 216 feet high with approximately 50 feet below grade.

In the past six months, crews prepped the building for installation of a lift system, the Transport Platform Car System (TPCS). The TPCS will be used to mobilize both personnel and equipment into and out of the facility as well as aid in deactivation activities, which include universal/hazardous waste removal and asbestos abatement.

This system was previously used to support deactivation activities at the Biology Complex at Oak Ridge’s Y-12 National Security Complex. Reusing the equipment avoided the cost of purchasing a new system. This project involved erecting and mounting a 110-foot mast with a large platform cart to the outside of the structure and required coordinated efforts among specialty trades, including iron workers, welders, laborers, carpenters, and the help of an 80-ton crane.

The TPCS will be put in service once crews begin deactivation on the upper levels of the EGCR. Remaining work consists of characterization, universal/hazardous waste removal, piping and equipment removal, asbestos abatement, and filling underground tunnels with a concrete mixture to seal off experimental cells. Much additional work will be required before EGCR can be demolished.

Each reactor poses unique challenges and pushes the workforce to be even more innovative in identifying technology solutions, broadening perspectives, and strengthening problem solving. Cleanup activities are focused on eliminating some of the most contaminated structures in the world while modernizing and adapting others to make way for new missions and support a new era of scientific discovery.

Carol Hendrycks is a communications strategist with UCOR.
The Transport Platform Car System is erected at Oak Ridge’s eight-story Experimental Gas-Cooled Reactor building. The system will be used to move crews and equipment into and out of the facility during deactivation and demolition. The reactor, which was never completed, was intended to be a prototype for the Tennessee Valley Authority’s nuclear power generation. The facility later housed ORNL’s fuel recycle division.

The TPCS tower units are secured together and set for final inspections.
ENVIRONMENTAL

GAO Report Shows Mission
By Sarah Templeton

This spring, the U.S. Government Accountability Office (GAO) released an insightful report reviewing and summarizing the status and performance of the largest projects and operations within the Department of Energy’s Office of Environmental Management (EM), which is responsible for the cleanup of hazardous and radioactive waste at sites and facilities that have been contaminated from decades of nuclear weapons production and nuclear energy research. The Energy Communities Alliance, a membership organization of local governments adjacent to or impacted by DOE activities, reviewed the report, “Environmental Cleanup: Status of Major DOE Projects and Operations,” and made the following remarks.

■ EM estimates that the total life-cycle cost of the complex’s 15 active sites is over $525 billion.
■ In total, EM (based on its own estimates) has over $392 billion in cleanup of the nation’s former weapons complex remaining.
■ The completion schedule for all EM work is projected to last until 2082, assuming that funding is available and that unforeseen schedule overruns do not occur (for example, there is currently no place to ship high-level radioactive waste in the EM complex).
■ Multiple factors—including the lack of a permanent waste disposition pathway, potential additional analysis of known and unknown waste sites, change in cleanup decisions, sufficient appropriations levels, adequate workforce, change in administration policy on priorities, and risks—will likely contribute to cost and schedule increases beyond the reported estimates.

The GAO report covers only known cleanup issues and excludes sites still under characterization by EM. The data comes from the DOE’s Project Assessment and Reporting System and the department’s Integrated Planning, Accounting, and Budgeting System, which the GAO reviewed. Relying on DOE estimates suggests that there are likely more sites in need of cleanup than are included in the report. EM has not undertaken a risk assessment to move waste at all sites and has assumed “cap-in-place” will be the solution, even though host communities, stakeholders, and some states across the complex have been asking for different cleanup solutions or at least the cost of options.
Implications for Communities and Contractors

The report provides significant data and insights for each EM site, highlighting the work that has been completed in the complex and reminding us of the cleanup challenges ahead in the near- and long-term. It is important to remember that these are estimates that are rarely correct, and the scope of the hazardous and nuclear cleanup program is likely much larger than the numbers indicate.

Adequate funding, both now and in the future, is equally critical for cleanup to be completed in a timely and effective manner. Collaboration between community leaders, the workforce, state, local and tribal governments, stakeholders, and Congressional champions is needed to tell the story and highlight the impact funding (or lack thereof) has on whether a cleanup project will be completed within estimated time frames and budgets.

The report also points to the need for a permanent repository or interim storage facility for defense high-level waste from EM sites. Cleanup at many of the largest sites cannot be completed without a disposition pathway, indicating that the total cleanup figure and time frames in the report will likely be even higher than estimated.

The lack of disposition pathway also suggests that sites may continue to serve as de facto waste storage sites for decades beyond what was originally envisioned. Communities want to support and be a part of making nuclear a successful element of the national “all of the above” energy strategy. Failure to address legacy defense waste, however, may create social equity and environmental justice issues in existing host communities and could perhaps undermine the confidence that a future host community can trust the DOE to prioritize the sites that host federal nuclear waste missions over time.

A track toward permanent storage would help to solve the critical question of what to do with our nation’s nuclear waste, work to ensure cleanup can be completed at sites within cost and schedule estimates, and foster community trust and support in the cleanup mission. This community support is crucial to successfully meeting cleanup goals in a way that will permit the sites to

<table>
<thead>
<tr>
<th>Site Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanford Site&lt;sup&gt;a&lt;/sup&gt; (includes 2 separate sites)</td>
</tr>
<tr>
<td>Schedule: 2078-2082</td>
</tr>
<tr>
<td>Cost: $312,250 million</td>
</tr>
<tr>
<td>Environmental liability: $265,165 million</td>
</tr>
<tr>
<td>Idaho National Laboratory</td>
</tr>
<tr>
<td>Schedule: 2049-2060</td>
</tr>
<tr>
<td>Cost: $21,563 million</td>
</tr>
<tr>
<td>Environmental liability: $10,365 million</td>
</tr>
<tr>
<td>Moab, Utah</td>
</tr>
<tr>
<td>Schedule: 2029-2033</td>
</tr>
<tr>
<td>Cost: $1,074 million</td>
</tr>
<tr>
<td>Environmental liability: $271 million</td>
</tr>
<tr>
<td>Lawrence Livermore National Laboratory</td>
</tr>
<tr>
<td>Schedule: 2031</td>
</tr>
<tr>
<td>Cost: $701 million</td>
</tr>
<tr>
<td>Environmental liability: $146 million</td>
</tr>
<tr>
<td>Energy Technology Engineering Center</td>
</tr>
<tr>
<td>Schedule: 2025</td>
</tr>
<tr>
<td>Cost: $635 million</td>
</tr>
<tr>
<td>Environmental liability: $259 million</td>
</tr>
<tr>
<td>Nevada National Security Site</td>
</tr>
<tr>
<td>Schedule: 2030</td>
</tr>
<tr>
<td>Cost: $2,405 million</td>
</tr>
<tr>
<td>Environmental liability: $563 million</td>
</tr>
<tr>
<td>Los Alamos National Laboratory</td>
</tr>
<tr>
<td>Schedule: 2036</td>
</tr>
<tr>
<td>Cost: $9,487 million</td>
</tr>
<tr>
<td>Environmental liability: $5,319 million</td>
</tr>
<tr>
<td>Sandia National Laboratories</td>
</tr>
<tr>
<td>Schedule: 2031</td>
</tr>
<tr>
<td>Cost: $298 million</td>
</tr>
<tr>
<td>Environmental liability: $27 million</td>
</tr>
</tbody>
</table>

Sources: GAO analysis of Department of Energy information; Map Resources (map). | GAO-22-104662
Capital Assets and Operations Activities

EM divides its cleanup work into capital asset projects, which have a defined start and end point and can include the construction of new facilities for treating and disposing of waste, and operations activities, which include recurring facility or environmental operations, as well as activities that are project-like, with defined start and end dates.

As of December 2020, EM was actively managing 23 capital asset projects. Of these 23 projects, 15 had an estimated total project cost of at least $100 million and had reached at least the critical decision 1 milestone (CD-1). CD-1 represents the point at which there is an approved alternative selection and cost range for a project.

Project cost estimates quoted in the report reflect baseline costs for the capital asset projects plus an accounting for risk, both for contractor and EM controlled risks. All other project costs include costs for performing the work, EM administrative costs, and contractor award fee.

Most of these 15 projects involve ongoing cleanup work in one of three areas: treatment and disposal of radioactive liquid waste, demolition of excess facilities, or waste disposal. Individual project costs ranged from $127 million to $16.8 billion each. The total combined project cost estimate for these 15 projects ranges from $20.11 billion to $20.36 billion, depending on the final cost estimates for two projects that had not started work at the Oak Ridge Reservation (ORR) in Tennessee.

The report also includes information on 11 EM sites that have an ongoing operations activity with a life-cycle cost of at least $1 billion each. The life-cycle costs for these 11 operations activities range from around $1 billion (Moab Site) to $180.5 billion (Hanford Site).

Based on the review of EM’s 15 largest capital asset projects and 11 selected operations activities, the GAO made the following observations:

Observation 1: The GAO identified that nine of EM’s largest capital asset projects were completed or are expected to be completed within their initial baseline cost and schedule estimates.

Continued
Of the 15 EM capital asset projects reviewed, 13 had progressed far enough to have established cost and schedule baselines, and nine are expected to be completed within those baselines. Four projects are expected to exceed estimates.

The GAO found that, of the four projects that are not expected to be completed within their baselines, the Waste Treatment and Immobilization Plant (WTP) project and the Plutonium Finishing Plant project, both at Hanford, have completed the baseline change proposal process, and EM has approved updated cost and schedule estimates for these two projects.

EM officials stated that two projects at the Waste Isolation Pilot Plant (WIPP)—the Safety Significant Confinement Ventilation System (SSCVS) and the Utility Shaft—will not be completed within their baselines, and baseline change proposals are under review for both projects.

**Observation 2:** The GAO identified that EM did not have sufficient staffing capacity to properly manage three capital asset projects, two of which are expected to overrun their cost and schedule baselines.

Three capital asset projects—two at WIPP and one at ORR—experienced issues during either their design or construction phases that were, in part, due to the capacity of federal and contractor staff, according to EM officials.

The GAO has previously reported that the Carlsbad Field Office, which oversees WIPP, had experienced staffing shortages for multiple years, and an EM document cited this problem as a factor contributing to problems with the SSCVS project. The flaws in the Utility Shaft project were also attributed to a limited number of staff with sufficient experience at the Carlsbad Field Office.

The Outfall 200 Mercury Treatment Facility project at ORR encountered bedrock and soils problems during...
construction of the foundations of the project’s two main buildings. EM officials said that the project staff did not have the necessary technical expertise to address these problems, so outside contractors were brought in with the necessary technical experience.

**Observation 3:** The GAO identified that EM has not completed updates to life-cycle estimates for operations activities, and prior data have limitations, which impacts EM’s ability to accurately measure operations activities’ performance.

A recent EM protocol requires sites to update their life-cycle estimates for operations activities annually as part of a broader process for maintaining the overall life-cycle cost and schedule estimates for completing cleanup at each site. Officials at 10 of the 11 sites reviewed told the GAO that they were in the process of updating their cost and schedule estimates for their operations activities.

The EM sites included in the report had not yet completed new estimates using the process established in the new protocol. Several of the estimates that the GAO collected had not been updated in several years, though there have been significant changes to the conditions at certain sites. For example, the estimate for the operations activity at WIPP has not been updated since 2013, and EM officials stated that the estimate does not take into account how operations at the site have changed following a radiological release in 2014.

In 2019, the GAO reported that the tools EM uses to measure contractors’ performance on operations activities do not provide a clear picture of performance for EM leadership, Congress, and other stakeholders. EM’s ability to have the information EM needs to assess the performance of cleanup work managed as operations activities will depend, in part, on whether updates to the cost and schedule estimates for all operations activities are completed in accordance with EM’s protocol.

**Observation 4:** The GAO identified that EM officials at multiple sites identified examples of ways in which current and future EM cleanup funding could affect cleanup costs.

The report gives examples of scenarios in which funding increases or shortfalls could have significant impacts on the costs for completing cleanup work at the Hanford Site, the Portsmouth Site, ORR, and Idaho National Laboratory (INL).  

continued
At the Hanford Site, EM officials stated that annual appropriations are not sufficient to meet certain legal requirements for high-level waste treatment. Various analyses indicate that achieving certain milestones for the HLW and pretreatment facilities are improbable given the imbalance of reasonably anticipated Congressional appropriations and the current anticipated funding requirements to complete the WTP project. EM officials also said that the Hanford Lifecycle Scope, Schedule, and Cost Report forecasts a significant increase in life-cycle cost and schedule for completing the cleanup of the entire Hanford Site.

EM officials at the Portsmouth Site stated that funding to support the timely transition of experienced contractors from one decontamination or demolition project to the next is not always available when work on one project is completed. As a result, some of the experienced workforce has to be demobilized and is potentially lost to other work. In this case, EM will likely incur additional costs to transition a contractor to other projects once funds become available.

EM officials at both ORR and INL stated that the life-cycle cost and schedule estimates for site operations activities are directly dependent on the schedule for completing the cleanup activities they are supporting. For example, if additional funding were prioritized for completing deactivation and decommissioning of excess facilities at ORR, the cost for that work would likely decrease, as the schedule could be accelerated. This would also likely reduce the life-cycle cost for the operations activity with the highest estimated cost because EM would likely shorten the period it had to maintain surveillance and maintenance activities, according to EM officials.

**Observation 5:** The GAO identified that the extent of cost increases for EM capital asset projects and operations activities due to COVID-19 are not fully known.

According to EM officials at multiple sites, contractors have tracked the costs incurred from implementing safety measures to address COVID-19, and EM had reimbursed contractors for some of these costs. EM officials interviewed at several sites told the GAO that EM incurred other costs as a result of COVID-19, such as costs from new sanitization programs, installing new workspaces for social distancing, and higher commodity prices, and that the full extent of these other costs is not yet known. Additionally, a COVID-19 reemergence leading to a return to minimum on-site work is possible.

**Life-Cycle Costs**

Life-cycle costs as described in the report include the scope, cost, and schedule profiles for the work activities required to complete EM’s mission at specific sites, including costs that have already been incurred. Life-cycle costs also include a risk management plan, which defines the scope and process for the identification, assessment, and management of risks to a program, and a risk register, which includes information on the type of risks or opportunities, their probability, and the potential magnitude of the consequences if they were to be realized.

The total estimated life-cycle cost of the 15 currently active sites is over $525 billion. The greatest contributor to this total is the Hanford Site, which represents $312 billion and where cleanup is scheduled to be completed between 2078 and 2082.

The GAO found that most projects across the cleanup complex were expected to be completed within initial cost and schedule estimates. However, officials at several projects that experienced cost overruns and schedule delays cited staffing shortages as a contributing factor. In addition, the GAO found that the life-cycle estimates for cleanup operations were frequently out of date, and the DOE was in the process of implementing a new policy to require annual updated estimates at the time the report was created.

The report also does not appear to consider the lack of disposition pathway for defense waste in its estimates of life-cycle costs. A repository is likely decades away from being positioned to start taking waste, and in the interim, there is no place to store high-level waste for several sites. The report fails to account for the cost of on-site storage of waste in a manner not meant for long periods of time. It is also unclear if the report includes cost of transportation to a final disposal site, among other important considerations.
Environmental Liability

The report also provides estimates of environmental liability at each site, which is EM’s evaluation of the probable costs for the future cleanup of legacy defense waste. The current total of environmental liabilities across the complex’s 15 active sites is $392 billion. The environmental liability for each site includes only the remaining costs for future work and largely reflects approximations of future costs to clean up legacy radioactive tank waste and contaminated facilities and soil.

Broadly, the DOE’s environmental liability is based on:
- Estimate updates.
- Schedule slippage.
- Changes in assumptions.
- Plan changes.
- Funding shortfalls.
- New scope.
- Nonmonetary loss contingencies, among other factors.

In recent years, EM’s environmental liability has increased. A 2019 GAO report ("Department of Energy: Program-Wide Strategy and Better Reporting Needed to Address Growing Environmental Cleanup Liability") addressed key factors in this growth, which include:
- Contract and project management problems.
- Regulator changes.
- Accidents, work stoppages, or disruptions.
- Technical challenges.
- Scope, cost, or schedule changes.
- Repository uncertainty.

As previously noted, however, the figures given for EM’s environmental liability do not appear to account for the lack of a permanent disposition pathway and the possible increase in costs resulting from continued on-site waste storage, transportation to a repository, etc. The report also notes future risks that could impact cost and schedule of operations activities at sites but does not indicate a potential dollar figure increase or the extent to which these risks could delay projects if they are realized.

Sarah Templeton is program manager for the Energy Communities Alliance.
Based on a review of U.S. Atomic Energy Commission (AEC) records and available data from numerous agencies, there are an estimated 4,225 mines across the country that provided uranium ore to the U.S. government for defense-related purposes between 1947 and 1970. To aid in the cleanup of these legacy uranium mines and establish a record of their locations and current conditions, the Defense-Related Uranium Mines (DRUM) program was established within the Department of Energy’s Office of Legacy Management (LM).

A partnership between the DOE, federal land management agencies, and state and tribal abandoned mine lands, the DRUM program is tasked with verifying and validating the condition of abandoned uranium mines in the United States and assessing their potential risk to the health and safety of the public and the environment.

According to the DOE, approximately 69 percent of the legacy uranium mines are in Colorado (1,539) and Utah (1,380), with another 23 percent located in Arizona (413), Wyoming (319), and New Mexico (247). Out of the 75.9 million tons of uranium ore produced for defense-related purposes, New Mexico mines produced over 35 million tons, followed by Colorado, Utah, and Wyoming, each with more than 11 million tons.
Initiated in 2017, DRUM Campaign 1 focused on approximately 2,500 legacy mines located on public land and administered by federal and state agencies. Field work on Campaign 2 began in fiscal year 2022 and assessed DRUM sites on tribal land. Campaign 3, which will address DRUM sites on private property, is scheduled to begin field work in FY 2024.

LM implements the program by conducting verification and validation (V&V) activities, which include:

- Exchanging program results and information with other federal, state, and tribal governments.
- Performing field inventories to document mining-related features at DRUM sites for safety risks.
- Conducting environmental sampling to evaluate health and environmental risks.
- Producing mine-specific reports that document conditions at DRUM sites.
- Working with partner agencies to leverage resources to address mines with physical safety hazards.

REPORT TO CONGRESS

The DOE obtained its authority for the DRUM program under Section 3151 of the National Defense Authorization Act for FY 2013, which mandated that the secretary of energy conduct a review of and prepare a report on abandoned uranium mines that provided uranium ore for defense-related activities. To develop the report, the DOE consulted with other federal agencies, affected states and tribes, and the public.

In August 2014, the DOE submitted the *Defense-Related Uranium Mines Report to Congress*, which found that records were frequently inaccurate regarding the locations and descriptions of mines at which uranium ore was extracted for defense-related atomic energy activities. Information about the status of these mines was likewise largely unknown or not well documented.

The report to Congress addressed the location of mines

Continued
on federal, state, tribal, and private land and the status of efforts to remediate or reclaim these mines; the extent to which mines pose a significant radiation hazard or other public health and safety threat and cause, or have caused, water contamination or other environmental degradation; a priority ranking for the reclamation and remediation of mines; and the potential cost and feasibility of reclamation and remediation in accordance with federal law.

While the report noted that different government agencies have made varying levels of progress on the reclamation and remediation of abandoned U.S. mines, the cleanup status of only 15 percent of defense-related uranium mines could be confirmed. The report also noted that all of the very large mines (over 500,000 tons of ore produced) have been or are in the process of being reclaimed or remediated.

In terms of risk to human health, the report concluded that for all receptor scenarios evaluated, radon inhalation was the largest contributor to radiological risk, followed by exposure to external gamma radiation. According to the DOE, reclamation that includes stabilizing and covering the waste pile helps mitigate radon and gamma emissions. Sealing mine adits (portals) and shafts can also provide significant reductions in potential radon exposure, the DOE said.

THE WORKING GROUP

After the 2014 report to Congress, LM continued its collaboration with other federal agencies and formed the Abandoned Uranium Mines Working Group (AUMWG), which is composed of representatives from the DOE, the Environmental Protection Agency, the Bureau of Land Management, the Department of the Interior, the Forest Service, the Department of Agriculture, and the U.S. Bureau of Indian Affairs. Through the AUMWG collaboration, the DOE, BLM, and USFS determined that many unknowns (e.g., status, location, and ownership) still exist for the approximately 2,500 mines on public land. As a result, the DOE entered agreements with various federal and state agencies to fill existing data and information gaps surrounding DRUM sites.

According to the DOE, the purpose of these agreements is threefold:
- Facilitate the DOE’s capability to conduct V&V evaluations of the mines on public land.
- Evaluate and document potential hazards to human health and safety posed by mining features at the mines visited.
- Facilitate safeguarding the public from the identified physical safety hazards at the mines visited.

This collaborative effort with partner agencies led LM to develop the Defense-Related Uranium Mines Verification and Validation Work Plan in 2021, which provides the objectives, direction, and methodologies for how LM and partner agencies will collect, store, and report information during V&V activities at mines on federal- and state-managed public land.
PRIMARY OBJECTIVES

As stated in LM’s 2021 V&V work plan, the primary objective of the DRUM program is to verify the location, production records, and status of reclamation or remediation, and validate current site conditions of legacy uranium mines. The data gathered will further be used to evaluate mines’ human health and environmental risks and physical hazards using a combination of weight-of-evidence and risk screening approaches that will help land management agencies recognize and prioritize mines for possible future actions.

To accomplish these objectives, the DOE is assessing various data sets and collecting new data to make determinations on a mine-specific basis and perform risk scoring assessments of these mines. Most of the data will be observational and descriptive in nature (e.g., the location, complexity, and general condition of mine features); however, some are newly acquired analytical data.

The objectives and data inputs for the observational and analytical data consist of the following:

1. Existing information garnered from AEC historical records, including mine location; historical production; partner agency records; status of permitted mines; and other resources (e.g., the U.S. Fish and Wildlife Service’s Information for Planning and Consultation System) pertaining to habitat for ecological resources that include sensitive species and game animals, area geology, watersheds, and the presence of surface water.

2. Observational data will be collected during inventory efforts by partner agencies or by LM’s contractor. Data will include, but not be limited to, the following: the mine location; physical hazard locations and photographs; evidence of human use or visitation of the mine; evaluation of the potential for human access to the mine; location of significant mine features, including the footprint and volume of waste rock piles; and evidence of the presence of sensitive flora or fauna species or their potential habitat.

3. Analytical data regarding metals and radiological activity are obtained through gamma radiation measurements, radiological screening, and soil and sediment shed sampling. Such data are compared with benchmarks established by the BLM and the DOE and will be used to screen for potential human health risks.

The DRUM program comprises five teams, with four individuals per team to handle each of these tasks: a field team lead, a geologist, an ecologist, and a safety specialist/radiological control technician. According to the DOE, these teams visit a variety of different mine sites across the country every year, many of which are in remote locations.

DRUM field team members say that one of the biggest challenges of the job is the logistics of accessing the remote sites. Not only do four team members need to access each mine site, but they each carry a fair amount of work-related gear. Although most sites can be accessed through the combined use of a four-wheel-drive truck, a utility terrain vehicle, and a short hike, others prove to be more challenging. Team members also try to minimize their impact on resources, wildlife, and native flora when visiting mine sites.

Continued
CURRENT MILESTONES

Earlier this year, LM announced that DRUM program teams completed a major milestone on March 28 by delivering 507 V&V mine visits during the field season running from April 1, 2021, to March 31, 2022. The V&V work was completed by LM support contractor RSI EnTech.

“This goal was a crucial step in reaching the program’s milestone of completing approximately 2,500 mines on public land by September 30, 2023,” said LM’s DRUM team technical lead William Burns. “Approximately 1,830 mines have been completed to date.”

Most of the 507 mines the DRUM teams visited are in Utah and Colorado. According to LM, DRUM teams efficiently coordinated and planned efforts with multiple land management agencies to reach this important milestone.

“Reaching this milestone while navigating harsh weather, personnel changes, and a global pandemic speaks volumes to the focus and dedication of the DRUM field teams,” Burns said.

DRUM was expected to continue additional field work on public lands and tribal lands in 2022. DRUM project managers are in contact with tribal abandoned mine lands programs to develop cooperative agreements, establish risk screening scenarios, and conduct environmental reviews.

“Mines on private lands will be visited by DRUM field teams starting in 2024,” Burns said. “These efforts come together into the DRUM safeguarding program where DRUM works with multiple stakeholders to continue to protect human health and the environment.”

In May of this year, representatives of the Navajo Nation Abandoned Mine Lands Reclamation Department (NNAMLRD) and members of the DRUM program led two days of tours of sites near Cortez in southwestern Colorado and mines in the Tse Tah and Red Mesa regions in northeastern Arizona. LM said the tour in the Navajo Nation gave agencies a chance to see how such mines have been successfully reclaimed and safeguarded.
According to LM, the NNAML RD team has used several different methods of safeguarding and reclaiming adits and waste rock. Most projects entail the use of explosives to collapse the adits, adding waste rock to the hole, then covering the site with soil cover. In many instances, waste rock from the site was used to provide top cover and to create retaining walls to manage surface water runoff. In most cases, the earthen structures, constructed to contain the mine waste rock, have been meticulously blended into the topography and are barely noticeable, even to the trained eye.

At one of the sites, the NNAML RD conducted an environmental monitoring project to evaluate water runoff above the cell and observed the hydrologic cycle in association with mine waste leachability, LM said.

“We wanted to know if there was enough surface moisture from rain and/or snow to leach contaminants from the mine waste or was the moisture evaporating before it reaches the mine waste,” said Melvin Yazzie of NNAML RD. “From our short time, we showed that in this arid region, the moisture does evaporate or transpire before leaching the mine waste.”

Edited by Tim Gregoire

**SOURCES**

The following categories are included in Section I of the Buyers Guide, “Products, Materials & Services Directory,” which begins on page 63. Categories are listed there in alphabetical order, and each category is identified with a code number—for example, "Absorbers, Nuclear Radiation," code number 00400; "Work Platforms," 96200. Section II, the “Directory of Suppliers,” begins on page 107 and provides the phone numbers and contacts of the companies listed in Section I. Extensive cross references are included here, but not in Section I.

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SSM Industries has over 40 years experience designing, qualifying, fabricating and installing complete HVAC ductwork systems and equipment in DOE facilities and Nuclear Power Plants around the world.

Let us work with you on all of your HVAC needs. From custom retrofits to new plant build, we are the HVAC solution that you have been looking for.

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

HVAC SYSTEM COMPONENTS
Tornado
Variable Frequency Drives
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

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AWS

For more information please contact:
Matt Gorman  mgorman@ssmi.biz
3401 Grand Avenue, Pittsburgh, PA  15225
412-901-1467 cell / 412-777-5101 office

(412) 777-5101 • ssmi.biz
This section contains an alphabetical listing of nuclear products, materials, and services, with the companies that supply these items. Exactly 171 categories are included (see “Index to Categories,” pp. 56–61). Extensive cross references are not included in this section, but can be found in the Index to Categories.

The supplier listings in each category are based on annual updates made by the individual companies to their online verification forms. Nearly 500 companies are represented throughout these pages. Those companies whose names are preceded by a diamond (♦) have an advertisement in the 2022 Radwaste Solutions Buyers Guide. Companies highlighted in blue have an advertisement within or near that category.

Anatomy of a Radwaste Solutions Buyers Guide listing

Category Number

Category name, with cross-references to related categories

Subcategories, with abbreviation

Supplier listings

Denotes that the supplier is an advertiser in this issue

Advertiser whose ad appears within or near the category.
03180 Alarm Status Reporting & Control Systems

Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID

Mirion Technologies, Inc., Atlanta, GA
Power System Sentinel Technologies, LLC, Warrior, AL

Radiation Safety & Control Services, Inc., Seabrook, NH

Rolls-Royce Civil Nuclear, Warrington, United Kingdom
Westinghouse Electric Co. LLC, Cranberry Township, PA

03200 Alarm Systems—also see Emergency Warning Systems; Security Systems

AI Anti-Intrusion
AS Audible Signal
C Criticality
F Fire
FR Flow Rate
LE Level
LI Limit
P Pressure
R Radiation
RT Reactivity Transient
RV Recorded Voice, Digital (Multiple Messages)
V Visual Signal

Acromag Inc., Wixom, MI (LE, LI, P)

Alison Control Inc., Fairfield, NJ (F)

CAEN Sys, Viareggio, LU, Italy (R)

FCI-Fluid Components International LLC, San Marcos, CA (FR, LE)

Framatome Inc., (North American Headquarters), Lynchburg, VA (F, E, R, RT)

General Atomics Electromagnetic Systems, San Diego, CA (R)

HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrollton, TX (FR, LE, LI, P, R, RT)

Hoskin Scientific, Oakville, Ontario, Canada (FR, LE, LI, P)

Intek, Inc., Westerville, OH (FR)

ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (C)

KROHNF, Inc., Beverly, MA (FR, LE, P)

LabLogic Systems, Inc., Tampa, FL (R)

Magnetrol International, Aurora, IL (R)

MarShield Radiation Shielding, (Div. of Mars MetalCo.), Burlington, Ontario, Canada (R)

Mirion Technologies, Inc., Atlanta, GA (R)

National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (FR, LE, P, R, RT)

Nuclear Consultants.com, Ann Arbor, MI (C)

ORTEC, Oak Ridge, TN (R)

Overhoff Technology Corp., (A Div. of US Nuclear Corp.), Milford, OH (R)

Pajarijo Scientific Corp. (PSC), (Pajarijo Scientific Security Corp.) (PSSC), Santa Fe, NM (C, R)

Paschal Solutions, Inc., Knoxville, KY (C)

Pylon Electronics Inc., (Instrumentation Dept.), Ottawa, Ontario, Canada (R)

Rolls-Royce Civil Nuclear, Warrington, United Kingdom (AI, AS, C, F, FR, LE, LI, P, R, RT, RV, V)

Rosemount Nuclear Instruments., Inc., Chanhassen, MN (FR, LE, P)

Technology for Energy Corp., Knoxville, TN (AS, FR, V)

Timesoft, Long Beach, CA (AS)

US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (R)

Westinghouse Electric Co. LLC, Cranberry Township, PA (RT)

Yologawa Corporation of America, Newnan, GA (FR, LE, LI, P)

03800 Analysis

C Chemical
DE Design Basis
DD Due Diligence
EL Elemental
EQ Environmental
EQ Equipment Qualification
FE Failure, Electrical/Electronic
FM Failure, Metallurgical
FI Finite Element
FP Fuel Cycle & Fuel Performance
G Geotechnical
GM Groundwater Modeling
HE Helium
H Hydrological
LA Laser-Based
LP Loose Parts
L Lubrication
M Materials
RS Risk
SE Seismic
SH Shielding
SI Site Characterization
SI Siting
ST Stress
SS Sump/Strainer Blockage (Reg. Guide 1.82)
T Thermal
V Vibration
W Waste

Advanced Consulting Group, Inc., Chicago, IL (ST)

AMEASOL—American Measurement Solutions LLC, Santa Fe, NM (EL, M, SC, W)

Analysis and Measurement Services Corp. (AMS), (Including CHAR Services), Knoxville, TN (EQ, FE, SC)

Anamet, (a Div. of Aercon Inspection, Inc.), Hayward, CA (C, FM, M)

F.N. Anderson & Assoc., Forest, VA (EL, E, EQ, FI, FF, SH, ST)

Anvil International, LLC, North Kingston, RI

Applied Analysis Corp., Reading, PA (DE, EQ, SH, SI, T)

Applied Science Professionals, LLC, (ASP-LLC), Salt Lake City, UT (SC)

Attention IT, Inc., Knoxville, TN (E)

Attenuation Environmental Co., Seattle, WA (E)

Beucadacuo Resources, Richland, WA (E, RS, SH)


Boston Government Services, LLC (BGS), Oak Ridge, TN (DE, EQ, EQ, FI, FF, RS, ST, T)


Cabrera Services Inc., East Hartford, CT (EL, H, M, RS, SC)

CAEN Sys, Viareggio, LU, Italy (E, FF, W)

Container Technologies Industries LLC, Hellenwood, TN (M, RS, ST)

CS-2 Inc., Grand Island, NY (E, RS, SC, T, W)

CTR Technical Services, Inc., Manitous Springs, CO (RS, SH)

Curie Environmental Services, Albuquerque, NM (W)

Curtiss-Wright Nuclear Division, Enertech, Brea, CA (DE, L, RS, SE)

Curtiss-Wright Nuclear Division, NETCO, Danbury, CT (EL, T)

Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (DE, EQ, FF, SE, SH, ST, T, V)

Curtis-Wright-Nuclear Division, Scientech, Idaho Falls, ID (C, DD, EQ, FF, FM, FF, M, RS, SE, SH, SC, ST, T, V)

DGS Systems, Inc., Simsbury, CT (FP)

Decidua Research & Consulting, Badajoz, Barcelona, Spain (E, RS, SI)

The Delphi Groupe, Inc., Austin, TX (E, RS)

Deytec, Inc., Ashburn, VA (RS)

Dominion Engineering, Inc., Reston, VA (C, FF, M, SE, ST, W)

Duframe Nuclear Shielding Inc., Winsted, CT (SH, W)

Elimeter Inc., Warren, MI (E)

Electric Motor and Contracting Company Inc., Chesapeake, VA (DD, FE, V)

Emercon Services, Inc., (Talisman Div.), Kennesaw, GA (E, RS, SI, W)

Energy Resources International Inc., Washington, DC (FP, W)


Engineering Planning and Management, Framingham, MA (DE, EQ, RS)

ETAP-Operation Technology Inc., Irvine, CA (DE)

EXCEL Services Corporation, Rockville, MD (DE, EQ, EQ, FF, FP, RS, SH, SI, T)

Exelon PowerLabs, Coatesville, PA (C, EL, E, EQ, FE, FM, M)

Fortum Power & Heat Oy, Nuclear Services, Espoo, Finland, Finland (E, FF, M, RS, SE, SH, ST, T, T, V)


FuelTank Maintenance Co., LLC, Cookeville, TN (FP)

The GEL Group, Inc., (GEL Engineering, LLC), (GEL Laboratories, LLC), (Cape Fear Analytical, Inc.), Charleston, SC (E)

The GEL Group, Inc., (General Engineering Laboratories, LLC), Charleston, SC (E, SC)

GEL Solutions LLC, (A Member of The GEL Group, Inc.), Charleston, SC (E)

General Atomics Electromagnetic Systems, San Diego, CA (EQ)

Gen IV Nuclear Energy Systems Services, Rockville, MD (DE, FF, RS)

GoldSim Technology Group, Seattle, WA (RS)

GSE DP, (DP Engineering), Fort Worth, TX (DE, DD, E, EQ, FF, EQ, FM, RS, SE, SH, SC, SI, ST, T, V, W)

HF Controls Corp., (Sub. of Deason Heavy Industries & Construction Co., Ltd.), Carrollton, TX (EQ, SE)

Holtec International, Camden, NJ (EQ, SE, SH, ST, T, V)

Hoskin Scientific, Oakville, Ontario, Canada (E, G, ST, T)

Idom Consulting, Engineering, Architecture S.A.U., Bilbao, Spain (DE, DD, FI, G, M, SE, SH, SC, ST, T)

ILD, Inc., Baton Rouge, LA (SE, T, V)

Imperia Engineering Partners LLC, Borden town, NJ (DE, DD, E, EQ, FF, FE, FM, FI, M, RS, SE, SI, ST, SS, T, V)

INGEPRO Conseil et Ingenierie, (a company of INGEROP Group), Cebazat, France (FI, GC, SC)

INTERDEVELOPMENT, Inc., Washington, DC (RS)


Kinetrecs Inc., Toronto, Ontario, Canada (C, DE, DD, EL, EQ, FF, FE, FM, FF, HP, L, M, RS, SE, SH, ST, T, V, W)

Kinetics Inc., Pasadena, CA (SE)
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<td>NuclearConsultants.com, Ann Arbor, MI (FP, SH)</td>
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<td>NuSource LLC, Alexandria, VA (DE, FI, SE, T)</td>
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<td>NVS/Dade Moeller, Richland, WA (DD, G, H, SH)</td>
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<td>ORTEC, Oak Ridge, TN (EL, E, SC, W)</td>
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<td>PAR Systems, LLC, Shoreview, MN (EQ, SE)</td>
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<td>Pioneer Motor Bearing Co., Kings Mountain, NC</td>
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<td>PMT Nuclear, Woodridge, IL (FI, SE, SH)</td>
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<td>Power &amp; Energy Systems Services, Oradel, NJ (T)</td>
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<td>Precision Control Components, LLC, York, PA</td>
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<td>Preferred Engineering Corp., (Sub. of Preferred</td>
<td>Utilities Mfg. Corp.),</td>
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<td>Promotion Nuclear, Oakville, Ontario, Canada</td>
<td>Danbury, CT (FI, M, SE)</td>
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<td>Reel COH Inc., Boisbriand, Quebec, Canada (SE)</td>
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<td>R&amp;D Laboratories, Inc., Tampa, FL (C, I)</td>
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<td>Right Brain Security, Oswego, IL (RS)</td>
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<td>Rolls-Royce Civil Civil, Warrington, United</td>
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<td>Sargent &amp; Lundy, Chicago, IL (C, DE, DD, E, EQ,</td>
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<td>SDT Ultrasonics Solutions, Cobourg, Ontario,</td>
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<td>Canada (E, Y)</td>
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<td>SEIT, Piacenza, Italy (EQ, T, V)</td>
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<td>Sigma Science, Albuquerque, NM (E, RS, W)</td>
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<td>Simpson Gunzburger &amp; Heger (SGH), Chicago, IL</td>
<td>(DE, DD, EQ, FM, FI, G, H, M,</td>
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<td>(Overhoff Technology Corp. Sub.), Canoga Park,</td>
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<td>SKODA JS a.s., Plzen, Bolevec, Czech Republic</td>
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<td>Structural Integrity Assoc., Inc., San Jose, CA</td>
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<td>Talisman Div. of Enercon, Kennewas, GA (DD, E,</td>
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<td>Teledyne Brown Engineering, Inc., Huntsville,</td>
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<td>Thermal Engineering International (TEI), Cerritos,</td>
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<td>Unified Engineering, Hamilton, Ontario, Canada</td>
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<td>Unique Technical Resources, Wayne, PA (DE, DD,</td>
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<td>Uxc, LLC, Roswell, GA (FP)</td>
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<td>Westinghouse Electric Co. LLC, Cranberry</td>
<td>Township, PA (CE, DE, E, EQ,</td>
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<td>WIG, Inc., Peekskill, NY (EL, SH, SC, W)</td>
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**04000 Analysts**

A Air
B Coincidence & Anti-Coincidence
D Density
DH Dissolved Hydrogen
DO Dissolved Oxygen
E Efficient
G Gas
CG Gas, Containment
H Hydrazine
MP Multi-Parameter
OG Off Gas Hydrogen
OX Oxygen
PO Portable Multichannel
PA Post Accident Sampling (O2 & H2)
PM Pulse-Height, Multi-Channel
PH Phosphorescence
PS Pulse-Height, Single-Channel
Sl Sludge
SO Sodium
Steam
TF Time-of-Flight
TO Total Organic Carbon
V Viscosity
WG Waste Gas, Oxygen & Hydrogen
W Water

AMEASOL - American Measurement Solutions
LLC, Santa Fe, NM (PO, SI, W)
Automation Products, Inc., (Dynatrol® Div.), Houston, TX (D, V, W)
AVANTECH, LLC, Knoxville TN (DO, E, OX, SI, SO, W)
Bot Engineering Ltd, Campbellville, Ontario, Canada
(A, CA, D, E, G, CG, PO, PM, TO, SO, W)
CAEN Sys, Viareggio, LU, Italy (CA, E, PO, PS, SI, TF)
Curtiss-Wright Nuclear Division, Scientific, Idaho Falls, ID (MH)
ECMETER Inc., Warren, MI (V)

**Energy Solutions LLC, Salt Lake City, UT (SL, W)**

Framatome Inc., (North American Headquarters), Lynchburg, VA (PO, SI, SL)
The GEL Group Inc., (GEL Engineering, LLC),

**06790 Asbestos Abatement/Removal**

Advanced Nuclear LLC, East Petersburg, PA

**06950 Bar-Coding Devices & Supplies**

Attention IT, Inc., Knoxville, TN

**08800 Cable, Electrical—also see Connectors; Wire**

Coaxial
Control
DC Data Communications
Fiber Optic
FR Flame-Resistant
HT High-Temperature
I Instrumentation
MI Mineral-Insulated, Metal-Jacketed
P Power
PA Prefabricated Assemblies
RR Radiation-Resistant
R Repair, In-Service
UC Umbilical Cord, Nuclear Grade (Robotic)
U Underwater

AVANTECH, LLC, Knoxville TN (C, DC, I, P)
AVANTECH, LLC, Columbia, SC (C, DC, I, P)
Bot Engineering Ltd, Campbellville, Ontario, Canada
(RR)
C.J. Enterprises, (Div of C.J. Instruments, Inc.),
Tarzana, CA (HT, RR)
CM Technologies Corp., Corapoa, PA (I)
Coastal Cable Tools, Inc., East Syracuse, NY (CO, C, DC, P, RR)
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (CO, CR, FR, HT, I, MI, P, PA, RR)
Framatome Inc., (North American Headquarters), Lynchburg, VA (HT, I, MI, PA, RR)
Hoskin Scientific, Oakville, Ontario, Canada (I, C)
Kanata Electronic Services Ltd., Toronto, Ontario, Canada (I, R)
Mirion Technologies Inc., Atlanta, GA (CO, CR, HT, I, MI, PA, RR)
Mirion Technologies (IST) Corp., (Sensing Systems Div), Horseheads, NY (MI, PA, RR)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (RR)
NuEnergy Technologies Inc., Providence Forge, VA (CO, C, DC, FR, HT, U)
NuSource LLC, Alexandria, VA (CO, C, I)
PAR Systems LLC, Shoreview, MN (RR, UC)
Promation Nuclear, Oakville, Ontario, Canada (CO, C, DC, I, P, PA, RR)
Reef Industries, Inc., Houston, TX (FR, PA)
Rolls-Royce Civil Nuclear SAS, Meylan, France (I)

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.denotes advertiser—see index to advertisers on pages 8-9
**09750 Calibration Equipment & Systems**

- Dose, Nuclear Medicine
- E, Electronic Test Equipment
- ET, Electrical Test Equipment
- IC, Instrumentation and Control
- LF, Laminar Flow
- P, Pressure
- R, Radiation Measuring
- Rolls-Royce Nuclear I&C, Pittsburgh, PA (I)
- Schulz Electric, Timken Power Systems, New Haven, CT (HT, RR)
- Sidus Solutions LLC, San Diego, CA (UC, U)
- Teledyne Brown Engineering, Inc., Huntsville, AL (CO, C, DC, I, U)
- VTT Technical Research Centre of Finland, VTT, Finland (C, DC, FI, FR, HT, I, RR)
- Westinghouse Electric Co. LLC, Cranberry Township, PA (I, PA)
- Petersen Inc., Ogden, UT

**09950 Cars, Railroad**

- CH, Cask-Handling
- L, Liners
- Rolls-Royce Nuclear I&C, Pittsburgh, PA (I)
- System One, Pittsburgh, PA (E, ET, IC)
- US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (D)

**09800 Calibration Services—also see Health Physics Services**

- E, Electrical Test Equipment
- ET, Electronic Test Equipment
- F, Flow
- I, Instrumentation & Control
- PT, Pressure, Temperature, Humidity
- R, Radiation Measuring
- T, Tools, Physical/Dimensional/Mechanical
- Acromag Inc., Wixom, MI (IC)
- Berkeley Nuclear Corp., San Rafael, CA (ET)
- Cabrera Services Inc., East Hartford, CT (R)
- Coastal Cable Tools, Inc., East Syracuse, NY (ET)
- Curtiss-Wright Nuclear Division, Enertech, Brea, CA (I)
- EnergySolutions LLC, Salt Lake City, UT (IC, R)
- Environmental Restoration Group Inc., Albuquerque, NM (R)
- Exelon Power Labs, Coatesville, PA (E, ET, F, IC, PR, P, T, R)
- FC1-Fluid Components International LLC, San Marcos, CA (F)
- F&E SPECIALTIES PRODUCTS, INC., Ocala, FL (F)
- Framatome Inc., (North American Headquarters), Lynchburg, VA (E, ET, IC, PT, R, T)
- General Atomics Electromagnetic Systems, San Diego, CA (ET, R)
- Health Physics Instruments, (Div. of Far West Technology, Inc.), Goleta, CA (R)
- HI-Q Environmental Products Co., Inc., San Diego, CA (F)
- Hopewell Designs Inc., Alpharetta, GA (R, T)
- Hoskin Scientific, Oakville, Ontario, Canada (F, PT)
- International Isotopes Idaho Inc., (Sub of International Isotopes Inc.), Idaho Falls, ID (R)
- Kinetics Inc., Toronto, Ontario, Canada (E, IC)
- Kinemetrics, Inc., Paducah, KY (IC)
- Mirion Technologies, Inc., Atlanta, GA (IC, R)
- National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (E, ET, PT, T)
- North Wind Group, Idaho Falls, ID (R)
- NUCON International, Inc., Columbus, OH (E, ET, IC, PT, R, T)
- ORTEC, Oak Ridge, TN (R)
- Perma-Fix Environmental Services, Inc., Oak Ridge, TN (PT)
- Precision Custom Components, LLC, York, PA (T)
- Promotion Nuclear, Oakville, Ontario, Canada (E, ET, IC, PT)
- RADECO, Inc., Plainfield, CT (F)
- Rolls-Royce Nuclear I&C, Pittsburgh, PA (ET, IC, PT)
- Rolls-Royce Nuclear I&C, Pittsburgh, PA (ET, IC, PT)
- RSO, Inc./Radiation Service Organization, Laurel, MD (R)
- Sentry Equipment, Oconomowoc, WI (F, IC, PT, R, T)
- SIET, Piacenza, Italy (E, ET, IC, PT, T)
- Southwest Research Institute, San Antonio, TX (E, ET, IC, PT, R, T)
- US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (R)
- Veolia Nuclear Solutions - Federal Services, Piketon, OH (R)
- Westinghouse Electric Co. LLC, Cranberry Township, PA (T)

**10850 Clothing, Protective, Anti-Contamination—also see Respiratory Protection Equipment**

- BS, Bubble Suits
- C, Coveralls
- CL, Coveralls, Lightweight, Breathable
- D, Disposable
- DS, Dissolvable
- G, Gloves
- H, Head Coverings
- I, Lab Coats
Coatings 11400

MG Modesty Garments, Lightweight, Breathable
SP Scrub Shirts & Pants
SC Shoe Covers

Coastal Network, Inc., Charlottesville, VA (C, CL, D, G, L, SP, SC)
Elcometer Inc., Warren, MI (C, CL, G, H)

EnergySolutions LLC, Salt Lake City, UT (D)
JSM Protective, Inc., Vero Beach, FL (C, D, G, H, L, SC)
Mohawk Safety, Manchester, CT (D, SC)
Protective Plastics, Inc., Greenville, SC (C, CL, D, SC)

Radiation Safety & Control Services, Inc., Seabrook, NH (C, D, G, H, SC)
Radium Inc., Waynesboro, VA (BS, D)
RSO, Inc./Radiation Service Organization, Laurel, MD (D)

UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (BS, C, CL, D, G, L, MG, SP, SC)

Weldstar, Aurora, IL (G)

10900 Clothing, Protective, Other Than Anti-Contamination—also see Respiratory Protection Equip.

B Bibs & Aprons
C Coveralls
CL Coveralls, Lightweight, Breathable
FS Face Shields
F Footwear
GG Gloves, Grinding
GW Gloves, Welding
GS Goggles/Spectacles
HH Hard Hats
HL Hat Liners
HP Hearing Protection Devices
HF Helmets, Fire
LC Lab Coats
MG Modesty Garments, Lightweight, Breathable
RW Rainwear
RF RF Shielding
SC Scrub Suits
SS Splash Sleeves
V Vests, Cool

Coastal Network, Inc., Charlottesville, VA (FS, GS, HH, MG, RW, V)
Elcometer Inc., Warren, MI (B, C, CL)
JSM Protective, Inc., Vero Beach, FL (C, FS, F, GW, GS, RW, SS, V)
Lanes Industries, Albuquerque, NM (RW)
MarshShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada (RF)
Mohawk Safety, Manchester, CT (C, GW, GS, HH, HL)
UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (B, C, F, RF, V)
Weldstar, Aurora, IL (FS, GW, HH)

Advanced Nuclear LLC, East Petersburg, PA (IR)
Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wapum, PA (CR)
Arkema Inc., (formerly ATOFINA Chemicals, Inc.), King of Prussia, PA (CR, IR)
Bakelite Synthetics, Louisville, KY (CS, CR, IR)
BH Energy, Weymouth, MA (CS, S)
Consolidated Power Supply, (Div. of Consolidated Pipe & Supply Co., Inc.), Birmingham, AL (C, CR)
Cortec Corporation, Saint Paul, MN (CS, CR, S)
Electric Motor and Contracting Company Inc., Chesapeake, VA (CR)
FEVDI Nuclear Decontamination, Corbas, France (S)

Framatome Inc., (North American Headquarters), Lynchburg, VA (CS, CR, IR)
Framah Safety Products Inc., Nashville, TN (S)
Fuel Tank Maintenance Co., LLC, Cookeville, TN (CS, CR, FT)
Hennigan Engineering LLC, Hingham, MA (CS, CR, S)
Hexion Inc., Columbus, OH (CS, CR, IR)
Plastocor, Inc., Hingham, MA (CR)

Reef Industries, Inc., Houston, TX (FT)
Southwest Research Institute, San Antonio, TX (CR, IR)
VTT Technical Research Centre of Finland, VTT, Finland (CS, CR)

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C Cable
CS Concrete Sealing/Restoration/
Contamination Control
CR Corrosion-Resistant
FT Floor Toppings
IR Insulation-Related
LC Low-Chloride
S Strippable
11650 Communication Systems—also see Emergency Warning Systems; Security Systems

F Face Mask Accessories
H Headsets
P Paging
RM Repeated Message Tape/Speaker Boxes
T Telephone Conferencing (Audio)
TV Telephone Conferencing (Video)
T Telephonic (Computerized Calling/Answering)
TW Two-Way Radio

Cobalt Audio Video, (A div. of Comtronics), Lexington, KY (F, H, T, TV, TW)
Comtronics, Lexington, KY (F, H, T, TV, TW)
Dufrane Nuclear Shielding Inc., Winsted, CT (H, T, TW)
Framatome Inc., (North American Headquarters), Container Products Corp., Wilmington, NC
S&G Enterprises, Inc., Germantown, WI
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (H, P, RM)

S&G Enterprises, Inc., Germantown, WI

11680 Compactor Disks, for Drums
S&G Enterprises, Inc., Germantown, WI

11700 Compactors—also see Radioactive Waste Treatment Equipment; Solid Waste Reduction Equip.
Container Products Corp., Wilmington, NC
Framatome Inc., (North American Headquarters), Lynchburg, VA
S&G Enterprises, Inc., Germantown, WI
Waste Control Systems, Inc., Phoenix, MD

12800 Computer Software—also see Imaging, Digital, Records Management Sys.

AI Artificial Intelligence
CB Cable Management
CF Configuration Management/Control
CA Contract Administration
CP Critical Path Scheduling
CD Custom Development
DB Data Base Management
DM Decontamination Management
D Dosimetry
DD Drawing & Document Control
EC Economic Analysis
ET Education/Training
E Electrical Analysis
EP Emergency Planning
ER Emergency Response (In-Plant)
EA Engineering Analysis
EM Environmental Monitoring
EQ Equipment Status/Tagout Tracking
ES Expert Systems
FT Fault-Tolerant Automatic Control
FR Failure/Root Cause Trending
FS Fire/Safety
IN Instrument Calibration
IC Inventory Control (Equipment, Supplies, etc.)
MC Maintenance Control
OS Operator Scheduling
P Piping System Design & Analysis
PD Plant Design
PS Procedure Status/Tracking
PM Project Management
QA Quality Assurance/Quality Control
RC Radiological Control/Health Physics
RM Remote Monitoring
SP Software Packages
SN Special Nuclear Material Tracking
S Spectroscopy
TS Technical Specification Systems
TE TeleRobotics
TR Trending
WM Waste Management
WC Water Chemistry Management

AMEASOL—American Measurement Solutions LLC, Santa Fe, NM (S)
Applied Analysis Corp., Reading, PA (CD, EA, P, QA, SI, SM)
ARES Security Corp., Vienna, VA (EP, ER, SE, SI)
ATS Industrial Automation, Inc. Nuclear (Canada), Cambridge, Ontario, Canada (TE)
ATS Industrial Automation, Inc. - Nuclear (UK), Blaby, Leicester, United Kingdom (TE)
ATS Industrial Automation, Inc. - Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (TE)
Avon Tech, Inc., Knoxville, TN (CF, CD, DB, PS, PM, QA, SP, WM)
The Austin Company, Cleveland, OH (CA, DD, EA, PD, PS)
AVANTech, LLC, Knoxville, TN (EA, WM, WC)
AVANTech, LLC, Columbia, SC (EA, WM, WC)
Banda Group International, LLC, Mesa, AZ (CA)
Black & Veatch, Overland Park, KS (CF, CA, CP, DB, DD, EC, E, EA, EQ, FS, P, PD, PM, QA, R)

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Walschaerts Engineering GmbH, Markdorf, Baden-Württemberg, Germany (TE)
WMG, Inc., Peekskill, NY (SN, WM)

See advertisement on Cover 3

12900 Computers & Accessories—also see Data Acq. Sys., Data Readout
A Analog
AI Artificial Intelligence Systems
CG Color Graphics
C Converters
D Digital
DD Disk Drives
ES Expert Systems
HH Hand-Held
H Hybrid
IO Input/Output Interface Units
MF Main Frame
MS Mass Storage Units
M Memory Units
MC Micro
MP Microprocessor Circuit Boards
MN Mini
PR Printers
TD Tape Drives
VD Video Display Units

Acromag Inc., Wixom, MI (A, C, IO)
AVAN Tech, LLC, Knoxville, TN (A, CG, D, IO)
AVAN Tech, LLC, Columbia, SC (A, CG, D, IO)
Bot Engineering Ltd, Campbellville, Ontario, Canada (A, C, D, H, MP)
CHP Consultants/Counts-Pro, Oak Ridge, TN (HH)
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (D, MC, MN)
CYCLEF, (Brand of EDF Group), Puteaux, France (D)
Drammote Inc., (North American Headquarters), Lynchburg, VA (CG, IO, MP, VD)
GLSEQ, LLC, Huntsville, AL (HH)
HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrolton, TX (A, IO, MP)
Labor Sync, Dumont, NJ (HH)
Mirion Technologies (Canberra) Inc., Meriden, CT (D, MC, MN)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (D, IO, VD)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (AI, D, ES, HH, H, IO, MF, MS, MC, MI, MN, PR, TD, VD)
Timesoft, Long Beach, CA (DC)

13050 Concrete Breaking, Drilling, Sawing & Scabbling
C Contractors
E Equipment
R Equipment Rental
American DND Inc., Grand Island, NY (C, E, R)
BH1 Energy, Weymouth, MA (C, E, R)
Brokk AB, Skelleftea, Sweden (E)
Brokk Inc., Santa Fe, NM (E, R)
Duiframe Nuclear Shielding Inc., Winsted, CT (C)
Fuel Tank Maintenance Co., LLC, Cookeville, TN (C)
In-Place Machining Company, LLC, Batavia, OH (C, E)
Mega-Tech Services, LLC, Cooksburg, PA (C)
New Millennium Nuclear Technologies International, Lakewood, CO (C)

13400 Connectors—also see Feedthroughs
DC Data Communications
E Electrical
EG Electrical, Glovebox
EQ Electrical, Quick Disconnect
FO Fiber Optic
T Thermocouple

13850 Construction/Engineering Services—also see Consultants; Maintenance Services
AE Architect-Engineers
CE Civil Engineers
CS Construction Services
EC Engineer-Constructors
ES Erection Services
Advanced Nuclear LLC, East Petersburg, PA (ES)
The Austin Company, Cleveland, OH (AE, CE, CS, EC)
Barge Design Solutions, Nashville, TN (AE, CE)
Barnhart Nuclear Services, Fairhope, AL (CS, ES)
Bigge Power Constructors, (Affl. of Bigge Crane and Rigging Co.), San Leandro, CA (CS, EC, ES)
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Boston Government Services, LLC (BGS), Oak Ridge, TN (AE, CE)
Burns & McDonnell, Kansas City, MO (AE, CE, CS, EC, ES)
EKIUM, Bron, France (AE, CE, CS)
Engineered Rigging, Russellville, AR (AE, CE, CS, EC)
Engineered Rigging, Valparaiso, IN (AE, CE, CS, EC)
E.S. Fox Limited, Niagara Falls, Ontario, Canada (CS, EC, ES)
Garney Construction, North Kansas City, MO (CS)
GSE DP, (DP Engineering), Fort Worth, TX (AE, CE, CS, EC, ES)
Hukari Ascendent, Wheat Ridge, CO (AE, CE)
ixS—Energy Solutions, McLean, VA (EC)
Idom Consulting, Engineering, Architecture S.A.U., Bilbao, Spain (AE, CE, CS, EC)
Imperia Engineering Partners LLC, Bordenownt, NJ (CS, EC)
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NY5/Dade Moeller, Richland, WA (CE, CS)
Orano Federal Services, Charlotte, NC (AE)
PMT Nuclear, Woodridge, IL (CS, ES)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (AE, CE, CS, EC)
Sargent & Lundy, Chicago, IL (AE, CE)
SKODA F A s., Plzen, bolevic, Czech Republic (EC, ES)
Studsvik, Inc., SandySprings, GA (AE)
System One, Pittsburgh, PA (AE, CE, CS, EC)
TradeWind Services LLC, Richland, WA (AE, CE, CS, EC)
Veolia Nuclear Solutions – Federal Services, Pikelet, OH (CE, EC)
Westinghouse Electric Co. LLC, Cranberry Township, PA (AE, CE, CS, EC)

14000 Consultants—also see Analysis; Training
AC Air Cleaning, Filtration
AU Auditing
CC Chemical Process Design
CO Coatings/Corrosion
CM Communications, Management-Employee
CD Component/System Design & Analysis
CS Computer Systems & Software
CC Configuration Control
CA Contract Administration
CH Cranes & Hoists
CE Criticality Hazard Evaluation
DC Decommissioning
DE Decommissioning
ES Earth Science Services
ED Economic Analysis, Trade-off Studies
EP Emergency Planning & Response
E Environmental
EC Equipment Condition Monitoring
FP Fire Protection
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MI Management Information & Control
MS Meteorology
NO Noise Abatement
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Prospect Law Ltd., London, United Kingdom (DE, E, RC, RA)
PTP Spent Fuel Services, LLC, Grand Island, NY (DE, FT, PP, WM)
RadComm Systems Corp., Oakville, Ontario, Canada (RD)
Radiac Research Corp., Brooklyn, NY (RD)
Radiation Control, Inc., Tallahassee, FL (AU, RD, RE, RC, TE, TA, WM)
Radios LLC, Krovpynytska, Ukraine (CD, CS, FP, MI, SE)
Radiological Solutions Inc., Rockdale, IL (E, RE, TA, WM, WT)
Radium Inc., Waynesboro, VA (CM, MN, FE, PP)
Ray Termini & Associates LLC, Wheaton, IL (FT, PP)
RETAQs Inc., Blue Bell, PA (PP)
Right Brain Security, Oswego, IL (MA, RA, S, TE)
Robatel Technologies, LLC, Rosanoke, VA (FT, SH, WM)
Rolls-Royce Nuclear SAS, Meylan, France (CS, EC, MN, MI, RA, S)
Rolls-Royce Nuclear I&C, Pittsburgh, PA (CS, EC, MN, MI, RA, S)
RSO, Inc. /Radiation Service Organization, Laurel, MD (DC, DE, E, RD, WM)
Rolls-Royce Nuclear I&C, Pittsburgh, PA (CS, EC, MN, MI, RA, S)
Ross Electric, Timken Power Systems, New Haven, CT (CH, MN)
SecurMAR, LLC, Zeionsville, IN (S)
Shiprock Consulting, LLC, Westport, MA (CM, DC, DE, E, MA, OD, PP, RD, RO, RC)
Sidus Solutions LLC, San Diego, CA (CH, S, TE, WM)
Sempelkamp NIS, Alzenau, Germany (DE)
SIET, Piacenza, Italy (PE, QA, ST)
Sigma Science, Albuquerque, NM (CS, CE, E, FP, FT, LP, PP, QA, RD, RE, RA, ST, WM)
Simpson Gumpertz & Heger (SGH), Chicago, IL (AU, CO, CD, CH, DE, FP, FT, PP, PS, PP, QA, RC, RE, SE, WM)
S&K Logistics Services, Byron, GA (PP)
Southwest Research Institute, San Antonio, TX (AC, C, CO, CD, CS, CE, DC, DE, ES, E, EC, FP, FT, N, P, QA, RE, RC, RA, SE, SH, SY, ST, TE, WT)
Springs Advanced Technology Group (ATG), LLC, Westminster, CO (DC, DE)
Studvik Inc., Sandy Springs, GA (E, P, PP, SS, ST)
Studvik Scandpower, Wilmington, NC (CS, CE, SS)
Switchgear Solutions Inc., Tucson, AZ
TEIC, Duncan, SC (PP)
Teledyne Brown Engineering Inc., Huntsville, AL (SI, SY, ST)
Thermal Engineering International (TEI), Cerritos, CA
3 Bears Technical Services, LLC, Hixon, TN (AU, CC, DC, DE, DP, FE, PP, PE, QA, RE, WM)
Timestoil, Long Reach, CA (CM, FE, FP, SY)
TradeWind Services LLC, Richland, WA (E)
Transco Products Inc., Streator, IL (FP)

Underwater Engineering Services, Inc. (Nuclear Services Div.), Fort Pierce, FL (CO, DE, MN)
Unique Technical Resources, Wayne, PA (CD, CC, DE, PP)
Utilities Service Alliance (USA), Overland Park, KS (PS)
UXc, LLC, Roswell, GA (CD, EA, PS)
VGSolutions, Mississauga, Ontario, Canada
Volcan Enterprises, Inc., Murrysville, PA (CC, EP, ME)

Women in Nuclear Canada, Toronto, Ontario, Canada (CM, PE, PP, TE)
Wood, (Environment & Infrastructure Solutions), (Radiological Services & Engineering Group), Grand Junction, CO (DC, DE, RD, RE, WM)

14300 Containers—also see Radioactive Waste Handling; Shielding Materials
B Bulk
CR Casks, Radsavate
SF Casks, Spent-Fuel Shipping
CS Casks, Spent-Fuel Storage
CO Component
DB Drum Breather Filters
DI Drum Liners/Inserts
D Drums
GA Gamma Source Shipping
GS Gamma Source Storage
G Groups 1, 2 and 3 Containers (per IAEA)
HI High-Integrity (HIC)
LI Liners/Inserts, LSA Containers
IA LSA Containers, IAEA
LS LSA Containers, Strong-Tight
OH On-Site Storage Containers, High-Level
OL On-Site Storage Containers, Low-Level
O Overpacks
SS Soft-Sided/Flexible
S Soil
TA Type A Containers
TB Type B Containers
TC Type C Containers
AECON-WACHS, (U.S. Div. of Aecon Nuclear), Jackson, SC (CO, DL, OL, TA, TB)
Aralon Nuclear Services, (Veolia ES Alaron, LLC), Wampus, PA (LS, OL)
F.N. Anderson & Assoc., Forest, VA (SF, CS, TA, TB)
AVANTECH, LLC, Knoxville, TN (CR, CO, DL, G, HI, LI, IA, LS, OL, OH, O, TA)
Camposverde srl, Milano, Italy (GA)
Coastal Network, Inc., Charlottesville, VA (DL, LS)
Consolidated Power Supply, (Div. of Consolidated Pipe & Supply Co., Inc.), Birmingham, AL (LI)
Container Products Corp., Wilmington, NC (B, IA, LS, OL, O, TA)

Container Technologies Industries, LLC, Hellenwood, TN (B, CR, CO, G, HI, LI, IA, LS, OH, O, TA, TB, TC)
Curtiss-Wright Nuclear Division, NETCO, Danbury, CT (SF)
CYCLIFE, (Brand of EDF Group), Puteaux, France (CO)
Dubose National Energy Services, Inc., Clinton, NC (B, CR, SF, CS, CO, D, LS, OL, O)
Enercon Services, Inc., (Talismen Div.), Kennesaw, GA (SF, CS)
Energy and Process Corp., (A Ferguson Sub.), Tucker, GA (CS)
EnergySolutions LLC, Salt Lake City, UT (CR, SF, CS, CO, D, HI, LI, LS, OL, O, TA, TB)
E.S. Fox Limited, Niagara Falls, Ontario, Canada (B, OH, OL, O)
Framatome Inc., (North American Headquarters), Lynchburg, VA (O)
Frontier Technology Corp., Xenia, OH (TA)
Fusion Inc., London, Canada (CS)
Gladewell Specialties Foundry Co., Calera, AL (CR)
GNS Gesellschaft für Nuklear-Service mbH, Essen, Germany (SF, CS, OH, OL)
Thomas Gray & Associates, Inc., (Owner of Environmental Mgmt. & Controls, Inc.), Orange, CA (DL, D, LS, O, TA)
Holtec International, Camden, NJ (CR, SF, CS, OH, OL, O, TA)
Leak Testing Specialists, Inc., Orlando, FL (TB)
Major Tool & Machine, Inc., Indianapolis, IN (B, CR, SF, CS, CO, OH, OL, O, TA, TB)
MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada (CR, SF, CS, OH, OL)
Mohawk Safety, Manchester, CT (DB, DL, D, O)
NAC International Inc., Peachtree Corners, GA (CR, SF, CS, OH, OL, O, TA, TB)
NAC LPT LLC, Mars, PA (B, LS, OL, TA)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (CO)
Niagara Energy Products (NEP), Niagara Falls, Ontario, Canada (B, CR, SF, CS, CO, GA, GS, G, OH, OL, O, TA, TB)
NuclearConsultants.com, Ann Arbor, MI (SF, CS, O)
Nuclear Shielding Supplies & Service, Tucson, AZ (OH, OL)
NuSource LLC, Alexandria, VA (CR, CO)
Orano TN, Columbia, MD (CR, SF, CS, CO, OH, OL, O, TA, TB, TC)
PaFec Inc., Clinton, LA (B, DL, G, LI, IA, LS, OH, OL, O, SS, S, TA)
See advertisement on page 92
Petersen Inc., Ogden, UT (B, CR, SF, CS, LS, OH, OL, O, TA, TB)
See advertisement on Cover 2
Porvair Filtration Group Inc., Ashland, VA (DB)
Precision Custom Components, LLC, York, PA (CR, SF, CS, OH)
Premier Technology, Inc., Blackfoot, ID (CR, SF, CS, TA, TB)
Pronation Nuclear, Oakville, Ontario, Canada (CR, TA, TB)
PTP Spent Fuel Services, LLC, Grand Island, NY (CR, SF, CS, OH, OL)
Radiation Safety & Control Services, Inc., Seabrook, NH (GA, TA)
Radium Inc., Waynesboro, VA (B, CO, SS)
Reel Industries, Inc., Houston, TX (B, DL, LI, LS, OL, O, SS, TA)
RSO, Inc., Radiation Service Organization, Laurel, MD (DL, D, LS, TA)
Seafab Metals Co., (Div. of The Doe Run Co.), Casa Grande, AZ (CR, SF, CS, OH, OL, O)
Siempelkamp NIS, Alzenau, Germany (CR)
Simpson Gumpertz & Heger (SGH), Chicago, IL (CR, SF, CS)
SKODA JS a.s., Pizen, Bohemice, Czech Republic (CS)
Skolk Industries, Chicago, IL (D, O, TA)
Strategic Packaging Systems, Madisonville, TN (B, CO, DL, IA, LS, O, SS, S)
Studsvik, Inc., Sandy Springs, GA (CR, LI, LS, S)
Talisman Div. of Enercon, Kennesaw, GA (CR, SF, CS, OH, OL)
Unified Engineering, Hamilton, Ontario, Canada (B, CR, SF, CS, CO, DL, D, OL, O)
UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (IA, LS)
VTT Technical Research Centre of Finland, VTT, Finland (CR, SF, CS)
Wagstaff Applied Technologies, Spokane, WA (B, CR, SF, CS, CO, DL, GA, GS, HI, LI, OH, OL, O)
Waste Control Specialists LLC, Andrews, TX (B, CR)
West Control Systems, Inc., Phoenix, MD (DL, D, HI, IA, LS, O, TA)
Westinghouse Electric Co. LLC, Cranberry Township, PA (CO)
WVMG, Inc., Peekskill, NY (CO, LI, IA, LS, OH, OL, TA, TB)
Worthington Industries, Columbus, OH (CR, CS, OH, OL, O, TA, TB)

17650 Corrosion Inhibitors
Arkema Inc., (formerly ATOFINA Chemicals, Inc.), King of Prussia, PA
Bakelite Synthetics, Louisville, KY
Cortec Corporation, Saint Paul, MN
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FL Flow 
GM Geiger-Mueller Type 
G Germanium Detectors 
IC Ion Chamber Type 
IS Ion- Implanted Silicon Detectors 
LB Low-Background Alpha/Beta 
M Modular 
P Portable 
PC Proportional Counters 
SL Scintillation Counters, Liquid 
SR Scintillation Counters, Radioimmuneassay 
ST Scintillation Counters, Solid-State 
SS Solid-State Semiconductor Type 
WT Wipe Test Counters 
X X-ray 

AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (C) 
Bot Engineering Ltd, Campbellville, Ontario, Canada (A, B, G, N, C, ER, FS, FL, IC, M, P, PC, SL, ST, SS, X) 
CAEN Sys Viareggio, LU, Italy (C) 
E Energy Solutions LLC, Salt Lake City, UT (A, B, G, C, DT, ER, GM, G, PC, ST, X) 
ENVINET GmbH, Munich/Haar, Germany (G, ER, GM, M, PC, PT) 
Environmental Remediation Group Inc., Albuquerque, NM (A, B, G, C, DT, ER, FS, GM, IC, PC, PT) 
FCI-Fluid Components International LLC, San Marcos, CA (FL) 
General Atomics ESD Systems, San Diego, CA (B, G, ER, GM, IC, M, PC, SL, ST, SS) 
GLSEQ LLC, Huntsville, AL (A, B, G, N, C, LB, P, SS) 
Health Physics Instruments, Div. of Far West Technology, Inc., Goleta, CA (A, B, G, N, C, GM, IC, PC, PT, SS) 
HID, Inc., Ann Arbor, MI (G, N, C, DT, M, P, SS) 
Intek, Inc., Westchester, OH (FL) 
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (A, B, N, ST) 
LabLogic Systems Inc., Tampa, FL (A, B, G, ER, GM, SL) 
Mazur Instruments, Castle Rock, CO (C, ER) 
Micron Technologies LLC (IST Corp., (Sensing Systems Div.), Horseheads, NY (G, N, C, IC, PC) 
Mirion Technologies (Premier Analytical), Norroy Le Veneur, France (B) 
Mohawk Safety, Manchester, CT (WT) 
OTEK Corp., Tucson, AZ (FL, PC, SS) 
Pajariot Scientific Corp. (PSC), (Pajariot Scientific Security Corp.) (PSSC), Santa Fe, NM (G, N, C) 
Paragon Energy Solutions, Fort Worth, TX (N) 
PHDS Co., Knoxville, TN (G, N, M, P, SS) 
Pylon Electronics Inc., (Instrumentation Dept.), Ottawa, Ontario, Canada (A, P, WT) 
RadComm Systems Corp., Oakville, Ontario, Canada (G, N, C, DT, FS, P) 

Rolls-Royce Nuclear SAS, Meylan, France (N, IC) 
Rolls-Royce Nuclear Inc & Co., Pittsburgh, PA (N, IC, PC) 
RSO, Inc./Radiation Service Organization, Laurel, MD (A, B, G, C, GM, IC, PC, P) 
Westinghouse Electric Co. LLC, Cranberry Township, PA (A, B, G, N, GM) 

18590 Crane Safety Systems

AT Anti-Two-Blocking (Conversion) 
SF Single-Failure-Proof 
American Crane & Equipment Corp., Douglassville, PA (AT, SF) 
PAR Systems, LLC, Shoreview, MN (AT, SF) 
REEL COH Inc., Boisbrind, Quebec, Canada (AT, SF) 
Simpson Gumpertz & Heger (SGH), Chicago, IL (AT, SF) 

18600 Cranes & Hoists

CS Control System Upgrade/Replacement 
CO Controls, Radio 
CC Cranes, Conventional, to 300-Ton Cap. 
CR Cranes, Conventional, to 500-Ton Cap. 
CH Cranes, Heavy, to 1000-Ton Cap. 
CX Cranes, Heavy-Lift, to 2500-Ton Cap. 
DG Double-Girder, Top-Riding 
Electric 
FB Fuel Building Cranes (Cask Handling) 
G Gantry 
H Hand Chain-Operated 
LM Lifting-Mounted Hoists 
MH Monorail Hoists 
RS Radiostave Storage Facility 
SG Semi-Gantry 
SF Single-Failure-Proof 
ST Single-Girder, Top-Riding 
SU Single-Girder, Under-Riding 
SP Spent Fuel Pool Cranes 
American DND Inc., Grand Island, NY (CR, CX, RS) 
Barnhart Nuclear Services, Fairhope, AL (CR, CH, CX, G) 
Bigge Power Constructors, (Afl. of Bigge Crane and Rigging Co.), San Leandro, CA (CC, CR, G, SF) 
Curtiss-Wright Nuclear Division, QuaTech NP, Cincinnati, OH (EI, E) 
CYCLIFE, (Brand of EDF Group), Futeaux, France (RS) 
Del Mar Avionics, (Hydra Set Div.), Irvine, CA (SP) 
Engineered Rigging, Russellville, AR (CC, CR, CH) 
Engineered Rigging, Valparaiso, IN (CC, CR, CH) 
Framatome Inc., (North American Headquarters), Lynchburg, VA (CS, FB, SP) 
HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrollton, TX (CS) 
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (CO) 
L Rettinger Energy Technology Solutions, Collier Township, PA (CC, CR, CH, CX) 
PPT Spent Fuel Services, LLC, Grand Island, NY (SP) 
Unified Engineering, Hamilton, Ontario, Canada (SS) 
Westinghouse Electric Co. LLC, Cranberry Township, PA (CS, FB, SP) 

19400 Dampers

AF Air-Flow Control 
B Backdraft 
F Fire 
HE High-Energy Line Break 
I Isolation 
IA Isolation, Bubble-tight 
T Tornado Protection 
Volume 
Curtiss-Wright Nuclear Division, QuaTech NP, Cincinnati, OH (AF, B, F, HE, I, IA, T, V) 
Ellis & Watts Global Industries, Inc., Batavia, OH (AF, B, F, I, IA, T, V) 
New York Blowor Company, Willowbrook, IL (AF) 
PMT Nuclear, Woodridge, IL (AF, B, F, HE, I, IA, T, V) 
SSM Industries, Inc., Pittsburgh, PA (AF, B, F, HE, I, IA, T, V) 
Unified Engineering, Hamilton, Ontario, Canada (AF) 

19700 Data Acquisition/Handling Systems—also see Computers

A Analog 
D Digital 
Acromag Inc., Wixom, MI (A, D) 
AVANTech, LLC, Knoxville, TN (A, D) 
AVANTech, LLC, Columbia, SC (A, D) 
CAEN Sys, Viareggio, LU, Italy (D) 
CHP Consultants/Counts,Pro, Oak Ridge, TN (D) 
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (A, D) 
Eddyline Technologies, Nanaimo, British Columbia, Canada (D) 
Framatome Inc., (North American Headquarters), Lynchburg, VA (A, D) 
Gral Atomics Electromagnetic Systems, San Diego, CA (A, D) 
HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrollton, TX (D) 
Hoskin Scientific, Oakville, Ontario, Canada (A, D) 
Knowledge Relay, Cypress, CA (A) 
Mirion Technologies (Canberra Inc.), Meriden, CT (A, D) 
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (D) 
ORTEC, Oak Ridge, TN (D) 
Radis LLC, Krypnytskyi, Ukraine (D) 
Rolls-Royce Nuclear, Warrington, United Kingdom (D) 
Timesof, Long Beach, CA (D)
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CHP Consultants/Counts.Pro, Oak Ridge, TN (RC)
GLSEQ, LLC, Huntsville, AL (V)
HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrollton, TX (RC, SC, V)
Mirion Technologies (Canberra) Inc., Meriden, CT (PD, P, V)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (V)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (O, PD, PX, P, RC, RP, SC, V)

20300 Decommissioning Services
DC Decontamination
DM Demolition
DS Dismantling
E Engineering Support Services
RS Radiological Surveys
SS SAFSTOR
TI Transportation, Intermodal
TR Transportation, Rail
Accelerated Decommissioning Partners - ADP, Dallas, TX (DC, DM, DS, E, RS, TR)

Advanced Consulting Group, Inc., Chicago, IL (DS, E)
Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wampum, PA (DC, TI, TR)
AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (DM, DS, RS)
◆ American DND Inc., Grand Island, NY (DC, DM, DS, E, TI, TR)

American Integrated Services, Inc., Anaheim, CA (DC, DM, DS, TI)
◆ Argonne National Laboratory, (Decommissioning Training), (EOF Div.), Argonne, IL (E)
ATS Industrial Automation, Inc. Nuclear (Canada), Cambridge, Ontario, Canada (E)
ATS Industrial Automation, Inc. - Nuclear (UK), Blaby, Leicester, United Kingdom (E)
ATS Industrial Automation, Inc. - Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (E)
AVANTech, LLC, Knoxville, TN (DC, E)
AVANTech, LLC, Columbia, SC (DC, E)
Barnhart Nuclear Services, Fairfax, AL (DS, TI, TR)
◆ Bechtel Nuclear, Security & Environmental, Reston, VA (DC, DM, DS, E)

Bevelacqua Resources, Richland, WA (DC, E, RS)
BHI Energy, Weymouth, MA (DC, DM, DS, E, RS)
Bigge Power Constructors, (Affl. of Bigge Crane and Rigging Co.), San Leandro, CA (DS, E)
Black & Veatch, Overland Park, KS (E)
Boston Government Services, LLC (BGIS), Oak Ridge, TN (E)
◆ Brokk Inc., Santa Fe, NM (DS)
Burns & McDonnell, Kansas City, MO (E, RS)
Cabrera Services Inc., East Hartford, CT (DC, DS, E, RS)
Carignan & Associates LLC, Chattanooga, TN (E)

Central Research Laboratories, Red Wing, MN (DC)
CS-2 Inc., Grand Island, NY (E)
CYCLIFE, (Brand of EDF Group), Puteaux, France (DC, DM, TI, TR)
Day & Zimmermann, Philadelphia, PA (DC)
The Delphi Groupe, Inc., Austin, TX (DC)
Duane Nuclear Shielding Inc., Winsted, CT (DC, DS, E, SS)
DW James Consulting, North Oaks, MN (E)
E. H. Wachs, Lincolnshire, IL (DS, E)
Encorus Group, (dba RJR Engineering, P.C.), Springville, NY (DC, DM, DS)
Enercon Services, Inc., (Talisman Div.), Kennesaw, GA (DC, DS, E, RS, SS, TI, TR)
◆ EnergySolutions LLC, Salt Lake City, UT (DC, DM, DS, E, RS, SS, TI, TR)

Environmental Alternatives, Inc., Swanzy, NH (DC)
Environmental Restoration Group, Inc., Albuquerque, NM (RS)
E.S. Fox Limited, Niagara Falls, Ontario, Canada (DC, DS, E, RS, SS)
EXCEL Services Corporation, Rockville, MD (E)
Fuel Tank Maintenance Co., LLC, Cookeville, TN (DC, DM, DS, E)
GNS Gesellschaft fur Nuklear-Service mbH, Essen, Germany (DC, DS)
Hennigan Engineering LLC, Hingham, MA (DC)
High Bridge Assoc., (Meridian Services Group), Chattanooga, TN (E)
Hopewell Designs, Inc., Alpharetta, GA (DS)
H3D, Inc., Ann Arbor, MI (RS)
◆ I.C.E. Service Group, Inc., Moon Township, PA (E, TI, TR)
Imperia Engineering Partners LLC, Bordentown, NJ (E)

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Manafort Brothers Inc., Plainville, CT (DC, DM)
Matom Ltd., North Wales, United Kingdom (E, RS)
Mega-Tech Services, LLC, Cooksburg, PA (E)
Merrick & Company, Greenwood Village, CO (E)

NAC LPT LLC, Mars, PA (TI, TR)
Navarras Research and Engineering, Inc., Oak Ridge, TN (DC, DM, DS, E, RS)
Nuclear-21, Waasmunster, Belgium (DC)
NV5/Dade Moeller, Richland, WA (DC, RS)
Orano Decommissioning Services, Hudson, MA (DC, DM, DS, E, RS, TR)
Orano TN, Columbia, MD (TI, TR)
Pajaratoo Scientific Corp. (PSC), (Pajaratoo Scientific Security Corp.) (PSSC), Santa Fe, NM (E, RS)
Paschal Solutions, Inc., Knoxville, KY (E)
PD Design Group, LLC, Lake Villa, IL (DS, E)
Perma-Fix Environmental Services, Inc., Oak Ridge, TN (DM)
PHDS Co., Knoxville, TN (RS)
Promotion Nuclear, Oakville, Ontario, Canada (E)
PTP Spent Fuel Services, LLC, Grand Island, NY (DC, E, TI, TR)
Red Wolf Associates, Cary, NC (E)
RETAQS, Inc., Blue Bell, PA (E)
Robatol Technologies, LLC, Roanoke, VA (E)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (E)
RSO, Inc./Radiation Service Organization, Laurel, MD (DC, RS)
Sargent & Lundy, Chicago, IL (E)

Shipsrock Consulting, LLC, Westport, MA (SS)
Siempelkamp NIS, Alzenau, Germany (DC, DS, E)
Simpson Gumpertz & Heger (SGH), Chicago, IL (E)
Sonic Systems International, Inc., Houston, TX (E)
Teledyne Brown Engineering, Inc., Huntsville, AL (DS, E)
3 Bears Technical Services, LLC, Hixon, TN (DC, E)
Underwater Construction Corp., Essex, CT (DC, DS)
UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (DC, DS)
US Ecology, Inc., Livonia, MI (DC)
Veolia Nuclear Solutions - Federal Services, Piketon, OH (DC, DM, DS, E, RS, TI, TR)
VTT Technical Research Centre of Finland, VTT, Finland (DS, E)
Waste Control Specialists LLC, Andrews, TX (TI, TR)
Westinghouse Electric Co. LLC, Cranberry Township, PA (DC, DS, E, RS, SS, TI, TR)
WMG, Inc., Peekskill, NY (DC, DS, E, RS)
Wood, (Environment & Infrastructure Solutions), (Radiological Services & Engineering Group), Grand Junction, CO (DC, DM, DS, E, RS)

20350 Decontamination Chemicals, Equip. & Services—also see Cleaning Equip., Health Physics Equip.
AC Abrasive Cleaning
CD Chemical Decontamination
C Chemicals
CS Concrete Scabbling
CR Cryogenic Cleaning (CO2)
D Drainline

EP Electropolishing
E Equipment
HS Hand Scrubbing
HF High-Pressure Freon
HW High Pressure Water
IB Ice Blasting (Wet Ice)
LD Laser Decontamination
PS Plugs & Seals
S Services
SW Soil Washing
SC Strippable Coatings
UW Ultra-High-Pressure Water
U Ultrasound
VB Vacuum Blasting, Abrasive
VF Vibratory Finishing

Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wampum, PA (CD, S)
American DND Inc., Grand Island, NY (CS, HS, S, UW)
American Integrated Services, Inc., Anaheim, CA (AC, CS)
Arkema Inc., (formerly ATOFINA Chemicals, Inc.), King of Prussia, PA (C)
BHI Energy, Weymouth, MA (AC, CS, D, E, HS, HW, SC, UW)
Brook Inc., Santa Fe, NM (CS)
Coastal Network, Inc., Charlottesville, VA (C, SC)
Container Products Corp., Wilmington, NC (E)
CYCLIFE, (Brand of EDF Group), Puteaux, France (AC, C)
The Delphi Groupe, Inc., Austin, TX (S)
Dominion Engineering, Inc., Reston, VA (CD, U)
EnergySolutions LLC, Salt Lake City, UT (CS, S, SW)
Environmental Alternatives, Inc., Swanzey, NH (AC, CD, CS, CR, HW, S, U)

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20350 Decontamination Chemicals, Equip. & Services

FEVDI Nuclear Decontamination, Corbas, France (CD, C, SC)
Framatome Inc., (North American Headquarters), Lynchburg, VA (AC, CD, HS, HW, S, SC, UW, VB)
GNSS Gesellschaft für Nuklear-Service mbH, Essen, Germany (CD, E, S)
Heat Exchanger Products Corp. (HEPCO), Hingham, MA (PS)
Hennigan Engineering LLC, Hingham, MA (HW, UW)
Kinetics Inc., Toronto, Ontario, Canada (CD, C, S)
Marshallton Research Laboratories, Inc., King, NC (C)
Matom Ltd., North Wales, United Kingdom (CD)
Mega-Tech Services, LLC, Coosburg, PA (E)
M2 Polymer Technologies, Inc., West Duneele, IL (C)
New Millennium Nuclear Technologies International, Lakewood, CO (CS)
North Wind Group, Idaho Falls, ID (CD)
Nuclear 21, Wuximunster, Belgium (AC, CD, CR, EP, E, LD, S, U)
PAR Systems, LLC, Shoreview, MN (E, HW, LD, UW)
Perma-Fix Environmental Services, Inc., Oak Ridge, TN (S, SW)
Preferred Engineering Corp., (Sub. of Preferred Utilities Mfg. Corp.), Danbury, CT (PS)
Promation Nuclear, Oakville, Ontario, Canada (SC)
Radiological Solutions Inc., Rockdale, IL (EP)
RSO, Inc./Radiation Service Organization, Laurel, MD (S)
Schulz Electric, Timken Power Systems, New Haven, CT (CR, HW, S)
Underwater Engineering Services, Inc., (Nuclear Services Div.), Fort Pierce, FL (AC, E, HW, IB)
UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (AC, CR, E, HS, HW, S, VB)
US Ecology, Inc., Livonia, MI (CD, UW, VB)
Veolia Nuclear Solutions - Federal Services, Piketon, OH (CD, HW, LD)
Westinghouse Electric Co. LLC, Cranberry Township, PA (AC, CD, C, D, E, HW, S, UW, U)
WMG, Inc., Peaksill, NY (S)

20700 Demolition and Dismantlement
American Integrated Services, Inc., Anaheim, CA
Campoverde srl, Milano, Italy
CYCLIFE, (Brand of EDF Group), Puteaux, France
Jacobs, (CH2M HILL, Inc.), (CH2M HILL Nuclear Business Group), (CH2M HILL International Nuclear Services, Ltd.), (CH2M HILL Constructors, Inc.), (Jacobs), (Jacobs Engineering), (Jacobs Technology), (Jacobs Solutions), Dallas, TX
Manafort Brothers Inc., Plainville, CT
Navarro Research and Engineering, Inc., Oak Ridge, TN
Perma-Fix Environmental Services, Inc., Oak Ridge, TN
Shiprock Consulting, LLC, Westport, MA
Siempelkamp NIS, Alzenau, Germany
Simpson Gumpertz & Heger (SGH), Chicago, IL
US Ecology, Inc., Livonia, MI
Veolia Nuclear Solutions - Federal Services, Piketon, OH

21270 Detector Heads, Sold Separately
BF Bf3 Neutron Counters
GM Geiger-Mueller Tubes/Probes
HN He3 Neutron Counters
IC Ionization Chambers
PM Photomultiplier Tubes
PC Proportional Counters
SP Self-Powered Type
SL Scintillation Counters, Liquid
ST Scintillation Counters, Solid-State
SS Solid-State Semiconductor Type
Alpha Spectra, Inc., Grand Junction, CO (PM, ST)
ENVINET GmbH, Munich/Haar, Germany (GM, PC, SP, ST)
Health Physics Instruments, (Div. of Far West Technology, Inc.), Goleta, CA (BF, GM, HN, IC, PC, ST)
LND, Inc., Oceanside, NY (BF, GM, HN, IC, PC, SL, ST)
Mirion Technologies, Inc., Atlanta, GA (BF, GM, IC, PC, SP)
Mirion Technologies (Premium Analyse), Norroy Le Veneur, France (IC)
ORTEC, Oak Ridge, TN (PM, ST, SS)
Overhoff Technology Corp., (A Div. of US Nuclear Corp.), Milford, OH (IC)
Paragon Energy Solutions, Fort Worth, TX (BF)
PHDS Co., Knoxville, TN (SS)
Rolls-Royce Civil Nuclear SAS, Meylan, France (IC, PC, SP)
Rolls-Royce Nuclear &C, Pittsburgh, PA (IC, PC, SP)
Technology for Energy Corp., Knoxville, TN (PC)
US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (BF, GM, HN, IC, PM, PC, SP, SL, ST, SS)

20120 Detectors, Accelerator Beam
Mirion Technologies, Inc., Atlanta, GA
US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA

20130 Detectors, Aerosol/Particulate
ENVINET GmbH, Munich/Haar, Germany
Mirion Technologies, Inc., Atlanta, GA

20132 Detectors, Air Bubble (In Liquid)
Framatome Inc., (North American Headquarters), Lynchburg, VA

20137 Detectors, Explosives—also see Equipment Rental
H Hand-Held
W Walk-Through
GLSEQ, LLC, Huntsville, AL (H)
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (H)

21400 Detectors, Leak—also see Tape, Moisture-Sensitive
A Acoustic
B Bubble Test
EC Electron Capture (SF/6)
G Gas
H HEPA Filter
IL Integrated Leak Rate Testing
MS Mass Spectrometer (He)
PC Pressure Change
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (HE)
SDT Ultrasound Solutions, Cobourg, Ontario, Canada (A)

22200 Detectors, Valve Position
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH
Paragon Energy Solutions, Fort Worth, TX
Technology for Energy Corp., Knoxville, TN
Offsite Services: Tool & Metal Decontamination and Monitoring

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22410 Dewatering Systems & Supplies—also see Waste Mgmt. Services
AVANTech, LLC, Knoxville, TN
AVANTech, LLC, Columbia, SC
Framatome Inc., (North American Headquarters), Lynchburg, VA
GNS Gesellschaft fur Nuklear-Service mbH, Essen, Germany
North Wind Group, Idaho Falls, ID
PaTec, Inc., Clinton, LA
Westinghouse Electric Co. LLC, Cranberry Township, PA

22700 Diving Services
CB Cutting/Burning
D Decontamination
EI Equipment Installation/Realignment
G Grouting
I Inspection
M Maintenance
MJ Metals Joining (Other Than Welding)
WD Welding, Dry Box
WW Welding, Wet
AVANTech, LLC, Knoxville, TN (D)
AVANTech, LLC, Columbia, SC (D)
CYCILIFE, (Brand of EDF Group), Puteaux, France (CB, D, I, M)
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (D)
Progen Nuclear, Oakville, Ontario, Canada (D)
PROTEM USA, Evergreen, CO (CB, M, WD)
TEC, Duncan, SC (E, M)
Underwater Construction Corp., Essex, CT (CB, D, E, G, I, M, WD, WW)

See advertisement on Cover 4

24170 Dryers, Wet Solids—also see Radioactive Waste Handling & Treatment Equipment
AVANTech, LLC, Knoxville, TN
AVANTech, LLC, Columbia, SC

25000 Electronic Instrumentation & Supplies—also see Analysis
Acromag Inc., Wixom, MI
Automation Products, Inc., (Dynatrol® Div.), Houston, TX
Bot Engineering Ltd, Campbellville, Ontario, Canada
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH
Framatome Inc., (North American Headquarters), Lynchburg, VA
General Atomics Electromagnetic Systems, San Diego, CA
LDN, Inc., Oceanside, NY
ORTEC, Oak Ridge, TN
OTEK Corp., Tucson, AZ
Rolls-Royce Civil Nuclear, Warrington, United Kingdom
Rolls-Royce Civil Nuclear SAS, Meylan, France
Rolls-Royce Nuclear I&I, Pittsburgh, PA
Rosemount Nuclear Instruments, Inc., Chanhassen, MN
Westinghouse Electric Co. LLC, Cranberry Township, PA
Yokogawa Corporation of America, Newman, GA

25250 Emergency Response Equipment
RD Radiation Detection/Survey Meters
AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (RD)
AVANTech, LLC, Knoxville, TN (RD)
AVANTech, LLC, Columbia, SC (RD)
BHI Energy, Weymouth, MA (RD)

Bot Engineering Ltd, Campbellville, Ontario, Canada (RD)
Cabrera Services Inc., East Hartford, CT (RD)
ENVI®NET GmbH, Munich/Haar, Germany (RD)
Environmental Restoration Group, Inc., Albuquerque, NM (RD)
Framatome Inc., (North American Headquarters), Lynchburg, VA (RD)
Fram Safety Products, Inc., Nashville, TN (RD)
GLSEQ, LLC, Huntsville, AL (RD)
H3D, Inc., Ann Arbor, MI (RD)
I.C.E. Service Group, Inc., Moon Township, PA (RD)
LabLogic Systems, Inc., Tampa, FL (RD)
ORTEC, Oak Ridge, TN (RD)

25300 Emergency Warning Systems (Public)—also see Communications
SE Sirens, Electronic
SM Sirens, Mechanical
SR System Readiness Reporting Systems
TC Telephonic, Computerized
TA Tone Alerting Radios
V Voice Alert (Public Address)
ARES Security Corp., Vienna, VA (SR)
BHI Energy, Weymouth, MA (SE, TC)
Bot Engineering Ltd, Campbellville, Ontario, Canada (TC)
Genave Electronics, Rosemount, MN (SE, SM, SR, TA, V)
## 25300 Emergency Warning Systems (Public)

Pajarito Scientific Corp. (PSC), (Pajarito Scientific Security Corp.) (PSSC), Santa Fe, NM (V)  
Radiation Safety & Control Services, Inc., Seabrook, NH (SE)

### 25350 Emergency Warning Systems (Worker)

Framatome Inc., (North American Headquarters), Lynchburg, VA

### 25400 Employment/Personnel Support Services—also see Consultants

| A | Agencies                                      |
| C | Craft Labor Support, Temporary               |
| E | Executive Recruitment                        |
| FT| Full-Time Permanent Personnel                |
| TS| Technical, Professional Support, Temporary   |

- American DND Inc., Grand Island, NY (C)  
- F.N. Anderson & Assoc., Forest, VA (FT, TS)  
- Applied Analysis Corp., Reading, PA (TS)  
- AVANTech, LLC, Knoxville, TN (TS)  
- AVANTech, LLC, Columbia, SC (TS)

- Banda Group International, LLC, Mesa, AZ (TS)  
- BHI Energy, Weymouth, MA (C, FT, TS)  
- Boston Government Services, LLC (BGS), Oak Ridge, TN (TS)  
- CS-2 Inc., Grand Island, NY (A, E, FT, TS)  
- DCS Systems, Inc., Simsbury, CT (TS)  
- The Delphi Group, Inc., Austin, TX (A, E, FT, TS)  
- Engineered Rigging, Russellville, AR (C, TS)  
- Engineered Rigging, Valparaiso, IN (C, TS)  
- EXCEL Services Corporation, Rockville, MD (TS)  
- Framatome Inc., (North American Headquarters), Lynchburg, VA (C, TS)

## 25600 Encapsulation, Radioactive Source

Fuel Tank Maintenance Co., LLC, Cookeville, TN (C)  
Gen IV Nuclear Energy Systems Services, Rockville, MD (TS)  
Gilbert Consulting Services, Inc., Arroyo Grande, CA (A, C, E, FT, TS)  
GSE Absolute, (Absolute Consulting), Columbia, MD (A, C, E, FT, TS)  
GSE Hyperspring, Columbia, MD (A, C, E, FT)  
- I.C.E. Service Group, Inc., Moon Township, PA (TS)  
- Morson International Inc., (Morson Canada), Toronto, Ontario, Canada (A, E, TS)  
- Navarro Research and Engineering, Inc., Oak Ridge, TN (FT, TS)  
- NV5/Dake Moeller, Richland, WA (TS)  
- Radium Inc., Waynesboro, VA (A, C, E, FT, TS)  
- Sonic Systems International, Inc., Houston, TX (FT, TS)  
- System One, Pittsburgh, PA (A, C, FT, TS)  
- UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (C, TS)  
- Women in Nuclear Canada, Toronto, Ontario, Canada (E, TS)

## 25680 Environmental Monitoring Equipment—also see Monitors, Radiation, Area

AMEASOL - American Measurement Solutions LLC, Santa Fe, NM  
Aren Engineering Ltd, Campbellville, Ontario, Canada  
Cabrera Services Inc., East Hartford, CT  
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH  
EddyT Technologies, Nanaimo, British Columbia, Canada  
Elcometer Inc., Warren, MI  
ENVINET GmbH, Munich/Haar, Germany  
Environmental Restoration Group, Inc., Albuquerque, NM  
Frham Safety Products, Inc., Nashville, TN  
General Atomics Electromagnetic Systems, San Diego, CA  
H&I-Q Environmental Products Co., Inc., San Diego, CA  
JSM Protective, Inc., Vero Beach, FL

## 26000 Characterization of NORM, medical isotopes, D&D, oil and gas, mining, and nuclear applications.

Alarom Nuclear Services, (Veolia ES Alarom, LLC), Wampum, PA  
AVANTech, LLC, Knoxville, TN  
AVANTech, LLC, Columbia, SC  
Frontier Technology Corp., Xenia, OH  
Thomas Gray & Associates, Inc., (Owner of Environmental Mgmt. & Controls, Inc.), Orange, CA  
International Isotopes Idaho Inc., (Sub. of International Isotopes Inc.), Idaho Falls, ID  
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA  
Lucideon, Durham, NC  
MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada  
New Millennium Nuclear Technologies International, Lakewood, CO  
Nu-Energy Technologies, Inc., Providence Forge, VA  
Southwest Research Institute, San Antonio, TX  
Waste Control Specialists LLC, Andrews, TX

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26100 Environmental Monitoring Services—also see Health Physics Serv.; Rad. Monitoring Serv.

*Banda Group International, LLC, Mesa, AZ

See advertisement on page 19

BHI Energy, Weymouth, MA
Cabrera Services Inc., East Hartford, CT
Encorus Group (dba RJR Engineering, P.C.), Springfield, NY
ENVINET GmbH, Munich/Haar, Germany
Environmental Restoration Group, Inc., Oak Ridge, TN
New Millennium Nuclear Technologies

Perma-Fix Environmental Services, Inc., Oak Ridge, TN

Teledyne Brown Engineering, Inc., Huntsville, AL

RADeCO, Inc., Plainfield, CT
Radiological Solutions Inc., Rockdale, IL
Rolls-Royce Nuclear LLC, Pittsburgh, PA

Teledyne Brown Engineering, Inc., Huntsville, AL
US Nuclear Corp., (Technical Associates Sub.), Milford, OH

26240 Equipment Sales, Surplus

AVANTECH, LLC, Knoxville, TN
Barnhart Nuclear Services, Faribault, MN
Curtiss-Wright Nuclear Division, Sciensitech, Idaho Falls, ID

PD Design Group, LLC, Lake Villa, IL

Thorburn Flex Inc., Pointe-Claire, Quebec, Canada
UKM Management Consulting, Brampton, Ontario, Canada

Westinghouse Electric Co LLC, Cranberry Township, PA (CT)

26260 Fall Protection Equipment & Devices, Construction & Maintenance

Frham Safety Products Inc., Nashville, TN

26790 Fiber Optic Components & Systems—also see Cable; Connectors; Feedthroughs; Remote-Viewing

AMEASOL - American Measurement Solutions LLC, Santa Fe, NM

Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (E, F)

Mirion Technologies, Inc., Atlanta, GA (E, F)

Mirion Technologies (IST Corp., Sensing Systems Div.), Horseheads, NY (E, F)

SCHOTT Electronic Packaging, (A Div. of SCHOTT North America Inc.), Southbridge, MA (E, F)

Teledyne Brown Engineering, Inc., Huntsville, AL (E, F)

27180 Filter Housing

Bag In/Bag Out

Filter Sales, Surplus

Frham Safety Products Inc., Nashville, TN

26990 Fasteners

Bolts
CG Commercial Grade Dedication
Nuts
Quick Throw
S Studs
TR Threaded Rod
W Washers

AECO-WACHS, (U.S. Div. of Aecon Nuclear), Jackson, SC (B, N, QT, S, TR, W)

Consolidated Power Supply, (Div. of Consolidated Pipe & Supply Co., Inc.), Birmingham, AL (B, N, S, TR, W)

Curtiss-Wright Nuclear Division, Nova, Middleton Heights, OH (B, N, S, TR, W)

Dubose National Energy Services, Inc., Clinton, NC (B, N, S, TR, W)


Mirion Technologies, Inc., Atlanta, GA (B, S, TR, W)

Niagara Fasteners Inc., Niagara Falls, Ontario, Canada (B, N, QT, S, TR, W)

Nor-Lock Inc., Clinton, PA (B, N, S, TR, W)

NuSource LLC, Alexandria, VA (B, N, S, TR, W)

PMT Nuclear, Woodridge, IL (B, N, S, TR, W)

Simpson Gumpertz & Heger (SGH), Chicago, IL (B, CG, N, S, TR, W)

T&T Enterprises, Corona, CA (B, N, S, TR, W)

Westinghouse Electric Co LLC, Cranberry Township, PA (B, N, S, TR, W)

Filters 27450 Filters—also see Containers

A Air
CG Commercial Grade Dedication
N Nuts
QT Quick Throw
S Studs
TR Threaded Rod
W Washers

AECO-WACHS, (U.S. Div. of Aecon Nuclear), Jackson, SC (B, N, QT, S, TR, W)

Consolidated Power Supply, (Div. of Consolidated Pipe & Supply Co., Inc.), Birmingham, AL (B, N, S, TR, W)

Curtiss-Wright Nuclear Division, Nova, Middleton Heights, OH (B, N, S, TR, W)

Dubose National Energy Services, Inc., Clinton, NC (B, N, S, TR, W)


Mirion Technologies, Inc., Atlanta, GA (B, S, TR, W)

Niagara Fasteners Inc., Niagara Falls, Ontario, Canada (B, N, QT, S, TR, W)

Nor-Lock Inc., Clinton, PA (B, N, S, TR, W)

NuSource LLC, Alexandria, VA (B, N, S, TR, W)

PMT Nuclear, Woodridge, IL (B, N, S, TR, W)

Simpson Gumpertz & Heger (SGH), Chicago, IL (B, CG, N, S, TR, W)

T&T Enterprises, Corona, CA (B, N, S, TR, W)

Westinghouse Electric Co LLC, Cranberry Township, PA (B, N, S, TR, W)

Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (A, C, HE, V)
Dominion Engineering, Inc., Reston, VA (SU, WP)
Ellis & Watts Global Industries, Inc., Batavia, OH (A, C, HE)
- Energy Solutions LLC, Salt Lake City, UT (SU, SE, D, U, W, WP)
F&J Speciality Products, Inc., OC, Fla (A)
Framatome Inc. (North American Headquarters), Lynchburg, VA (A, D, U, W, WP, WS)
Graber Technologies Inc., (a member of the Marmon Group of Companies), Glasgow, DE (C, D, SB, U, WP)
Graver Water Systems, LLC, Warren, NJ (W, WP)
HI-Q Environmental Products Co., Inc., San Diego, CA (A, C)
Joseph Oat Corp., Camden, NJ (LO, W, WP, WS)
M. Braun Inc., Stratham, NH (C, D, HE, V, WP)
Mokhawk Safety, Manchester, CT (HE, V)
Nuccon International, Inc., Columbus, OH (A, C, D, HE, WP)
NuSource LLC, Alexandria, VA (A, C, D, HE, HY, LO, SB, SP, SS, TE, U, V, W, WP)
- PacTec, Inc., Clinton, LA (CL)
Pajarito Scientific Corp. (PSC), (Pajarito Scientific Security Corp.) (PSSC), Santa Fe, NM (HE)
- Paragon Energy Solutions, Fort North, TX (A, W)
- PMT Nuclear, Woodridge, IL (A, C, D, HE, V, W, WP)
Porvair Filtration Group Inc., Ashland, VA (A, C, DE, D, HE, HY, LO, SB, SP, SS, WS)
RadCo, Inc., Plainfield, CT (C)
Radiation Safety & Control Services, Inc., Seabrook, NH (A, C)
Radiological Solutions Inc., Rockdale, IL (W, WP)
Siempelkamp Niles, Allenain, Germany (A, HE, WP)
- Tri Nuclear Corp., Ballston Lake, NY (C, D, SB, W, WP)
Underwater Engineering Services Inc., (Nuclear Services Div.), Fort Pierce, FL (D, W)

27650 Filters, Neutron (CdS) - also see Neutron Absorbers
NuSource LLC, Alexandria, VA

30040 Fuel Element Consolidation (Spend Fuel)
SE Services
SY Systems
Curtiss-Wright Nuclear Division, Scitex, Idaho Falls, ID (SE, SY)
- Energy Solutions LLC, Salt Lake City, UT (SE, SY)
Framatome Inc. (North American Headquarters), Lynchburg, VA (SE, SY)
- NAC International Inc., Peachtree Corners, GA (SE, SY)
Nuclerical Consultants, Ann Arbor, MI (SE, SY)
- Studvik Scandpower, Wilmington, NC (SE)
Westinghouse Electric Co. LLC, Cranberry Township, PA (SE, SY)

30500 Fuel Handling Equipment & Systems
CC Computer Control Systems
FT Fuel Transfer Equipment
IP In-Pile Inspection & Manipulation
QC Quick Closures, Fuel Transfer Tube
R Refueling Equipment
RS Refueling Shielding
SP Service Platform Modification/Upgrade
AAMESOL - American Measurement Solutions LLC, Santa Fe, NM (IP)
ATCS International, Inc. Nuclear (Canada), Cambridge, Ontario, Canada (R)
ATCS International, Inc. Nuclear (UK), Blaby, Leicester, United Kingdom (R)
ATCS International, Inc. Nuclear (USA), ATS Ohio, Inc., Lewis Center, OH (R)

36000 Gloveboxes & Accessories - also see Connectors, Electrical, Glovebox - Filters
B Base Units
C Containers
D Drain Assemblies
GB Glovebox Containments
GR Glovebox Rings
G Gloves
P Ports
AECO-WACHS, (U.S. Div. of Aecomm, Inc.)
Jackson, SC (B, C, D)
- F.)m Safety Products, Inc., Nashville, TN (GB, GR, G)
Joseph Oat Corp., Camden, NJ (B, C)
- Major Tool & Machine, Inc., Indianapolis, IN (C, D, G, P)
M. Braun Inc., Stratham, NH (B, C, D, G, P)
Mokhawk Safety, Manchester, CT (B, C, D, GB, GR, G)
Orano Federal Services, Charlotte, NC (B, GB, GR)

36900 Grouts
Five Star Products, Inc., Shalton, CT
- Nuclear Shielding Supplies Service, Tucson, AZ
- Simpson Gumpertz & Heger (SCH), Chicago, IL

37130 Health Physics Equipment & Supplies - also see Counters, Monitors, Radiat., Resp. Prot., Samplers
B Bags
BM Biomedical Radiation-Counting Systems
BC Body Cooling Systems
DM Decon Mats
DT Decon Trailers, Mobile
DC Dosimeter Chargers
DV Dosimeter Vests, Caps, Arm & Leg Bands
DHDosimeters, High Range (Mega R)
DP Dosimeters, Personnel
DO Dosimetry Systems, Computerized
DR Dosimetry Systems, Real-Time Remote
DS Drain Socks
EM Emergency Medical Equipment & Supplies
E Enclosures, Radiological Containment (Temporary)
FT Filter Test Equipment
HS Heat Stress Monitors
L Labels, Warning
MS Metalized Sheeting
MT Mops, Roll, Tacky
PC Phantoms, Radiation-Dosimetry
PC Panchlet Chargers, Automatic
PL Panchlets, Counting
RT Respirator Tracking Systems
S Scanners, Isotope Distribution
S Sheetng, Plastic
SW Signs, Warning, Radiation
SS Smears, Swipes
SF Stretch Wrap Film
TW Tapes, Warning
T Tubing, Plastic
WC Wheel Covers
WT Wipers, Tacky
Alpha Spectra, Inc., Grand Junction, CO
BHI Energy, Weymouth, MA (DT, DO, DR, E, T)
CAEN Sys, Viareggio, LI, Italy (DR)
Coastal Network, Inc., Charlotteville, VA (B, DM, DC, DV, DP, E, LT, MT, P, S, SW, SS, TW, T, WT)
Dufrene Nuclear Shielding Inc., Winsted, CT (E)
Environmental Alternatives, Inc., Swanzey, NH (DT, E)
- Environmental Restoration Group, Inc., Grand Junction, CO
BHI Energy, Weymouth, MA (DT, DO, DR, E, T)
CAEN Sys, Viareggio, LI, Italy (DR)
Coastal Network, Inc., Charlotteville, VA (B, DM, DC, DV, DP, E, LT, MT, P, S, SW, SS, TW, T, WT)
Dufrene Nuclear Shielding Inc., Winsted, CT (E)
Environmental Alternatives, Inc., Swanzey, NH (DT, E)
- Environmental Restoration Group, Inc., Albuquerque, NM (P, SS)
Framatome Inc., (North American Headquarters), Lynchburg, VA (DP, DO, SI)
Graphic Products, Brevard, OR (L, SW, TW)
Hi-Q Environmental Products Co., Inc., San Diego, CA (P)
Hollis, Inc., Waynesboro, VA (B, C, GB)
- Protective Plastics, Inc., Greenville, SC (GB)
Radium Inc., Waynesboro, VA (B, C, GB)
- Robatel Technologies, LLC, Roanoke, VA (B, C, D, GB, GR, P)
Simpson Gumpertz & Heger (SCH), Chicago, IL (B, GB, GR, P)
- Telebene Brown Engineering, Inc., Huntsville, AL (B)
Wagstaff Applied Technologies, Spokane, WA (B, C, D, GR, G)
Mirion Technologies (Canberra Inc.), Meriden, CT (BM, DO, PR, PC, P, SI)
Mirion Technologies Dosimetry Services, Irvine, CA (DM)
Mohawk Safety, Manchester, CT (B, DM, DS, E, L, MT, P, S, SS, SW, TW, T, WT)
North Wind Group, Idaho Falls, ID (DP)
NVS/Dade Moeller, Richland, WA (HS)
ORTEC, Oak Ridge, TN (BM, PC, P, SI)
PacTech, Inc., Clinton, LA (B, DM)
Perma-Fix Environmental Services, Inc., Oak Ridge, TN (HS)
Protective Plastics, Inc., Greenville, SC (B, MT, S, SS, SF, TW, T)
RADC, Inc., Plainfield, CT (DH, DP)
Radium Inc., Waynesboro, VA (BC, RS, RT)
Reef Industries, Inc., Houston, TX (DM, DS, SW, TW, T)
ReNuke, Oak Ridge, TN (DC)
Rexon Components, Inc., Beachwood, OH (DP, DO, PR, P)
RSO, Inc./Radiation Service Organization, Laurel, MD (B, L, P, SW, SS)
S.E. International, Inc., Summertown, TN (DP)
Tech Products, Inc., Staten Island, NY (SW)
Transco Products Inc., Streator, IL (DO)
Ultra Electronics, Energy, Round Rock, TX (DP)
UniTech Services Group, Inc., (Div. of UniFirst Reef Industries, Inc., Houston, TX (DM, DS, SW, Perma-Fix Environmental Services, Inc., Oak Ridge, TN (HS))

37160 Health Physics Equipment & Supplies, Disposable/Soluble

37200 Health Physics Services—also see Decontamination, Rad. Monitoring Serv., Waste Mgmt. Serv.

39650 Hydraulic Systems & Components—also see Consultants, Pumps, Other

39960 Imaging, Digital
### 55060 Monitors, Radiation, Personnel—also see Health Physics Equipment; Monitors, Microwave & RF

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Audible Alarm (Electronic)</td>
<td></td>
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<tr>
<td>D Doorway</td>
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<tr>
<td>DF Film Badges, Films</td>
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<td></td>
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<tr>
<td>HF Hand-and-Foot</td>
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<tr>
<td>PF Pocket Ion Chambers</td>
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<tr>
<td>TL Thermoluminescent Dosimeters (TLD)</td>
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<tr>
<td>WB Whole-Body</td>
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<tr>
<td>WM Whole Body, Mobile</td>
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<tr>
<td>Alpha Spectra, Inc., Grand Junction, CO (D, HF, WB)</td>
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<tr>
<td>Bot EngineERING Corp., Campbellville, Ontario, Canada (AL)</td>
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<tr>
<td>Coastal Network, Inc., Charlotte, NC (PL)</td>
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<tr>
<td>ENVINET GmbH, Munich, Haar, Germany (AL)</td>
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<tr>
<td>Framatome Inc., (North American Headquarters), Lynchburg, VA (WB)</td>
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<tr>
<td>General Atomics Electromagnetic Systems, San Diego, CA (AL)</td>
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<tr>
<td>LND, Inc., Oceanside, NY (AL, D, HF, PI, WB)</td>
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<tr>
<td>Ludlow Measurements, Inc., Sweetwater, TX (D, HF)</td>
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<tr>
<td>Mirion Technologies Dosimetry Services, Irvine, CA (FB)</td>
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<tr>
<td>ORTEC, Oak Ridge, TN (D, HF, WB)</td>
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<tr>
<td>RadComm Systems Corp., Oakville, Ontario, Canada (AL, D)</td>
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<tr>
<td>ReNuK, Oak Ridge, TN (PI, TL)</td>
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<tr>
<td>Rexon Components, Inc., Beachwood, OH (D, HF, TL)</td>
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<tr>
<td>S.E. International, Inc., Summertown, TN (PI)</td>
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<tr>
<td>UniTech Services Group, Inc., (Div. of UniFirst Corp.), Longmeadow, MA (AL)</td>
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</tr>
<tr>
<td>US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (D, HF, PI, WB)</td>
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</tbody>
</table>

### 55490 Neutron Absorbers—also see Filters, Neutron; Shielding Design; Shielding Materials

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA Boric Acid</td>
<td></td>
</tr>
<tr>
<td>BC Boron Carbides</td>
<td></td>
</tr>
<tr>
<td>CB Boron Carbides, Enriched (B-10)</td>
<td></td>
</tr>
<tr>
<td>BN Boron, Natural</td>
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</tr>
<tr>
<td>BE Boron, Enriched (B-10, B-11)</td>
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</tr>
<tr>
<td>OB Other Boron Compounds</td>
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</tr>
<tr>
<td>BP Burnable Poisons</td>
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</tr>
<tr>
<td>C Cadmium</td>
<td></td>
</tr>
<tr>
<td>CS Cadmium Sulfide</td>
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</tr>
<tr>
<td>E Encapsulated</td>
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</tr>
<tr>
<td>GD Gadolinium</td>
<td></td>
</tr>
<tr>
<td>G Grain</td>
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<tr>
<td>IM In Matrices</td>
<td></td>
</tr>
<tr>
<td>MM Metal Matrix Composites</td>
<td></td>
</tr>
<tr>
<td>MS Molded Shapes</td>
<td></td>
</tr>
<tr>
<td>P Pellets</td>
<td></td>
</tr>
<tr>
<td>PL Plates</td>
<td></td>
</tr>
<tr>
<td>Dufrane Nuclear Shielding Inc., Winsted, CT (BA, BC, BN, E, MS)</td>
<td></td>
</tr>
<tr>
<td>Framatome Inc., (North American Headquarters), Lynchburg, VA (BP, GD)</td>
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<tr>
<td>Free Form Fibers, Saratoga Springs, NY (BC, MM)</td>
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<tr>
<td>Hopewell Designs, Inc., Alpharetta, GA (IM, MS)</td>
<td></td>
</tr>
<tr>
<td>ISOFLUX USA, San Francisco, CA (C, GD, G, P)</td>
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<tr>
<td>MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada (E, P)</td>
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<tr>
<td>Nuclear Shielding Supplies &amp; Service, Tucson, AZ (BC)</td>
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<tr>
<td>Robatel Technologies, LLC, Roanoke, VA (E, IM, MS, PL)</td>
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<tr>
<td>Roberts Engineering Services, Inc., Stuart, FL (C, PL)</td>
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<tr>
<td>Westinghouse Electric Co. LLC, Cranberry Township, PA (BC, CE, BE, BP, C, GD)</td>
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</tbody>
</table>

### 56200 Nondestructive Testing

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Acoustic Emission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC Eddy Current</td>
<td></td>
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</tr>
<tr>
<td>E Equipment Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DP Dye Penetrant</td>
<td></td>
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</tr>
<tr>
<td>FP Fluorescent Penetrant</td>
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<td></td>
</tr>
<tr>
<td>FL Flux Leakage</td>
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<td></td>
</tr>
<tr>
<td>GP Ground Penetrating Radar</td>
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</tr>
<tr>
<td>I Infrared</td>
<td></td>
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</tr>
<tr>
<td>MP Magnetic Particle</td>
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</tr>
<tr>
<td>R Radiographic</td>
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</tr>
<tr>
<td>RT Radiographic, Real-Time Imaging</td>
<td></td>
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<tr>
<td>RS Residual Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S Services</td>
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<tr>
<td>U Ultrasonic</td>
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<tr>
<td>UW Underwater</td>
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</table>

### 58000 Particle-Measuring Instruments

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mirion Technologies Inc., Atlanta, GA (C, GD, G, P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORTEC, Oak Ridge, TN (D, HF, PI, MP, R, S, U)</td>
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<tr>
<td>VTT Technical Research Centre of Finland, VTT, Finland</td>
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</tbody>
</table>

### 59000 Pipe—also see Cleaning Equip.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS Carbon Steel, Seamless</td>
<td></td>
</tr>
<tr>
<td>CM Chrome Moly</td>
<td></td>
</tr>
<tr>
<td>E Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>NC Nickel-Cobalt, Seamless</td>
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</tr>
<tr>
<td>PI Plastic-Lined</td>
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</tr>
<tr>
<td>SL Seamless</td>
<td></td>
</tr>
<tr>
<td>S Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>T Titanium</td>
<td></td>
</tr>
<tr>
<td>Z Zirconium</td>
<td></td>
</tr>
</tbody>
</table>

### 59050 Pipe & Tube Machinery & Equipment—also see Cleaning Equip.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Bending, Pipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT Bending, Tube</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP Beveling, Pipe</td>
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<td></td>
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<tr>
<td>BV Beveling, Tube</td>
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<td></td>
</tr>
<tr>
<td>CR Crimpers, Tube</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP Cutting, Pipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT Cutting, Tube</td>
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<td></td>
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<tr>
<td>CI Cutting, In-Place</td>
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<tr>
<td>EH Expanders, Tube, Hydraulic</td>
<td></td>
<td></td>
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<tr>
<td>EM Expanders, Tube, Mechanical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EJ Expansion Joints</td>
<td></td>
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<tr>
<td>F Fittings</td>
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<tr>
<td>FT Instrumentation Tubing, Orbital Welding</td>
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<tr>
<td>PO Primary, Orbital TIG Welding</td>
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<tr>
<td>RS Rounding &amp; Sizing</td>
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<tr>
<td>T Threading, Pipe</td>
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<tr>
<td>W Weld End Preparation</td>
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</tbody>
</table>

### AECON-WACHS, (U.S. Div. of Aecon Nuclear), Jackson, SC (CS, S)

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVANTECH, LLC, Knoxville, TN (S)</td>
<td></td>
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<tr>
<td>AVANTECH, LLC, Columbia, SC (S)</td>
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<tr>
<td>Burns &amp; McDonnell, Kansas City, MO (CS, SM)</td>
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<tr>
<td>Consolidated Power Supply, (Div. of Consolidated Pipe &amp; Supply Co., Inc.), Birmingham, AL (CS, CM, CO, LI, NC, PL, SL, S, SS, TS, T, ZS)</td>
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<tr>
<td>Dupont Nuclear Energy Services, Inc., Clinton, NC (CS, CM, NL, S, SS)</td>
<td></td>
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<tr>
<td>E.S. Fox Limited, Niagara Falls, Ontario, Canada (CS, CM, CO, LN, NC, PL, SL, S, SS, TS, T, ZS)</td>
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</tr>
<tr>
<td>Framatome Inc., (North American Headquarters), Lynchburg, VA (SL, SS, TS, ZS)</td>
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<tr>
<td>FuseRing Inc., London, Canada (CM, S, T, Z)</td>
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<tr>
<td>Joseph Oat Corp., Camden, NJ (NL, S, SS)</td>
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<tr>
<td>MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada (L)</td>
<td></td>
<td></td>
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<tr>
<td>PMT Nuclear, Woodridge, IL (CS, CO, LN, NC, PL, SL, SS, TS, T, ZS)</td>
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<tr>
<td>Seafab Metals Co., (Div. of The Doe Run Co.), Casa Grande, AZ (L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westinghouse Electric Co. LLC, Cranberry Township, PA (Z, ZS)</td>
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</tr>
</tbody>
</table>

### 89 Pipe & Tube Machinery & Equipment 59850

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS Industrial Automation, Inc. Nuclear (Canada), Cambridge, Ontario, Canada (CF, CT, CI)</td>
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<tr>
<td>ATS Industrial Automation, Inc. - Nuclear (UK), Blaby, Leicester, United Kingdom (CP, CT, CI)</td>
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</tr>
</tbody>
</table>
61570  Plugs—also see Decontamination
Chemicals, Equip. & Services

CT  Condenser Tube
CR  Control Rod Drive Housing
FH  Feedwater Heater
F  Freeze Plugs
H1  Hot & Cold Leg (Remotely Installed)
I  Isolation
MS  Main Steam Line
MR  Moisture Separator Reheater
P  Pipeline
RP  Reactor Pressure Vessel Drain Line
RV  Reactor Vessel Nozzle
RO  Recirculation Outlet Nozzle
SL  Steamline (Remotely Installed)
SH  Stud Hole
ST  System Test

Consolidated Power Supply, (Div. of Consolidated Pipe & Supply Co., Inc.), Birmingham, AL (CT, CR, FH, I, RO, SH)
Curtiss-Wright Nuclear Division, Hatfield, PA (CT, FH)
Curtiss-Wright Nuclear Division, Nova, Middleburg Heights, OH (CR, I, RP, RO, SH)
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (CT, CR, FH, I, MS, P, RP, RV, RO, SL, SH)
Dubose National Energy Services, Inc., Clinton, NC (RV)
Eddy Technologies, Nanaimo, British Columbia, Canada (P)
Energy and Process Corp., (A Ferguson Sub.), Tucker, GA (CT, F, RV)
Framatome Inc., (North American Headquarters), Lynchburg, VA (CT, CR, FH, RV, SH)
Heat Exchanger Products Corp. (HEPCO), Hingham, MA (CT)

Hennigan Engineering LLC, Hingham, MA (CT)
HydroPro Inc., Bourbon, MO (CT, FH)
JNT Technical Services Inc., Little Ferry, NJ (CT, FH, MR, SH)
Master-Lee Engineered Products Inc., Latrobe, PA (SH)
Preferred Engineering Corp., (Sub. of Preferred Utilities Mfg. Corp.), Danbury, CT (HL, I, MS, P, RP, RV, RO, SL, SH, ST)
Simpson Gumpertz & Heger (SGH), Chicago, IL (P)
TEIC, Duncan, SC (MS)
Thermal Engineering International (TEi), Cerritos, CA (CT, FH, MR)

63400  Power Supplies
AC  AC
C  Chargers, Battery
DC  DC
HF  High-Frequency
HV  High-Voltage
I  Instrument
IN  Inverters
PL  Power Line Conditioner
S  Stand-by
U  Uninterruptible (AC-DC-AC)

AVANTECH, LLC, Knoxville, TN (AC, DC, I, U)
AVANTECH, LLC, Columbia, SC (AC, DC, I, U)
Black & Veatch, Overland Park, KS (S)
C&I Energy Systems, San Antonio, TX (HV)
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (AC, DC, HV, I, PL, S, U)
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (AC, DC, I)

ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (U)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (AC, DC, U)
ORTEC, Oak Ridge, TN (I)

Paragon Energy Solutions, Fort Worth, TX (AC, DC, I, PL, S, U)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (S)
Rolls-Royce Civil Nuclear SAS, Meylan, France (AC, DC, HV, U)
Rolls-Royce Nuclear &C, Pittsburgh, PA (AC, DC, HV, U)
Schneider Electric Gutor Technologies, Houston, TX (C, I, IN, PL, U)
Unique Technical Resources, Wayne, PA (AC, DC, S, U)
Westinghouse Electric Co. LLC, Cranberry Township, PA (AC, DC, HF, HV, I, PL, S, U)

64300  Protective Coverings & Tarpaulins

Protective Plastics, Inc., Greenville, SC
Reef Industries, Inc., Houston, TX
Strategic Packaging Systems, Madisonville, TN

64700  Pumps, Centrifugal

CW  Condensate & Circulating Water
E3  Engineered Class III
HD  Heater Drain
NR  Non-Code Radwaste
N2  Nuclear Class II
PC  Primary Coolant
RF  Reactor Feed
SW  Service Water, Non-Code
SN  Service Water, Nuclear Class III
SC  Small Class III Including Radiwaste

Electro Static Technology, Mechanic Falls, ME (PC)
Framatome Inc., (North American Headquarters), Lynchburg, VA (CW, PC, RF)
Hayward Tyler, Colchester, VT (CW, E3, HD, NR, N2, PC, RF, SW, SN, SC)
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (NR)

ATS Industrial Automation, Inc. - Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (CP, CT, CI)
Brokk Inc., Santa Fe, NM (CP, CT, CI)
Burns & McDonnell, Kansas City, MO (RS)
CFM/VR-TESCO, LLC Continental Field Machining, Elgin, IL (CI, PO)
Dubose National Energy Services, Inc., Clinton, NC (B)
Framatome Inc., (North American Headquarters), Lynchburg, VA (CT, CI, EH, EM, PO, W)
FuseRing Inc., London, Canada (IT)
HydroPro Inc., Bourbon, MO (EH, EM, W)
Magnatech LLC., East Granby, CT (IT, PO)
PMT Nuclear, Woodridge, IL (B, BT, BP, BV, CP, CT, PO, T)
Teledyne Brown Engineering, Inc., Huntsville, AL (B, CP)

60100  Pipe Hangers and Supports

Anvil International, LLC, North Kingstown, RI
Curtiss-Wright Nuclear Division, Nova, Middleburg Heights, OH
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH
E.S. Fox Limited, Niagara Falls, Ontario, Canada
Fronke - Anchor Darling Enterprises, Inc., (Sub. of Piping Technology & Products, Inc.), Laconia, NH
NuSource LLC, Alexandria, VA
PMT Nuclear, Woodridge, IL
Promotion Nuclear, Oakville, Ontario, Canada

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KSB, Inc., Henrico, VA (CW, E3, HD, N2, PC, RF, SW, SN, SC)

Paragon Energy Solutions, Fort Worth, TX (CW, E3, HD, NR, N2, PC, RF, SW, SN, SC)

Rotating Equipment Repair, Sussex, WI (CW, E3, HD, NR, N2, PC, RF, SW, SN, SC)

Sulzer, Chattanooga, TN (CW, E3, HD, NR, N2, PC, RF, SW, SN, SC)

Sulzer Management Ltd., (Sulzer Pumps (Canada) Inc.), Burnaby, British Columbia, Canada (CW, E3, HD, N2, PC, RF, SW, SN, SC)

Westinghouse Electric Co. LLC, Cranberry Township, PA (E3, PC, RF, SN, SC)

64750 Pumps, Other

A Air-Operated

Cl Cleanup

CA Containment Air/Gas Sampling

DH Diaphragm, Hydraulically Actuated

FP Fire Protection

HO Hand-Operated

HP High-Pressure

HY Hydraulic

J Jet

MP Metering & Proportioning

PD Positive-Displacement

SR Sealless Reciprocating

SL Slurry

SO Sodium

SP Special-Purpose

V Vacuum

AVANTech, LLC, Knoxville, TN (A, CL, MP, PD, SL, V)

AVANTech, LLC, Columbia, SC (A, CL, MP, PD, SL, V)

Curtiss-Wright Nuclear Division, Nova, Middleburg Heights, OH (A, HY)

Hayward Tyler, Colchester, VT (HP, SL, SP)

KSB, Inc., Henrico, VA (HP, J, SL, SO, SP)

Munro Instruments, Harlow, Essex, United Kingdom (CA, V)

ORTEC, Oak Ridge, TN (V)

Power System Sentinel Technologies, LLC, Warrior, AL (HP)

RADECO, Inc., Plainfield, CT (CA, SP, V)

Radiological Solutions Inc., Rockdale, IL (HP, MP, PD)

Rotating Equipment Repair, Sussex, WI (HP, SL, V)

Schutte and Koerting, Trevose, PA (J, V)

Sulzer Management Ltd., (Sulzer Pumps (Canada) Inc.), Burnaby, British Columbia, Canada (HP, SO, SP)

Transco Products Inc., Streator, IL (FP)

66280 Racks, Fuel Storage—also see Storage Systems, Spent-Fuel

C Conventional

HD High-Density

Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (C)

Dubose National Energy Services, Inc., Clinton, NC (C)

Framatome Inc., (North American Headquarters), Lynchburg, VA (C, HD)

Holtec International, Camden, NJ (C, HD)

ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (HD)

Major Tool & Machine, Inc., Indianapolis, IN (C, HD)

Nuclear Shielding Supplies & Service, Tucson, AZ (HD)

NuSource LLC, Alexandria, VA (C)

PAR Systems, LLC, Shoreview, MN (C, HD)

Precision Custom Components, LLC, York, PA (C, HD)

Simpson Gumpertz & Heger (SGH), Chicago, IL (C, HD)

Teledyne Brown Engineering, Inc., Huntsville, AL (C)

Underwater Construction Corp., Essex, CT (HD)

Wagstaff Applied Technologies, Spokane, WA (C)

Westinghouse Electric Co. LLC, Cranberry Township, PA (C, HD)

67380 Radiation Monitoring Serv.—also see Envir. Monitoring; Health Phys. Serv.

A Analog Systems

DR Design, Retrofit

D Digital Systems

M Maintenance

MO Mobile (Vehicular)

SE Sample Encapsulation

SS Smear Sampling, Area/Environmental

TC Testing & Calibration

Applied Science Professionals, LLC, (ASP-LLC), Salt Lake City, UT (TC)

ARES Security Corp., Vienna, VA (MO)

BHI Energy, Weymouth, MA (A, DR, D, M, MO, SS, TC)

Cabrera Services Inc., East Hartford, CT (SS, TC)

Campoverde srl, Milano, Italy (SS, TC)

CHP Consultants/Counts.Pro, Oak Ridge, TN (D, MO, TC)

Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (DR)

General Atomics Electromagnetic Systems, San Diego, CA (A, DR, D, M, TC)

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Construction

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Decommissioning

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- Engineering and Consulting Services
- Construction / Site Services
- Advanced Nuclear Power Generation (SMR-160)
HF Controls Corp., (Sub. of Doosan Heavy Industries & Construction Co., Ltd.), Carrollton, TX (DR, D)  
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (TC)  
Matom Ltd., North Wales, United Kingdom (SE, SS)  
Morion Technologies (Canberra) Inc., Meriden, CT (A, DR, D, MO, SS, TC)  
Perma-Fix Environmental Services, Inc., Oak Ridge, TN (TC)  
Radiological Solutions Inc., Rockdale, IL (TC)  
ReNuke, Oak Ridge, TN (SS, TC)  
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (DR, D, M)  
RSO, Inc./Radiation Service Organization, Laurel, MD (SS)  
Sargent & Lundy, Chicago, IL (DR)  
Springs Advanced Technology Group (ATG), LLC, Westminster, CO (TC)  
Tap Report, Toronto, Ontario, Canada (M, TC)  
US Nuclear Corp., (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (CA)  
Veolia Nuclear Solutions - Federal Services, Piketon, OH (DR, TC)  
VTT Technical Research Centre of Finland, VTT, Finland (TC)  
Wood, (Environment & Infrastructure Solutions), (Radiological Services & Engineering Group), Grand Junction, CO (MO)  

68000 Radioactive Waste Handling & Treatment Equip.—also see Solid Waste Reduction  
CA Calciners  
CO Compactors  
CN Concentrators (Cross-Flow Filter)  
CS Crushers, Scintillation Vials  
DC Drum Capping Machines, Remote  
DR Drum Cutting Machines  
DW Drum Washing Systems, Automatic  
E Evaporators  
F Furnaces for Glass Melting  
GC Gas Compressors  
I Incinerators  
L Liners  
LV Liquid Volume Reduction  
P Packaging  
R Robotic  
SC Secondary Containment Products  
SH Shredders (Volume Reduction)  
S Solidification  
SS Sorters, Sorting Tables  
ST Storage Systems, On-Site, High-Level  
SF Storage Systems, On-Site, Low-Level  
WT Waste Tracking & Accountability Systems (Computerized)  
Accelerated Decommissioning Partners - ADP, Dallas, TX (ST, SF)  
AeroGo, Inc., Seattle, WA (CA, CO, CN, CS, DC, DR, DW, E, F, I, SC, SH, ST, SF)  
Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wampum, PA (CO, DR, P, WT)  
AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (DR, R)  
American Crane & Equipment Corp., Douglassville, PA (R, ST, SF, WT)  
ATS Industrial Automation, Inc. - Nuclear (Canada), Cambridge, Ontario, Canada (CO, P, R, SH, SS, WT)  
ATS Industrial Automation, Inc. - Nuclear (UK), Blaby, Leicester, United Kingdom (CO, P, R, SH, SS, WT)  
ATS Industrial Automation, Inc. - Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (CO, P, R, SH, SS, WT)  
AVANTech, LLC, Knoxville, TN (CN, E, L, LV, P, S, SF)  
AVANTech, LLC, Columbia, SC (CN, E, L, LV, P, S, SF)  
Boston Government Services, LLC (BGS), Oak Ridge, TN (WT)  
Brokk AB, Skelleftea, Sweden (R)  
Brokk Inc., Santa Fe, NM (R)  
CAEN SyS, Viareggio, LU, Italy (WT)  
Central Research Laboratories, Red Wing, MN (P)  
Carrier Products Corp., Wilmington, NC (CO, SS, SF)  
Deep Isolation, Berkeley, CA (ST)  
Deltech Kiln and Furnace Design, LLC, Denver, CO (F)  
Dominion Engineering, Inc., Reston, VA (R)  
Dufrane Nuclear Shielding Inc., Winsted, CT (L, P, ST, SF)  
DW James Consulting, North Oaks, MN (WT)  
EnergySolutions LLC, Salt Lake City, UT (I, S)  
Environmental Alternatives, Inc., Swanzey, NH (E, LV, R, S)  
Frham Safety Products, Inc., Nashville, TN (L)  
GNS Gesellschaft fur Nuklear-Service mbH, Essen, Germany (CO, CN, P, ST, SF, WT)  
Holtec International, Camden, NJ (ST, SF)  
Hopewell Designs, Inc., Alpharetta, GA (P)  
I.C.E. Service Group, Inc., Moon Township, PA (P)  
Joseph Oat Corp., Camden, NJ (E, L)  
Major Tool & Machine, Inc., Indianapolis, IN (CA)  
Matom Ltd., North Wales, United Kingdom (S)  
METOIL, Praha, Czech Republic (IV)  
M2 Polymer Technologies, Inc., West Dundee, IL (P, S)  

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11190 Records Management Systems
CM Configuration Management
DS Document Storage & Retrieval
DC Drawing Control
HP Health Physics
O Operations Recording
S Spare Parts
T Training
Black & Veatch, Overland Park, KS (CM, DS, DC)
Boston Government Services, LLC (DS, G)
CHP Consultants/Counts.Pro, Oak Ridge, TN (DS, HP)
Promation Nuclear, Washington, DC (CM, DS, DC, O, S, T)

68950 Radioisotopes
CS Calibration Standards
F Fissils
G Gases, Calibration
LC Labeled Compounds
PP Primary & Processed
RS Radiation Standards
RC Radiochemicals
RM Radioisotopes, Medical
RP Radiopharmaceuticals
RE Recycling
SS Sealed Sources

71500 Refrigeration—also see Cooling Systems, Body
Ellis & Watts Global Industries, Inc., Batavia, OH
PMT Nuclear, Woodridge, IL

72300 Remote Control, Handling & Positioning Devices & Sys.—also see Robotic Devices
AI Artificial Intelligence/Expert Systems
EE End Effectors, Grippers, & Wrist
RC Remote Control
RH Remote Handling
RP Remote Positioning
RO Robotics
TM Telescoping Masts

ATS Industrial Automation, Inc. - Nuclear (USA), Lynchburg, VA (EE, RC, RH, RP, RO)
Brook AB, Skelleftea, Sweden (EE, RC, RH, RP, RO)
Brook Inc., Santa Fe, NM (RC, RH, RP, RO)
Central Research Laboratories, Red Wing, MN (RC, RH, RP)
Curtiss-Wright Nuclear Division, Scieth, Idaho Falls, ID (RC, RH, RP)
Eddyhite Technologies, Nanaimo, British Columbia, Canada (EE, RH, RP, RO)
ISO-PACIFIC Remediation Technologies Inc., Richland, WA (AI, RC)
Konneeners Nuclear Equipment & Services LLC, New Berlin, WI (RH, RP, RO)
KUKA Systems UK Ltd, West Midlands, United Kingdom (RH, RO)
Master-Lee Engineered Products Inc., Latrobe, PA (EE)
Mirion Technologies, Inc., Atlanta, GA (RC, RP)
NuVision-HWM, Pittsburgh, PA (AI, EE, RC, RH, RP, RO)
PAR Systems, LLC, Shoreview, MN (AI, EE, RH, RP, RO, TM)
Promation Nuclear, Oakville, Ontario, Canada (EE, RH, RP, RO)
Radium Inc., Waynesboro, VA (AI, EE, RC, RH, RP, RO)
Remote Ocean Systems (ROS), San Diego, CA (EE, RC, RP)
Rotabot Technologies, LLC, Roanoke, VA (RC, RH, RP)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (AI, EE, RH, RP, RO)
Shadow Robot Company Ltd., London, United Kingdom (EE, RH, RO)
Sidus Solutions LLC, San Diego, CA (RP)
Siempelkamp NIS, Alzena, Germany (RC, RH, RP)
Southwest Research Institute, San Antonio, TX (EE, RC, RH, RP, RO)
Teleflir FLIR, Chelmsford, MA (RO)
Tri Nuclear Corp., Ballston Lake, NY (RH)
Underwater Construction Corp., Essex, CT (RC, RH, RP, RO)
Unified Engineering, Hamilton, Ontario, Canada (EE, RP, RO)
Veolia Nuclear Solutions - Federal Services, Piketon, OH (RC, RH, RP, RO)
Westinghouse Electric Co. LLC, Cranberry Township, PA (EE)
Wälischmiller Engineering GmbH, Markdorf, Baden-Württemberg, Germany (EE, RH, RO)

B I Binoculars
BF Borescopes, Flexible
BR Borescopes, Rigid
I Infrared
M Monocular Scopes, Viewing/ALARA
P Periscopes
RR Radiation-Resistant
S Submersible
T Telescopes

Remote Viewing Instruments & Systems

93
73500 **Respiratory Protection Equip.--also see Clothing, Prot.; Health Phys. Serv.**

- AP Air Purification Systems
- C Compressors
- FT Fil-Testing Systems
- RC Respirator Cleaning Systems
- RD Respirator Drying Systems
- RL Respirators, Air-Line
- R Respirators, Air-Purifying
- RX Respirators, Combination Type
- RP Respirators, Powered Air-Purifying
- RE Resuscitators
- SC Self-Contained Breathing Apparatus
- SB SCRA Boost Pumps
- SE SCRA (Escape)
- SF SCRA Filling Stations
- ST SCRA Flow Testing & Services
- SW SCRA Software
- SS Storage Systems (Cleaned Equipment)
- V Vessels, High-Pressure, Air

- **Framatome Inc.,** (North American Headquarters), Lynchburg, VA (AP, C)
- **Frishman Safety Products, Inc.,** Nashville, TN (AP, C, R, R, RX, SC)
- **JSM Protective, Inc.,** Vero Beach, FL (R, RX, RP)
- **Lancs Industries, Albuquerque, NM (RL)**
- **NUCON International, Inc.,** Columbus, OH (AP, FT)
- **Radium Inc.,** Waynesboro, VA (AP, R, RX, RP)
- **UniTech Services Group, Inc.,** (Div. of UniFirst Corp.), Longmeadow, MA (C, RC, RD, R, RX, SS)

73570 **Rigging Specialis**

- **Barnhart Nuclear Services, Fairhope, AL**
- **Bigge Power Constructors, (Affl. of Bigge Crane and Rigging Co.),** San Leandro, CA
- **Dufrane Nuclear Shielding Inc.,** Winsted, CT
- **Engineered Rigging, Valparaiso, IN**
- **E.S. Fox Limited, Niagara Falls, Ontario, Canada**

73620 **Robotic Devices, Systems--also see Remote Control**

- CA CAD-Driven
- C Condenser, In-Service Inspection
- FT Force/Torque Sensors
- N Nuclear
- RV Reactor Vessel Head, ISI
- S Submersible

- **AMEASOL - American Measurement Solutions LLC,** Santa Fe, NM (N)
- **ARES Security Corp.,** Vienna, VA (CA, N)
- **ATS Industrial Automation, Inc.** Nuclear (Canada), Cambridge, Ontario, Canada (CA, C, FT, RV, S)
- **ATS Industrial Automation, Inc.** Nuclear (UK), Blaby, Leicester, United Kingdom (CA, C, FT, RV, S)
- **ATS Industrial Automation, Inc.** Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (CA, C, FT, RV, S)
- **AVANTec LLC, Knoxville, TN (S)**
- **AVANTec, LLC, Columbia, SC (S)**
- **Brokk AB, Skelleftea, Sweden (RV)**
- **Brokk Inc.,** Santa Fe, NM (CA)
- **Curtiss-Wright Nuclear Division, Anatec, Brea, CA (RV)**
- **Framatome Inc.,** (North American Headquarters), Lynchburg, VA (RV, S)
- **Kinetics Inc.,** Toronto, Ontario, Canada (CA, N)
- **KUKA Systems UK Ltd, West Midlands, United Kingdom (N)**
- **NuVision-HWM, Pittsburgh, PA (RV, S)**
- **PAR Systems, LLC, Shoreview, MN (CA, N, S)**

Radium Inc., Waynesboro, VA (FT, S)

- **Framatome Inc.,** (North American Headquarters), Lynchburg, VA (AS, G, L)
- **The GEL Group, Inc.,** (GEL Engineering, LLC), (GEL Laboratories, LLC), (Cape Fear Analytical, Inc.), Charleston, SC (SS)
- **The GEL Group, Inc.,** (General Engineering Laboratories, LLC), Charleston, SC (AP, AS, SS)
- **General Atomics Electromagnetic Systems, San Diego, CA**
- **ISO-PACIFIC Remediation Technologies, Inc.,** Richland, WA
- **RADeco, Inc.,** Plainfield, CT (A, AP, I)
- **Sentry Equipment, Oconomowoc, WI (AS, L, W)**
- **Teledyne Brown Engineering, Inc.,** Huntsville, AL (SS)
- **UniTech Services Group, Inc.,** (Div. of UniFirst Corp.), Longmeadow, MA (A, AP)
- **US Nuclear Corp.,** (Technical Associates Sub.), (Overhoff Technology Corp. Sub.), Canoga Park, CA (AP, AS, G, I, L)

74320 **Sampling Systems Services--also see Radiation Monitoring Services**

- **Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID**
- **Encorus Group, (dba RJR Engineering, P.C.),** Springville, NY
- **Framatome Inc.,** (North American Headquarters), Lynchburg, VA
- **The GEL Group, Inc.,** (GEL Engineering, LLC), (GEL Laboratories, LLC), (Cape Fear Analytical, Inc.), Charleston, SC
- **GLSEQ, LLC, Huntsville, AL**
- **ISO-PACIFIC Remediation Technologies, Inc.,** Richland, WA
- **Sentry Equipment, Oconomowoc, WI**

74350 **Scaffolding--also see Shoring; Training**

- **G Conventional**
- **M Modular**
- **SP Scaffold Plank**
- **S Suspended Type**

T Tube & Clamp Type

75190 **Seals--also see Decontamination; Chemicals & Equipment; Plugs**

- **CM Ceramic-Metal Assemblies**
- **CS Conduit Seal**
- **ES Equipment Storage Pool**
- **FG Flat Gasketing**
- **GR Grinding, Radiation Resistant**
- **FT Flux Thermible Seal**
- **H Hydraulic**
- **I Inflatable**
- **IP Inspection Port**
- **MS Mechanical, Shaft**
- **MP Mechanical, Shaft, Reactor Circulating Pump**
- **M Metal (O-Rings, C-Rings, etc.)**
- **NI Nuclear Instrumentation Cover**
- **P Penetration**
- **RC Reactor Cavity Seal**
- **SS Sealing Systems, Compressed Rubber**
- **SS Sealing Systems, Fluid**

75600 **Security Services--also see Consultants; Training**

- **A Analysis**
- **C Cybersecurity**
- **D Drug Testing**
- **E Engineering**
- **G Guards**
- **SI Screwing & Investigation**

- **ARES Security Corp., Vienna, VA (A, E)**
- **BHI Energy, Weymouth, MA (SI)**
- **Boston Government Services, LLC (BGS), Oak Ridge, TN (A, E)**
Burns & McDonnell, Kansas City, MO (A, E, SI)
Confidential Services, Inc., South Haven, MI (SI)
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (A)
Enercon Services, Inc., (Talisman Div.), Kennesaw, GA (A, E)
EXCEL Services Corporation, Rockville, MD (A)
Framatome Inc., (North American Headquarters), Lynchburg, VA (A, E)
Imperia Engineering Partners LLC, Bordentown, NJ (A, E)
Right Brain Sensitivity, Owego, IL (A, E)
Sargent & Lundy, Chicago, IL (A, E)
Southwest Research Institute, San Antonio, TX (C)
VTT Technical Research Centre of Finland, VTT, Finland (A, E, SI)

75700 Security Structures
BW Barbed Wire, Tape
BG Barbed Gates
F Fences
GO Gate Operators
G Gates
GS Guard Stations
GB Gunports, Bullet-Resistant
L Lockers, Weapon Storage
SB Security Booths (Man-Trap)
T Turnstiles
WP Wall Panels, Bullet-Resistant
WB Windows, Bullet-Resistant

AECON-WACHS, (U.S. Div. of Aecom Nuclear), Jacksonville, SC (G, GS)
CHP Consultants/Countts.Pro, Oak Ridge, TN (T)

- Container Technologies Industries, LLC
Helenwood, TN (BG, G, WP)
Framatome Inc., (North American Headquarters), Lynchburg, VA (A, E)
Mirion Technologies Inc., Atlanta, GA (T)
Par-Kut International, Inc., Harrison Twp., MI (G, GB)
PMU, Westwood, NJ (BG, F)
Presray Corp., (Div. of Pavilon Corp.) (Critical Containment Solutions), Waxahci, NY (WP)
SecurMAR, LLC, Zionsville, IN (BG, G, GB, SB, T, WP)

75850 Security Systems & Devices—also see Consultants
AI Anti-Intrusion, Indoor
AO Anti-Intrusion, Outdoor
AP Asset Protection (Anti-Removal), Electronic
AS Automated Security Patrol Robot
C Computerized
FI Fully Integrated
HS Homeless Security Devices
ID Intruder Detection (Laser, Microwave/Infrared)
ET Explosives Trace Detection
MD Metal (Weapon) Detectors
NV Night Vision Scopes & Devices
P Personal Alarm
PA Personnel Access Control
RT Railcar, Remote Tracking and Cargo Monitoring
TW Thermal Weapon Sights
VA Vehicle Access Control
VS Video Surveillance Systems (CCTV)
VT Video Transmission Systems
WI Water Intake, Anti-Intrusion
X X-ray Inspection Systems

- AEMSAL - American Measurement Solutions LLC, Santa Fe, NM (HS)
- ARES Security Corp., Vienna, VA (AS, C, F, HS, VA)
- AVANTech, LLC, Knoxville, TN (VS)
- AVANTech, LLC, Columbia, SC (VS)

Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (C, PA)
Enercon Services, Inc., (Talismen Div.), Kennesaw, GA (HS)
Framatome Inc., (North American Headquarters), Lynchburg, VA (C)
Fuel Tank Maintenance Co., LLC, Cookeville, TN (AI, AO, C, GI, HS, T)
Mirion Technologies Inc., Atlanta, GA (C, HS, PA, VA)
ORTEC, Oak Ridge, TN (HS)
Radion Inc., Waynesboro, VA (VS, VT)
Right Brain Sensitivity, Owego, IL (HS)
Rolls-Royce Civil Nuclear, Warrington, United Kingdom (C, FI, VS, VT, WI)
SecurMAR, LLC, Zionsville, IN (AI, AO, MD, X)
Sidus Solutions LLC, San Diego, CA (AI, AO, FI, HS, ID, NV, VS, VT, WI)
Talismen Div. of Enercon, Kennesaw, GA (AO, ID)

Thermo Scientific - CIDTEC Cameras & Imagers, (Part of Thermo Fisher Scientific), Liverpool, NY (NV, VS)

76400 Seismic Instrumentation & Testing
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID
Framatome Inc., (North American Headquarters), Lynchburg, VA
HP Controls Corp., (Sub of Doosan Heavy Industries & Construction Ltd.), Carrollton, TX
Kinetics Inc., Toronto, Ontario, Canada
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL

Paragon Energy Solutions, Fort Worth, TX

See advertisement on page 1

Pylon Electronics Inc., (instrumentation dept.), Ottawa, Ontario, Canada
Radics LLC, Kroplynytskyy, Ukraine
Simpson Gumpertz & Heger (SGH), Chicago, IL
Westinghouse Electric Co. LLC, Cranberry Township, PA

76700 Servomechanisms
Framatome Inc., (North American Headquarters), Lynchburg, VA

77750 Shielding Design, Radiation—also see Analysis; Consultants
Advanced Nuclear LLC, East Petersburg, PA
Applied Analysis Corp., Reading, PA
BHI Energy, Weymouth, MA
Black & Veatch, Overland Park, KS
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID
Duframe Nuclear Shielding Inc., Winsted, CT
Elliott & Watts Global Industries, Inc., Baboquivi, AZ
Encorium Group, (dba RIR Engineering, P.C.), Westfield, NJ
Framatome Inc., (North American Headquarters), Lynchburg, VA
Hopewell Designs, Inc., Alpharetta, GA
Hot Cell Services Corp., Kent, WA
ISO-Pacific Remediation Technologies, Inc., Richland, WA
Joseph Oat Corp., Camden, NJ
Kinetics Inc., Toronto, Ontario, Canada
MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada
Mars Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada
Mirion Technologies Inc., Atlanta, GA
NuclearConsultants.com, Ann Arbor, MI
Nuclear Shielding Supplies & Service, Tucson, AZ
Pylon Electronics Inc., (Instrumentation Dept.), Ottawa, Ontario, Canada
Radics LLC, Kroplynytskyy, Ukraine
Simpson Gumpertz & Heger (SGH), Chicago, IL
Westinghouse Electric Co. LLC, Cranberry Township, PA

Shielding Materials, Rad. 77800

Robotek Technologies LLC, Roanoke, VA
Sargent & Lundy, Chicago, IL
Southwest Research Institute, San Antonio, TX
WMC, Inc., Peekskill, NY

77800 Shielding Materials, Rad.—also see Containers; Doors; Neut. Absorbers; Windows
AS Acrylic Sheeting Products, Beta-Shielding
A Aggregates, High-Density Concrete
B Blankets
CB Blocks, Concrete, Lead-Core
BH Blocks, Concrete, High-Density
BM Blocks, Modular
BC Boron Carbide Grain & Shapes
BR Blocks, Composite
BL Bricks, Lead
CM Castable Shielding Materials
CC Castings, Composite
CL Castings, Lead
CA Castles, Lead
CS Collars, Streaming
CW Container Wraps
CR Criticality Control
CU Curtain Shields
FS Frisker Shields
GN Gamma/Neutron Composites
G Glass, X-ray
IV In-Vessel Shields
LF Lead Free
LP Lead Plastic
LL Low-Level Shields, Lead/Steel
PW Pipe Wraps/Sleeves
PC Plugs, Closures
P Polyethylene
PB Polyethylene, Borated
RF Refueling Shields
TN Thermal Neutron Materials
TA Tungsten Alloys
WP Wall Panels
WS Water- Shields, Modular (Gamma/Neutron)

F.J. Anderson & Assoc., Forest, VA (CR)
AVANTech, LLC, Knoxville, TN (LL, WP)
AVANTech, LLC, Columbia, SC (LL, WP)
CHP Consultants/Countts.Pro, Oak Ridge, TN (BL)
Curtiss-Wright Nuclear Division, Scientech, Idaho Falls, ID (CR, CU, IV, LL, PC, RF, WS)
Mackow Safety, Manchester, CT (BL)

- NAC International Inc., Peachtree Corners, GA (BM, BR, CC, CS, GN, IV, TN)
- Niagara Energy Products (NEP), Niagara Falls, Ontario, Canada (A, B, BM, BR, CC, CW, CR, CU, FS, GN, G, IV, LL, PW, PC, PW, RF, TA, WP)

- EnergySolutions LLC, Salt Lake City, UT (CL, LL, WP)
- Framatome Inc., (North American Headquarters), Lynchburg, VA (B)

- Free Form Fibers, Saratoga Springs, NY (BC)
- Frham Safety Products, Inc., Nashville, TN (PW)
- Frontier Technology Corp., Xenia, OH (GN, TN)
- Glidewell Specialties Foundry Co., Calera, AL (PC)
- Mohawk Safety, Manchester, CT (BL)

- NAC International Inc., Peachtree Corners, GA (BM, BR, CC, CS, GN, IV, TN)
- Niagara Energy Products (NEP), Niagara Falls, Ontario, Canada (A, B, BM, BR, CC, CW, CR, CU, FS, GN, G, IV, LL, PW, PC, PW, RF, TA, WP)
- Frham Safety Products, Inc., Nashville, TN (PW)
- Frontier Technology Corp., Xenia, OH (GN, TN)
- Glidewell Specialties Foundry Co., Calera, AL (PC)
- Mohawk Safety, Manchester, CT (BL)
77800 Shielding Materials, Rad.

Wagstaff Applied Technologies, Spokane, WA (BL, CM, CL, CW, CR, CU, IV, PW)

77900 Shoring—also see Scaffolding
Simpson Gumpertz & Heger (SGH), Chicago, IL

78700 Sleeves, Wall (Pipe)
Joseph Oat Corp., Camden, NJ

79360 Solid Waste Reduction Equipment & Tools, Radioactive
C Containment
CR Control Rod Crushers, Reducers
NW Neutron Window Reducers
P Packaging
SB Stellite Ball Punches
U Underwater Reduction Tools
VI Velocity Limiter Shears

Advanced Consulting Group, Inc., Chicago, IL (U)
AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (U)

American DND Inc., Grand Island, NY (C, P)
ATS Industrial Automation, Inc. Nuclear (Canada), Cambridge, Ontario, Canada (P, U)
ATS Industrial Automation, Inc. - Nuclear (UK), Blaby, Leicester, United Kingdom (P, U)
ATS Industrial Automation, Inc. - Nuclear (USA), (ATS Ohio, Inc.), Lewis Center, OH (P, U)
Curtais-Wright Nuclear Division, Scientech, Idaho Falls, ID (CR, U)

EnergySolutions LLC, Salt Lake City, UT (U, VL)

GNS Gesellschaft fur Nuklear-Service mbH, Essen, Germany (P, U)

Thomas Gray & Associates, Inc., (Owner of Environmental Mgmt. & Controls, Inc.), Orange, CA (P)

KUKA Systems UK Ltd, West Midlands, United Kingdom (P)

Major Tool & Machine, Inc., Indianapolis, IN (C)

MarShield Radiation Shielding, (Div. of Mars Metal Co.), Burlington, Ontario, Canada (C)
M. Braun Inc., Stratham, NH (C)
M2 Polymer Technologies, Inc., West Dundee, IL (P)

PacTec, Inc., Clinton, LA (C, P)

PAR Systems, LLC, Shoreview, MN (U)

PD Design Group, LLC, Lake Villa, IL (U)

Robatel Technologies, LLC, Roanoke, VA (P)

Siempelkamp NIS, Alzenau, Germany (P)

Underwater Engineering Services, Inc., (Nuclear Services Div.), Fort Pierce, FL (P, U)

Unified Engineering, Hamilton, Ontario, Canada (C, CR)

Veolia Nuclear Solutions - Federal Services, Piketon, OH (C, P)

Wagstaff Applied Technologies, Spokane, WA (C, CR)

Westinghouse Electric Co. LLC, Cranberry Township, PA (P, U)

WMG, Inc., Peekskill, NY (P)

79370 Sorbents
ES Environmental Spill
LR Liquid Radwaste

AVANTEch, LLC, Knoxville, TN (LR)

AVANTEch, LLC, Columbia, SC (LR)

Frhame Safety Products, Inc., Nashville, TN (ES)

JRM Chemical Inc., Cleveland, OH (ES, LR)

Kinetics Inc., Toronto, Ontario, Canada (ES)

METOIL, Praha, Czech Republic (LR)

M2 Polymer Technologies, Inc., West Dundee, IL (ES, LR)

Nochar, Inc., Indianapolis, IN (LR)

NUCON International, Inc., Columbus, OH (LR)

RSO, Inc./Radiation Service Organization, Laurel, MD (ES)

79700 Sources, Radioactive—also see Radiotopes, Testing Services

CHP Consultants/Counts.Pro, Oak Ridge, TN

General Plastics MFG. Co., Tacoma, WA

ISO PACIFIC Remediation Technologies, Inc., Richland, WA

RadQual, LLC, Idaho Falls, ID

81680 Storage Services
E Equipment
SF  Spent Fuel  
Barnhart Nuclear Services, Fairhope, AL (E)  
Curtiss-Wright Nuclear Division, NETCO,  
Danbury, CT (SF)  
Curtiss-Wright Nuclear Division, Scientech, Idaho  
Falls, ID (SF)  
Framatome Inc., (North American Headquarters),  
Lynchburg, VA (E)  
Konecranes Nuclear Equipment & Services LLC,  
New Berlin, WI (E)  
M. Braun Inc., Stratham, NH (E)  
NuclearConsultants.com, Ann Arbor, MI (SF)  
Orano TN, Columbia, MD (SF)  
Peterson Inc., Ogden, UT (E)  
PTP Spent Fuel Services, LLC, Grand Island, NY (E, SF)  
Schulz Electric, Timken Power Systems, New  
Haven, CT (E)  
UxC, LLC, Roswell, GA (E, SF)  
Westinghouse Electric Co. LLC, Cranberry  
Township, PA (E, SF)  

81710  Storage Systems, Spent-Fuel—also see Containers; Racks  
D  Dry  
W  Wet  
Curtiss-Wright Nuclear Division, Scientech, Idaho  
Falls, ID (D, W)  
Holtec International, Camden, NJ (D, W)  
Konecranes Nuclear Equipment & Services LLC,  
New Berlin, WI (D, W)  
Major Tool & Machine, Inc., Indianapolis, IN (D,  
W)  
Mega-Tech Services, LLC, Cooksburg, PA (D)  
NAC International Inc., Peachtree Corners, GA (D)  
Orano TN, Columbia, MD (D)  
PAR Systems, LLC, Shoreview, MN (W)  
Precision Custom Components, LLC, York, PA (D,  
W)  
Premier Technology, Inc., Blackfoot, ID (D)  
PROMATION Nuclear, Oakville, Ontario, Canada (D,  
W)  
PTP Spent Fuel Services, LLC, Grand Island, NY (D,  
W)  
Reef Industries, Inc., Houston, TX (D)  
Robatel Technologies, LLC, Roanoke, VA (D)  
SKODA J.S. a.s., Plizen, Bolesec, Czech Republic (D,  
W)  
Unified Engineering, Hamilton, Ontario, Canada (D)  
UxC, LLC, Roswell, GA (D, W)  
Wagstaff Applied Technologies, Spokane, WA (D,  
W)  
Westinghouse Electric Co. LLC, Cranberry  
Township, PA (D, W)  

83110  Tags & Labels (Warning,  
Inventory, etc.)—also see Health Phys  
Coastal Network, Inc., Charlottesville, VA  
Framah Safety Products, Inc., Nashville, TN  
InfoSight Corp., Chillicothe, OH  
JSM Protective, Inc., Vero Beach, FL  
RSO, Inc./Radiation Service Organization, Laurel,  
MD  

83120  Tags, Valve  
InfoSight Corp., Chillicothe, OH  
Mohawk Safety, Manchester, CT  

83150  Tanks, Storage—also see Diaphragms;  
Inspection Services  
AL  Aluminum  
GF  Glass Fiber  
P  Plastic  
RC  Rubber, Collapsible  
S  Steel  
SS  Steel, Stainless  
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(S, SS)  
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S, SS)  
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Paragon Energy Solutions, Fort Worth, TX (S, SS)  
Peterson Inc., Ogden, UT (AL)  
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SS)  
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Worthington Industries, Columbus, OH (S, SS)

83210 Tape

C Cloth, Nuclear
E Electrical Splicing Tape
F Foam
MS Moisture-Sensitive
RS Reinforced Strapping, Nuclear
WL Warning, Luminescent
Coastal Network, Inc., Charlottesville, VA (C, WL)
Curtiss-Wright Nuclear Division, QualTech NP, Cincinnati, OH (E)

Fraham Safety Products, Inc., Nashville, TN (C, MS, RW, LS)

General Plastics MFG. Co., Tacoma, WA (F)
JSM Protective, Inc., Vero Beach, Fl (C, MS, RW, LS)
Lancs Industries, Albuquerque, NM (C, MS, RW, LS)

Protective Plastics Inc., Greenville, SC (C, RS)

Reed Industries, Inc., Houston, TX (WL)


RSO, Inc./Radiation Service Organization, Laurel, MD (C, WL)

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HT High-Temperature
M Miniature (Remote Viewing)
PI Pipe Inspection
U Underwater, Color, High-Radiation
W Welding Arc Viewing (Color)

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Magnatech LLC, East Granby, CT (W)

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Thermo Scientific - CIDTEC Cameras & Imagers, (Part of Thermo Fisher Scientific), Liverpool, NY (C, M, PI, U, W)

Underwater Engineering Services, Inc., (Nuclear Services Div.), Fort Pierce, FL (U)

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A Automated
CS Capacitance Strain Gauging
CP Coating Porosity Detection
CT Coating Thickness Gauging
C Concrete Inspection
EC Eddy Current
EM Electric Motors
ES Electrical Systems & Components
E Environmental
FO Fiber Optic
HE HEPA Filter
II Infrared Imaging
IC Instrumentation & Control
LR Leak Rate, Local
M Manual
MT Materials
ND Nondestructive
PH P海南
P Portable
PA Power Apparatus
RT Resistance Temperature Detectors
S Stationary
SC Structures/Components
U Ultrasonic
UC Ultrasonic Coating
VL Vacuum Leak Testers, Tube
V Valve
VM Valve, Motor-Operated, Diagnostic
VS Valve, Solenoid Operated, Diagnostic
V Vibration

Acromag Inc., Wixom, MI (IC)

Analysis and Measurement Services Corp. (AMS), (Including CHAR Services), Knoxville, TN (ES, IC, ND)

Anamet, (a Div. of Acuren Inspection, Inc.), Hayward, CA (C, I, PL)

AVANTech, LLC, Knoxville, TN (ES, IF, LR, LL, M, ND, P)

AVANTech, LLC, Columbus, OH (ES, IF, LR, LL, M, ND, P)

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CBS Nuclear Services, Inc., Matthews, NC (ES)

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Curtiss-Wright Nuclear Division, LMT, Hutchinson, MN (CT, ND, U)

EFCO USA Inc., Charlotte, NC (P, S, V)

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PAR Systems, LLC, Shoreview, MN (A, ND, U)

RADeCo., Inc., Plainfield, CT (E)

Schulz Electric, Timken Power Systems, New Haven, CT (EM)

TEIC, Duncan, SC (EC, VL)

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TRILLIUM Valves USA, Ipswich, MA (V, VM, VS)

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Westinghouse Electric Co. LLC, Cranberry Township, PA (EM, RT)

84600 Testing Services—also see Analysis; Maintenance Serv.; Nondestructive Testing

AI Alloy Identification (On-Site)
C Coatings
CD Corrosion Detection
EM Electric Motors
ES Electrical Systems & Components
EQ Environmental Qualification
FR Fire Resistance/Flammability
FL Flow
FM Fracture Mechanics
I Infrared
IC Instrumentation & Control
LF Laminar Flow Facilities
LD Leak Detection, Tube
LN Leak, N, Gauge
LS Leak, Radiactive Sealed Source
LR Leak-Rate, Integrated
LL Leak, Local
M Materials
ND Nondestructive
PH Photometric Testing
PL Plastics/Polymers
P Pumps
QS Quality Services
SP Sealed Sources (Pressure, Temperature)
S Seismic
SI Siren Systems
ST Structures
TC Transport Containers
U Ultrasonic
V Vibration
WT Wall Thinning Detection, Tube

Alarion Nuclear Services, (Veola ES Alarcon, LLC), Wampum, PA (C, EM, P)

AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (AL, M, ND)

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email: lboing@anl.gov

Argonne National Laboratory  
EOF Division – Special Projects  
9700 South Cass Avenue  
Argonne, IL 60439

86130 Tools

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AECON-WACHS, (U.S. Div. of Aecon Nuclear), Jackson, SC (C, E, H, P)
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ATS Industrial Automation, Inc. Nuclear (UK), Blaby, Leicester, United Kingdom (C, E, H, P)
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Curtiss-Wright Nuclear Division, Nova, Middleburg Heights, OH
Curtiss-Wright Nuclear Division, QualityTech NP, Cincinnati, OH (C, E, H, P)
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Prevacon Nuclear, Oakville, Ontario, Canada (C, E, H, P)
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86300 Training—also see Consultants; Health Physics Services; Training Centers; Training Materials

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87380 Tritium Handling Equipment
Kinectrics Inc., Toronto, Ontario, Canada
Major Tool & Machine, Inc., Indianapolis, IN NUCON International Inc., Columbus, OH Veolia Nuclear Solutions - Federal Services, Pikeot, OH Wastigate Applied Technologies, Spokane, WA

87395 Tritium Recycle & Extraction Equipment
Major Tool & Machine, Inc., Indianapolis, IN

87400 Tritium Removal Equipment

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90280 Valve Packing Removal Equipment
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P Pressure, Reactor

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U Underwater

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DimEye Corp., Calabasas, CA (I, PP, R, U)

Framatome Inc. (North American Headquarters), Lynchburg, VA (I, R, U)

Lenox Instrument Co., Inc., Trevose, PA (R, U)

Master-Lee Engineered Products Inc., Latorbe, PA (U)

NuSource LLC, Alexandria, VA (GL)

Schutte and Koerting, Trevesen, VA (PA)

Sigma Inc., Charleston, IN (G, GL, PC, SC, TD, W)

TEIC, Duncan, SC (BL)

TRILLIUM Valves USA, Ipswich, MA (G, GL, SC, W)

Valv Technologies, Inc., Houston, TX (GL)

Westinghouse Electric Co. LLC, Cranberry Township, PA (SC)

Newman Hattersley Ltd., Mississauga, Ontario, Canada (PC)

NuSource LLC, Alexandria, VA (GL)

Thermo Scientific - CIDTPEC Cameras & Imagers, (Part of Thermo Fisher Scientific), Liverpool, NY (I, R, U)

Underwater Construction Corp., Essex, CT (R, U)

Westinghouse Electric Co. LLC, Cranberry Township, PA (R, U)

93040 Waste Management Services

DM Demineralization
DW Dewatering, Nonradioactive
DR Dewatering, Radioactive
DL Disposal (Low-Level)
ER Environmental Remediation
FP Fuel Pool Services
I Incineration
IL Intermediate-Level
LC Lead Contamination
LW Liquid Waste (High-Level & Low-Level)
MW Mixed Waste Analysis & Processing
MD Mixed Waste Disposal/Treatment
MS Mixed Waste Solvent Disposal
MO Molten Salt Oxidizers
M Monitoring
NR Non-Radioactive
OF Off-Site (Fixed Base)
ON On-Site
P Packaging/Repackaging
RL Radioactive, Low-Level
HL Radioactive, High-Level
RD Resin Destruction
RP Resin Pyrolysis
RR Resin Regeneration
RC Resource Recovery
SM Scrap Melting
SS Sealed Source Decommissioning
S Solidification
SP Super Radiator Coils, Chaska, MN (P)

T Vitrification
VR Volume Reduction
WC Waste Characterization
WS Waste Sampling
WD Wood Decontamination

Accelerated Decommissioning Partners - ADP, Dallas, TX (P, LL, HL)

Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wampum, PA (DL, IL, M, OF, P, LL, HL, RC, SS, SR, WC, VR, WC)

AMEASOL - American Measurement Solutions LLC, Santa Fe, NM (MW, M, WC)


American Integrated Services, Inc, Anaheim, CA (ER, LC, NR)

Attenuation Environmental Co, Seattle, WA (ER, MW, WC)

Augen ph, Wetherby, United Kingdom (DL, NR, LL)


BHI Energy, Weymouth, MA (B, BF, G, GB, M)

Thermo Scientific - CIDTPEC Cameras & Imagers, (Part of Thermo Fisher Scientific), Liverpool, NY (I, R, U)

Underwater Construction Corp., Essex, CT (R, U)

Westinghouse Electric Co. LLC, Cranberry Township, PA (R, U)
Decidia Research & Consulting, Sabadell, Barcelona, Spain (ER)
Deep Isolation, Berkeley, CA (IL, MD, OF, ON, P, HL, T)
The Delphi Group, Inc., Austin, TX (I, IL, M, NR, ON, P, HL, S, VR)
Dominion Engineering, Inc., Reston, VA (DR, LW)
DW James Consulting, North Oaks, MN (WC)
Encors Group, (dba RJR Engineering, P.C.), Springville, NY (ER, FP)

Energy Solutions LLC, Salt Lake City, UT (DW, DR, DL, ER, FP, I, LC, MW, MD, MS, P, IL, HL, RC, SM, SS, S, SR, T, V, VR, WC)

See advertisement on pages 4–5
Energy, Technology and Environmental Business Association, Oak Ridge, TN (ER, WC)
Environmental Alternatives, Inc., Swanzey, NH (DR, ER, S, SR, VR, WC, WD)
Fuel Tank Maintenance Co., LLC, Cookeville, TN (DM, DW, ER, LC, NR)
The GEL Group, Inc., (GEL Engineering, LLC), (GEL Laboratories, LLC), (Cape Fear Analytical, Inc.), Charleston, SC (ER, M, WC)
The GEL Group, Inc., (General Engineering Laboratories, LLC), Charleston, SC (ER, M, WC, WS)
GNS Gesellschaft fur Nuklear-Service mbH, Essen, Germany (LI, HL)
Holtec International, Camden, NJ (DL, ER, FP, ON, P, VR)
I.C.E. Service Group, Inc., Moon Township, PA (DL, ER, I, IL, LC, MW, MD, NR, OF, ON, P, IL, S, UT, VR, WC, WS, WD)
ISO-PACIFIC Remediation Technologies, Inc., Richland, WA (DR, DL)

Strategic Packaging Systems, Inc., Toronto, Ontario, Canada (ER, IL, MW, MD, M, OF, ON, P, LL, HL, WC, WS)
KUKA Systems UK Ltd, West Midlands, United Kingdom (MW, P, LL, VR, WC)
LND, Inc., Oceanside, NY (DR, DL, IL, LW, M, HL, UT, WC)
Lucideon, Durham, NC (LL, S)
Matom Ltd., North Wales, United Kingdom (ER, IL, MW, MD, MO, M, NR, LL, HL, RD, RP, RR, WC)
Mirion Technologies, Inc., Atlanta, GA (M)
National Technical Systems (NTS), (Nuclear Engineering & Test Services), Huntsville, AL (M)
Neptune and Company, Inc., Lakewood, CO (M, NR, LL, HL, T)
New Millennium Nuclear Technologies International, Lakewood, CO (ER, WC, WS)
NYS/Dade Moeller, Richland, WA (ER, NR, LL, SR, WC)
Off-Site Source Recovery Program, Los Alamos, NM (SS)
Orano Decommissioning Services, Hudson, MA (P, LL, HL)
Orano TN, Columbia, MD (FP, OF, ON, P, LL, HL)
Pajarito Scientific Corp. (PSSC), Santa Fe, NM (MW)


FOR MORE INFORMATION:
423-545-9505  R.MORELAND@SPSONLINE.BIZ
WWW.SPSONLINE.BIZ
Underwater Engineering Services, Inc., (Nuclear Services Div.), Fort Pierce, FL (DM, DR, FP, VR)

**WMG, Inc., Peekskill, NY (FP, IL, LL, WC)**

Waste Control Specialists LLC, Andrews, TX (DR, DL, LC, MD, NR, OF, P, LL, SS, S, T, UT)

WaterWorks America, Inc., Independence, OH (DW, DR, ER, LW, S)


**WMG, Inc., Peekskill, NY (FP, IL, LL, WC)**

Wood, (Environment & Infrastructure Solutions), Grand Junction, CO (ER, SR, UT, VR, WC)

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93900 **Welding Services**—also see **Diving Services**

- A Arc
- AT Automatic Tube & Pipe
- C Canister
- DB Diffusion Bonding
- EM Electromagnetic
- EB Electro Beam
- EX Explosive
- LB Laser Beam
- P Plasma
- RM Remote
- S Stud
- UM Underwater, Manual
- UR Underwater, Remote
- WO Weld Overlays
- WC Weldment Cleaning


- Alaron Nuclear Services, (Veolia ES Alaron, LLC), Wampum, PA (A)
- AVANTech, LLC, Knoxville, TN (A, AT, C, UM)
- AVANTech, LLC, Columbia, SC (A, AT, C, UM)
- BH Energy, Weymouth, MA (A, WO)
- Day & Zimmermann, Philadelphia, PA (A, AT, WO)
- E.S. Fox Limited, Niagara Falls, Ontario, Canada (A, AT)

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93750 **Windows, Radiation-Shielding—also see Maintenance & Repair Services; Shielding Materials**

- LG Lead Glass
- LP Lead Plastics
- Dufrane Nuclear Shielding Inc., Winsted, CT (LG, LP)
- Hot Cell Services Corp., Kent, WA (LG)
- Marshall Radiation Shielding, (Div. of Mert Metal Co.), Burlington, Ontario, Canada (LG, LP)
- Premier Technology, Inc., Blackfoot, ID (LG)

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95850 **Wipers, Wiping Cloths**—also see **Health Physics Equipment & Supplies**

- C Cotton
- CR Clean Room Laundered
- D Disposable, Soluble
- I Industrial
- LF Lint-Free
- OT Oil-Treated Dusting
- T Tacky

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**Radwaste Solutions**

Next Issue: Spring 2023

**Waste Management and Transportation**

Examining the safe management, storage, and treatment of all levels of radioactive waste, along with issues related to shipping nuclear materials.

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A copy of this issue will be included in all attendee and exhibitor registration packets at the annual WM2023 Conference in Phoenix.

**Ad space deadline:** January 20

**Ad material deadline:** January 25

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Current Organization Members as of 8/1/22.
This section lists in alphabetical order the companies represented in Section I of the Buyers Guide, “Products, Materials & Services Directory.” Each listing includes the supplier’s location, sales contact (name), telephone numbers, N Stamp information, and code numbers corresponding to the categories under which each company is listed. When provided by the company, email and/or website addresses are also included. An asterisk (*) appearing at the end of the listing indicates that a full-line product, materials, and/or services catalog is available from the supplier. Those suppliers who have an advertisement in Radwaste Solutions Buyers Guide 2022 are highlighted in yellow. The “Directory of Suppliers” is divided into two parts: Part 1 lists companies located in the United States; Part 2, companies in other countries (page 126).

Part I—Companies located in the United States

Accelerated Decommissioning Partners - ADP
Dallas, TX | https://www.adpnuclear.com/
Curtis Roberts | 202/374-8766
curtis.roberts@orano.group
Codes: 20300, 68000, 87000, 93040

Acromag Inc.
Wixom, MI | www.acromag.com
Karen Haldenwanger | 248/295-0866
khaldenwanger@acromag.com
Stamps: AS9100, ISO9001
Codes: 03200, 09800, 12900, 19700, 25000, 84150*

Adam Brown Consulting, Inc.
Cary, IL
Adam KP Brown | 847/287-2616 | akpbrown@aol.com
Codes: 14000, 40900, 47400, 75190

Advanced Consulting Group, Inc.
Chicago, IL
Tom Litka | 773/481-9500 | advcnsgrp@aol.com
Codes: 03800, 14000, 20300, 72300, 79360, 86300

Advanced Nuclear LLC
East Petersburg, PA | www.advancednuclear.com
James Petrides | 317/947-8167 | 800/487-7255
jpetrides@irexcorp.com
Kevin Fenimore | 706/691-6662 | 800/487-7255
kfenimore@irexcorp.com
Codes: 06790, 11400, 13850, 42100, 74350, 77750

AECON-WACHS (U.S. Div. of Aeon Nuclear)
Jackson, SC | www.aeon-wachs.com
Daniel Kiernan | 704/214-9865
dkiernan@aecon.com
Codes: 13700, 14300, 26900, 27450, 36000, 59000, 59850, 75700, 86100, 90600, 90800, 91380, 92300, 93900, 96200

Aerofin (Sub. of Ampco-Pittsburgh Corp.)
Lynchburg, VA | www.aerofin.com
Dan Posid | 434/582-6220 | 800/237-6346
dposid@aerofin.com
Codes: 83150, 92300*

AeroGo, Inc.
Seattle, WA | www.aerogo.com
Barb Kiliz | 206/575-3344 | 800/426-4757
info@aerogo.com
Stamps: ASME member; ISO 9001:2015; CE compliant
Codes: 68000

Alaron Nuclear Services (Veolia ES Alaron, LLC)
Don Beal | 724/332-7066
don.beal@alaronnuclear.com
David Garber | 724/583-5777 x224
dave.garber@alaronnuclear.com
Codes: 11400, 14300, 20300, 20350, 25600, 26230, 26800, 68950, 84600, 87000, 93040, 93900*

Alison Control Inc.
Fairfield, NJ | www.alisoncontrol.com
Gene E. Benzenberg | 973/575-7100
alisoncontrol@gmail.com
Codes: 03200, 91260*

Allied Power
Baton Rouge, LA | alliedpwr.com
Ron McCall | 225/412-6455 | ron@alliedpwr.com
Codes: 47400

Alpha Spectra, Inc.
Grand Junction, CO | www.alphaspectra.com
Frank Wilkinson | 970/243-4477 | 800/231-2545
fjwxtals@alphaspectra.com
Codes: 17950, 21270, 37130, 55040, 55060

AMEASOL - American Measurement Solutions LLC
Santa Fe, NM | www.ameasol.com
Tony Marlow | 505/699-8923
t.marlow@ameasol.com
Codes: 03800, 04000, 12800, 14000, 17950, 20300, 25250, 26080, 26230, 26970, 30500, 40900, 41015, 44000, 68000, 72300, 73620, 75850, 79360, 84600, 86130, 86300, 93040

American Crane & Equipment Corp.
See advertisement on page 77
Douglassville, PA | www.americancrane.com
610/385-6061 | 877/877-6778
info@americancrane.com
Stamps: NOA-1 Compliant; 10CFR50, Appendix B Compliant.
Codes: 14000, 18590, 18600, 40900, 68000, 72300, 86300

The American Society of Mechanical Engineers issues Certificates of Authorization for use of Code Symbol Stamps (e.g., N, NPT, etc.) to qualified manufacturers and assemblers who intend to construct items in accordance with the requirements of the ASME Boiler and Pressure Vessel Code. Descriptions of the applicable Code Symbol Stamps are included in Sections I, III-Subsection NA, IV, VIII-Division 1, VIII-Division 2, and X, together with the requirements applicable to qualified manufacturers and assemblers.
**AVANTech, LLC**
Columbia, SC | [www.avantechllc.com](http://www.avantechllc.com)
Jim Braun | 803/347-7171 | jbraun@avantechllc.com
Gary Benda | 803/377-1116 | gbenda@avantechllc.com

**Stamps:** ASME U Code Stamp, National Board of Boiler and Pressure Vessel Inspectors R and NB, UL Approved, NOA-1

**Codes:**
04000, 08800, 09950, 10780, 12800, 12900, 13600, 14000, 14300, 19700, 20300, 22410, 22700, 24170, 25250, 25400, 25600, 26240, 27180, 27450, 41700, 47400, 53950, 54750, 55040, 59800, 63400, 64750, 68000, 73620, 74150, 27180, 27450, 37130, 37200, 47400, 67380, 74350, 75600, 77750, 86300, 87000, 91260, 92300, 93040, 93900

**AZIsotopes**
Banker Hill, IN
Clyde Jupiter | 801/381-7949 | cjupiter@azisocorp.com
W. Brandt Brooksby | 503/753-9100 | bbrooksby@azisocorp.com

**Codes:** 68950

**Bakelite Synthetics**
Louisville, KY | [www.bakelite.com](http://www.bakelite.com)

**Product Information** +49 2374 925467

**Codes:**
37200, 86300, 86500*

**Bechtel Nuclear, Security & Environmental**
See advertisement on page 18

Reston, VA | [www.bechtel.com](http://www.bechtel.com)
Tim Carraway | 703/429-6275 | tacarraw@bechtel.com

**Codes:**
14000, 20300

**Berkeley Nucleonics Corp.**
San Rafael, CA | [www.berkeleynucleonics.com](http://www.berkeleynucleonics.com)
Bernadette Jamieson | 415/453-9955 | 800/234-7858 | bernadette@berkeleynucleonics.com

**Stamps:**
American Board of Health Physics
Comprehensive Health Physics Certification, Senior Reactor Operator Certification - PWR Certified
Radiological Shielding Engineer, Registered
Radiation Protection Technologist

**Codes:**
09800, 37200, 41000

**Bevelacqua Resources**
Richland, WA | [www.bevelacquaresources.com](http://www.bevelacquaresources.com)
Dr. Joseph Bevelacqua | 509/628-2240 | bevelresou@aol.com

**Stamps:**
American Board of Health Physics

**Codes:**
03800, 12800, 13850, 14000, 17950, 20300, 37200, 86300, 86500*

**BHA Energy**
Weymouth, MA | [www.bhenergy.com](http://www.bhenergy.com)
Varesha Mauney | 508/591-1149 | 800/225-0385 x1149
marketing@bhenergy.com
Butch Smith | 803/226-0330 | butch.smith@bhenergy.com

**Codes:**
03000, 10780, 11400, 13050, 14000, 20300, 20350, 25250, 25300, 25400, 26100, 26230, 27450, 37130, 37200, 47400, 67380, 74350, 75600, 77750, 86300, 90250, 91260, 93040, 93900*

**Bigge Power Constructors (Affl. of Bigge Crane and Rigging Co.)**
San Leandro, CA | [www.bigge.com](http://www.bigge.com)
Gedge Knopf | 510/638-8100 | 888/337-BIGGE | gknopf@bigge.com
John Simpson | 510/760-9839 | 888/337-BIGGE | jsimpson@bigge.com

**Codes:**
13850, 14000, 18600, 20300, 73570, 87000

**BIRNS, Inc.**
Oxnard, CA | [www.birns.com](http://www.birns.com)
Eric F. Birns | 805/830-5885 | 888/247-6788 | service@birns.com
Laura Powell | 805/830-5869 | 888/247-6788 | lpowell@birns.com

**Stamps:**
ISO 9001:2015; Quality System also complies to the requirements of NRC 10CFR50, App. B

**Codes:**
45550

**Black & Veatch**
Overland Park, KS | [www.bv.com](http://www.bv.com)
Mark Gake | 913/348-7909 | gakema@bv.com

**Codes:**
03800, 12800, 13850, 14000, 20300, 40700, 40900, 47400, 63400, 71190, 77750, 86300

**BNI Industries, Inc.**
Vernon Rockville, CT | [www.bnl.com](http://www.bnl.com)
Christopher Bain | 860/870-6222 | christopher.bain@bnl.com

**Stamps:**
N, NPT, Classes 1, 2, 3

**Codes:**
90330, 90600, 91260, 91380

**Boston Government Services, LLC (BGS)**
Oak Ridge, TN | [www.bgs-llc.com](http://www.bgs-llc.com)
Karen Harris | 865/272-8400 | 865/730-7353 | kharris@bgs-llc.com

**Codes:**
03800, 12800, 13850, 14000, 20300, 25400, 40900, 68000, 71190, 75600, 86300, 86500

**Brokk Inc.**
See advertisement on page 71

**Santa Fe, NM | [www.brokkinc.com](http://www.brokkinc.com)**
Tony Marlow | 505/466-3614 | 800/621-7856 | tony@brokkinc.com

**Stamps:**
Certification by ISO 9001.

**Codes:**
13050, 20300, 20530, 26230, 59850, 68000, 72300, 73620*

**Burns & McDonnell**
Kansas City, MO | [www.burnsmdc.com/nuclear](http://www.burnsmdc.com/nuclear)
Glenn Neises | 816/822-3388 | gneises@burnsmdc.com

**Stamps:**
10CFR50 App. B/NQA-1 QA Program

**Codes:**
03800, 13850, 14000, 20300, 59800, 59800, 75600, 86300, 93040
Radwaste Solutions Buyers Guide 2022
Dufrane Nuclear Shielding Inc.
Winsted, CT | www.dufrane.com
Dan Brooks | 860/379-2318 | dbrooks@dufrane.com
Tim Tarbox | 479/886-0345 | tarbox@dufrane.com
Codes: 03800, 09950, 11650, 13050, 13700, 13850, 14000, 14300, 20300, 37130, 37200, 47400, 55490, 68000, 73570, 75700, 77800, 87000, 95750, 96200*

DW James Consulting
North Oaks, MN | www.dwjames.com
Tom Kalinowski | 651/482-7556 | tkalinowski@dwjames.com
Codes: 14000, 20300, 37200, 68000, 86300, 93040

Ebersen, Inc.
Minneapolis, MN
Chidi N. Anunka | 763/572-2661 | eberson@att.net
Stamps: Certification by ISO 9001:2015, ISO/IEC 17025, 9001 and 17043

Empyrean Services
Sewickley, PA | www.empyreanonline.com
Darrell Williams | 412/923-4050 | dwilliams@empyreanonline.com
Codes: 14000

EFCO USA, Inc.
Charlotte, NC | www.efcousa.com
Christian Mossberg | 704/943-1027 | 800/EFCO-USA sales@efcousa.com
Codes: 00300, 26230, 37600, 84150, 86300, 90320*

E. H. Wachs
Lincolnshire, IL | www.ehwachs.com
Ron Rohrbacher | 847/537-8800 | 800/323-8185 | rohrbracher@ehwachs.com
Codes: 20300, 90100*

Elcometer Education Institute
Warren, MI | www.elcometeredu.com/
Deb Pietz | 248/650-0500 | training@elcometerusa.com
Codes: 86300, 86400, 86500

Elcometer Inc.
Warren, MI | www.elcometerusa.com
Sunny Nietubicz | 248/650-0500 | 800/521-0435 | sales@elcometerusa.com
Codes: 03800, 04000, 10850, 10900, 26080, 56600, 84150*

Electric Motor and Contracting Company Inc.
Chesapeake, VA | www.emc-co.com
Thad Redmond | 757/487-2121 | 800/655-1195 | thad.redmond@emc.co
Codes: 03800, 11400

Electro Static Technology
Mechanic Falls, ME | www.est-aegis.com
Stamps: ASME & B&PV Code Section III, Division 1, Class 2 & 3: N Stamp, NA Stamp, NS Stamp, N1 P1 Stamp; ASME B&PV Code Section VIII, Division 1: U Stamp, UM Stamp; ASME NOA-1; ASME AG-1; IEEE Class 1E; CE Certificate (European Pressure Equipment); CRN Registered (Canada)
Codes: 00400, 03000, 14000, 19450, 27180, 27450, 32520, 37600, 39650, 71500, 77750, 84660, 90250, 92300

Empyrean Services
Sewickley, PA | www.empyreanonline.com
Darrell Williams | 412/923-4050 | dwilliams@empyreanonline.com
Codes: 14000

Encorus Group (dba RJR Engineering, P.C.)
Springville, NY | www.encorus.com
Kevin Opp | 716/592-3980 | kopp@encorus.com
Stamps: NQA-1
Codes: 20300, 26100, 47600, 53950, 74320, 77750, 84660, 90250, 92300

Enercon Services, Inc. (Talisman Div.)
Kennesaw, GA | www.enercon.com
Thomas Magette | 770/934-3101 | 800/241-9460 | mark.capallo@energyandprocess.com
Stamps: QSC-332, MO, Classes 1, 2, 3, MC.
Codes: 03800, 12800, 14000

Energy and Process Corp. (A Ferguson Sub.)
Tucker, GA | www.energyandprocess.com
Terri Reedy | 770/934-3101 | 800/241-9460
Stamps: NOA-1
Codes: 03800, 14000, 26100, 47600, 53950, 74320, 77750, 90320

Energy Resources International Inc.
Washington, DC | www.energysolutions.com
Eileen M. Supko | 703/827-5934 | supko@energysolutions.com
Codes: 03800, 12800, 14000

EnergySolutions LLC
See advertisement on pages 4-5
Salt Lake City, UT | www.energysolutions.com
Mark Walker | 801/649-2000 | mwalker@energysolutions.com
Codes: 03800, 04000, 09800, 09950, 10780, 10850, 14300, 17950, 20300, 20350, 26230, 27450, 30040, 30500, 37200, 41000, 44000, 68000, 77800, 79360, 86300, 87000, 93040

Energy, Technology and Environmental Business Association
Oak Ridge, TN | www.eteba.org
Terri Reedy | 865/649-2302 | territ@eteba.org
Codes: 14000, 86300, 93040

Engineered Rigging
Russellville, AR | www.engineeredrigging.com
Christopher Cox | 219/712-4579 | 844/474-4448 | ccox@engineeredrigging.com
Codes: 13850, 14000, 18600, 25400, 26230

Engineered Rigging
Valparaiso, IN | www.engineeredrigging.com
Christopher Cox | 844/474-4448 | ccox@engineeredrigging.com
Codes: 13850, 14000, 18600, 25400, 26230, 47400, 73570

Engineering Planning and Management, Inc.
Framingham, MA | www.epm-inc.com
Robert Kalantari | 508/532-7128 | rbk@epm-inc.com
Codes: 03800, 12800, 14000, 71190, 86300

DUF–ENG

Radwaste Solutions Buyers Guide 2022
Environmental Alternatives, Inc.
Swaney, NH | www.eai-inc.com
Randy Martin | 603/352-3888 | rmartin@eai-inc.com
Codes: 10780, 14000, 20300, 20350, 37130, 68000, 93040

Environmental Restoration Group, Inc.
Albuquerque, NM | www.ergoffice.com
Chuck Farr | 505/296-4224 | chuckfarr@ergoffice.com
Codes: 09800, 14000, 17950, 20300, 25250, 26080, 26100, 26230, 37130, 37200, 55040

ETAP • Operation Technology, Inc.
Irvine, CA | etap.com
Mary J. Beal | 949/900/1000 | sales@etap.com
Codes: 03800, 12800* F&J SPECIALTY PRODUCTS, INC.
Ocala, FL | www.fjspcality.com
Sales Coordinator | 352/680-1177/1178 | 800/832-5037 | landy@fjspcality.com
Codes: 09800, 27450, 55500, 74150*

Framatome Inc. (North American Headquarters)
Lynchburg, VA | www.framatome.com
Donna Gaddy-Bowen | 434/832-3702
donna.gaddybowen@framatome.com
Codes: 00400, 03000, 02300, 03800, 04000, 08800, 09730, 09750, 09800, 10780, 11400, 11700, 12800, 12900, 13400, 14000, 14300, 18600, 19700, 20350, 21320, 21400, 22410, 25000, 25250, 25350, 25400, 26100, 26230, 26900, 26970, 27450, 30040, 30500, 32250, 37130, 37200, 37600, 39960, 40050, 40900, 41000, 41700, 45550, 47400, 47800, 53950, 54570, 55040, 55560, 55490, 56600, 58000, 59800, 59850, 61570, 64700, 66280, 68950, 71190, 72300, 73200, 73550, 73620, 74150, 74320, 75190, 75600, 75850, 76400, 77600, 77750, 77800, 81680, 83150, 83600, 84150, 84600, 86130, 86250, 86260, 86300, 86400, 86500, 87000, 90250, 90280, 90320, 90600, 90800, 91100, 91260, 91380, 92300, 92800, 93900, 96200*
Free Form Fibers
Saratoga Springs, NY | https://fffibers.com/
Jeff Verivilied | 215/768-4076 | jvervilied@fffibers.com
Codes: 00300, 55490, 77800

Fram Safety Products, Inc.
Nashville, TN | www.frhamsafety.com
Fred Nance | 615/254-0841
fnance@frhamsafety.com
Trip McGuarity | 803/366-5131 | trip@frhamsafety.com
Codes: 03000, 10780, 10850, 10990, 11400, 11650, 25250, 26080, 26100, 26600, 27450, 36000, 37130, 37160, 68000, 73550, 77800, 79370, 83110, 83210, 95850*

Fronk - Anchor Darling Enterprises, Inc. (Sub. of Piping Technology & Products, Inc.)
Laconia, NH | www.fronkekgrp.com
Walter Paszul | 603/528-1931
walter@fronkekgrp.com
Stamps: ASME NS, Class 1, 2, 3; 10CFR50 App. B; ANSI N45.2
Codes: 60100

Frontier Technology Corp.
Xenia, OH | www.frontier-cf252.com
Trevan Janov | 937/376-5691
t.janov@frontier-cf252.com
Codes: 14300, 25600, 68950, 77800*
General Plastics MFG. Co.
Tacoma, WA | https://www.generalplastics.com/
Jaci Hendrics | 253/472-5000 | 800/866-6051
jaci_hendricks@generalplastics.com
Lori Coker | 253/472-5000 | 800/806-6051
lori_coker@generalplastics.com
Stamps: General Plastics is certified to ISO 9001:2015/AS9100D. In addition, we meet such exacting quality systems as: NQA-1; MIL-I-45208A; Boeing Company D6-82479; General Plastics’ extensive quality assurance program satisfies the demanding requirements of the aerospace industry, the Nuclear Regulatory Commission and the U.S. Department of Defense. BMS 8-133 Flame-Retardant Rigid Urethane Foams (core materials); BMS 8-350 Integral Skinning Flexible Urethane Foam and Paint for Molded Products; BMS 8-39 Flexible Urethane Foams. We earned Federal Aviation Agency approval of our burn-test facilities in 2010. General Plastics is ITAR-compliant.
Codes: 39960, 79700, 83210, 86130

Gen IV Nuclear Energy Systems Services
Rockville, MD | www.genivnuclearenergysystems.com
Homi Amir-mokri | 301/202-7311
homi@genivnuclearenergysystems.com
Codes: 03800, 14000, 25400

Gilbert Consulting Services, Inc.
Arroyo Grande, CA | https://www.gsces.com
Keith Gilbert | 805/481-5105 | keith@gsces.com
Codes: 25400

Glenair, Inc.
Wallingford, CT | www.glenair.com
Doug Merriman | 203/741-1115
dmerriman@glenair.com
Codes: 13400

Glidewell Specialties Foundry Co.
Calera, AL | www.glidewell-foundry.com
John Hendrix | 205/668-1881 x3011
jhendrix@glidewell-foundry.com
Mark Fields | 937/287-1845
markfields@glidewell-foundry.com
Stamps: ISO 9000; Bureau Veritas Factory Approval Cert; Lloyd’s Register Factory Approval.
Codes: 14300, 77800*

Global Quality Management Advisors
Lynchburg, VA | www.gqmadvisors.com
Paul W. Gladieux | 503/939-4498
paul@gqmadvisors.com
Codes: 14000

GLSEQ, LLC
Huntsville, AL | www.glseq.com
Jim Gleason | 351/664-3771
jim.gleason@glseq.com
Patrick Gleason | 256/366-8857
pat.gleason@glseq.com
Codes: 12900, 14000, 17950, 20000, 21370, 25250, 32250, 55040, 74320, 84150

GoldSim Technology Group
Seattle, WA | www.goldsim.com
Rick Kossik | 425/295-6985 | rkossik@goldsim.com
Codes: 03800, 14000

Graphic Products
Beaverton, OR | www.graphicproducts.com
Christine Torres | 503/469-3076 | 888/326-9244
cتورres@graphicproducts.com
Codes: 37130

Graver Technologies Inc. (A member of The Marmon Group of Companies)
Glasgow, DE | www.gravertech.com
Lois Windham | 713/208-9292 | 800/249-1990
lwindham@gravertech.com
Codes: 27450

Graver Water Systems, LLC
Warren, NJ | www.graver.com
908/516-1400 | 877/GRAVERW | sales@graver.com
Codes: 27450

Thomas Gray & Associates, Inc. (Owner of Environmental Mgmt. & Controls, Inc.)
Orange, CA | www.tgaiinc.com
Richard E. Gallego | 714/997-8090 | rich@tgaiinc.com
Codes: 04000, 14000, 14300, 25600, 79360, 84600, 86300, 87000, 93040

GSE Absolute (Absolute Consulting)
Columbia, MD | https://www.gses.com/absolute/
Sunny DeMattio | 800/939-8965 | info@gses.com
Billie Jo Parsons | 850/939-8965
billiejo_parsons@gses.com
Codes: 25400

GSE DP (DP Engineering)
Fort Worth, TX | www.gses.com/dp
Sunny DeMattio | 410/970-7800
sunny.demattio@gses.com
Greg Hietpas | 817/710-8470
grég_hietpas@gses.com
Codes: 03800, 13850, 14000

GSE Hyperspring
Columbia, MD | www.gses.com/hyperspring
Sunny DeMattio | 410/970-7800
sunny.demattio@gses.com
Russell E. (Rusty) Dunlap | 410/970-7842
russell.dunlap@gses.com
Codes: 12800, 14000, 25400, 71190, 86300, 86400, 86500

GSE TrueNorth
Montrose, CO
Sunny DeMattio | 410/970-7800
sunny.demattio@gses.com
Gregory Tucker | 970/252-1489
gregory.tucker@gses.com
Codes: 14000

Hayward Tyler
Colchester, VT | www.haywardtyler.com
Jeff Belotti | 802/655-4444 x141
jeffrey.belotti@haywardtyler.com
Stamps: N, NA, NPT, Classes 1, 2 & 3.
Codes: 64700, 64750*

HealthPhysics.com
Amarillo, TX | www.healthphysics.com
Michael Ford | 806/459-9979
michael@healthphysics.com
Codes: 14000

Health Physics Instruments (Div. of Far West Technology, Inc.)
Goleta, CA | www.fwt.com
John Handloser | 805/964-3615 | info@ftw.com
Deborah Thiele | 805/964-3615 | info@ftw.com
Codes: 09800, 17950, 21270, 37200, 47400, 55040

Heat Exchanger Products Corp. (HEPCO)
Hingham, MA | www.heatexchangerproducts.com
Tracy Hennigan Bonnyman | 781/749-0220
800/472-8484 | hepc@heatexchangerproducts.com
Codes: 10780, 20350, 37600, 47400, 61570, 84150

Hennigan Engineering LLC
Hingham, MA | www.henniganengineering.com
Tracy Hennigan Bonnyman | 781/749-0220
800/472-8484 | thb@henniganengineering.com
Stamps: Certification by SSCP-QP1 and QP-2.
Codes: 10780, 11400, 20300, 20350, 37600, 40900, 47400, 56600, 61570, 84600

Hexion Inc.
Columbus, OH | www.hexion.com
Product Information | 614/986-2497 | 888/443-9466
service@hexion.com
Codes: 11400, 14000, 17650
HF Controls Corp. (Sub. of Doosan Heavy Industries & Construction Co., Ltd.)
Carrollton, TX | www.hfcontrols.com
Steve Yang | 214/676-6889 | 866/501-9954
steve.yang@doosan.com
Stamps: 10 CFR 50 App. B; ISO; NQA-1, KINS; and TUV SIL 3
Codes: 03200, 03800, 09750, 12800, 13600, 14000, 18600, 19700, 20000, 41000, 54750, 67380, 76400, 86300

High Bridge Assoc. (Meridian Services Group)
Chattanooga, TN | https://www.hba-inc.com/
Liz Snow | 423/468-4317
Jim O’Connor | 423/468-4317
Codes: 20300*

Highland TEMS, LLC
Marietta, GA | www.highland-temsengineering.com
Ralph Schwartzbeck, P.E. | 404/386-3971
ralph@highland-temsengineering.com
Codes: 14000

Hilman Inc.
Marlboro, NJ | www.hilmanrollers.com
Samantha Reidy | 732/462-6277 | 888/276-5548
sales@hilmanrollers.com
Codes: 47400

HI-Q Environmental Products Co., Inc.
San Diego, CA | www.hi-q.net
Marc A. Held | 858/549-2820 | info@hi-q.net
Codes: 04000, 09950, 26080, 27450, 37130, 37200, 45040, 58000, 68000, 73300, 77750

Hoffa Flow Controls
Elizabeth City, NC | www.hofferflow.com
Janna Critcher | 252/331-1997 | 800/628-4584 | info@hofferflow.com
Codes: 40050

Holtech International
See advertisement on page 91
Cameron, NJ | www.holtechinternational.com
Joy Russell | 856/797-0900 x3655
jrussell@holtech.com
Dr. Rick Springer | 856/797-0900 x3716
springman@holtech.com
Codes: 03800, 14000, 14300, 30500, 66280, 68000, 81710, 93040*

Hopewell Designs, Inc.
Alpharetta, GA | www.hopewelldesigns.com
Kevin Klem | 770/667-5770
sales@hopewelldesigns.com
Ryan Howell | 770/667-5770
ryan.howell@hopewelldesigns.com
Codes: 04000, 09900, 20300, 37130, 37160, 37200, 55490, 68000, 73300, 77750

Hot Cell Services Corp.
Kent, WA | www.hotcell.com
Zbigniew Tomalik | 253/854-4945 x21
zbigniew.g.tomalik@saint-gobain.com
Stamps: ASME NOA-1
Codes: 77750, 95750*

H3D, Inc.
Ann Arbor, MI | h3dgamma.com
Y. Andy Boucher | 734/661-6416
andy@h3dgamma.com
Codes: 17950, 20300, 25250, 55040

HukariAscendent
Wheat Ridge, CO | www.hukari.com
Ken Hukari | 303/384-9079 | 866/487-7628
ken@hukari.com
Codes: 12800, 13850, 14000, 37130, 37200, 55490, 68000, 73300, 77750

Human Resources Consulting
Gallatin, TN | www.yourhrconsultant.com
Gary Kaufman | 615/305-1900
garykaufman@yourhrconsultant.com
Codes: 86300

Huxtable Consulting LLC
Lexington, SC | www.huxtableconsulting.com/
Jason Reynolds | 614/895-0301 | 800/743-6822
jreynolds@intekflow.com
Stamps: ISO 9001:2015 Certified
Codes: 03200, 14000, 17950, 37600, 40050, 47400, 54750*

HydroPro Inc.
Bourbon, MO | www.hpro.com
Stephen Waldron | 573/732-3318 | sales@hpro.com
Codes: 17650, 47400, 59850, 84150, 84600, 86130

iBES - Energy Solutions
McLean, VA | www.ibesesi.com
Marketing Department | 703/818-1894
marketing@ibesesi.com
Global Business Desk | 301/986-5811
Codes: 13850, 14000*

I.C.E. Service Group, Inc.
See advertisement on page 38
Moon Township, PA | www.iceservicegroup.com
Dennis Morgan | 412/916-5710
dmorgan@iceservicegroup.com
Stamps: NOA-1
Codes: 09950, 12800, 14000, 14300, 20300, 25250, 25400, 68000, 87000, 93040*

ILD, Inc.
Baton Rouge, LA | www.ildpower.com
Jack Little | 225/769-2780 x111 | jack@ildpower.com
Codes: 03800, 14000

Imperia Engineering Partners LLC
Bordentown, NJ | www.imperiaep.com
Scot Blvdgett | 855/425-8726
scot.blodgett@imperiaep.com
Codes: 03800, 13850, 14000, 20300, 40900, 75600, 84600

InfoSight Corp.
Chillicothe, OH | www.infosight.com
Becky Dolan | 740/642-3600 | 888/642-3600
bdolan@infosight.com
Codes: 06950, 83110, 83120*

In-Place Machining Company, LLC
Batavia, OH | www.inplace.com
Tim Beckman | 513/388-0199
tbeckman@inplace.com
Chad Danz | 513/388-0199 | cdanz@inplace.com
Codes: 13050, 14000, 20300*

Intek, Inc.
Westerville, OH | www.intekflow.com
Tony Bonina | 614/895-0301 | 800/743-6822
tbonina@intekflow.com
Jason Reynolds | 614/895-0301 | 800/743-6822
jreymonds@intekflow.com
Stamps: ISO 9001:2015 Certified
Codes: 03200, 14000, 17950, 37600, 40050, 47400, 54750*

Interdevelopment, Inc.
Washington, DC | www.interdevelopment.com
M.K. Luddemann-Faris | 202/508-1459
interdevelopment@starpower.net
Codes: 03800, 14000

International Isotopes Idaho Inc. (Sub. of International Isotopes Inc.)
Idaho Falls, ID | www.intisoid.com
Steve Laflin | 208/524-5300 | slaflin@intisoid.com
Codes: 09900, 25600, 40900

I.C.E. Service Group, Inc.
Moon Township, PA | www.iceservicegroup.com
Dennis Morgan | 412/916-5710
dmorgan@iceservicegroup.com
Stamps: NOA-1
Codes: 09950, 12800, 14000, 14300, 20300, 25250, 25400, 68000, 87000, 93040*
InVizion LLC  
Bala Cynwyd, PA | www.invizionllc.com  
Kristy Neckowitz | 484/270-0239  
info@invizionllc.com  

**Codes:**  

**Stamps:**  
Glenn Jorgensen | 201/641-2130 | sales@jnt.bz  
Little Ferry, NJ | www.torq-n-seal.com  

**Codes:**  
12800

ISOFLEX USA  
San Francisco, CA | www.isoflex.com  
Patrick Hardy | 415/440-4433 | 888/399-4433(USA/Canada) | jusa@isoflex.com  
Peter Svendsen | 415/440-4433 | 888/399-4433(USA/Canada) | pgs@isoflex.com  

**Codes:**  
00400, 03800, 55490

ISO-PACIFIC Remediation Technologies, Inc.  
Richland, WA | www.isopacific.net  
Lori Dillon | 509/375-0100 | lori.dillon@isopacific.net  

**Codes:**  
03200, 03800, 09730, 10780, 12800, 14000, 17950, 20300, 21370, 22700, 25600, 26230, 30500, 37130, 37200, 39960, 47400, 53950, 56600, 63400, 64700, 66280, 67380, 68950, 71190, 72300, 73300, 74150, 74320, 77750, 79700, 87400

Jacobi Consulting  
Austin, TX | www.jacobiconsulting.net  
Rick Jacob| 512/656-4765  
rajacob@jacobiconsulting.net  

**Stamps:**  
P.E.; J.D.  

**Codes:**  
14000

Jacobs (CH2M Hill, Inc.), (CH2M Hill Nuclear Business Group), (CH2M Hill International Nuclear Services, Ltd.), (CH2M Hill Constructors, Inc.), (Jacobs), (Jacobs Engineering), (Jacobs Technology), (Jacobs Solutions)  
Dallas, TX | www.jacobs.com  
Dee Gray | 509/942-8580 | dee.gray@jacobs.com  
Jennifer Sen | 919/760-7035  
jennifer.sen@jacobs.com  

**Stamps:**  
American Society of Mechanical Engineers  
Nuclear Quality Assurance (ASME) NQA-1  

**Codes:**  
20700

JNT Technical Services Inc.  
Little Ferry, NJ | www.torq-n-seal.com  
Glenn Jorgensen | 201/641-2130 | sales@nt.bz  

**Stamps:**  
NPT N-2928, Class III: NCA 3800, 10CFR50 App. B & Services LLC  
New Berlin, WI | www.konecranes.com  
Lee Gliddon | 714/761-6760 | 800/447-2633  
lee.gliddon@knowledgerelay.com  

**Stamps:**  
Knowledge Relay  
Cypress, CA | www.knowledgerelay.com  
Lee Gliddon | 714/761-6760 | 800/447-2633  
lee.gliddon@knowledgerelay.com  

**Codes:**  
19700

JRM Chemical Inc.  
Cleveland, OH | www.soilmoist.com  
Scott Wiesler | 216/475-8488 | 800/962-4010  
jrm@en.com

**Stamps:**  
Woman Owned Small Business; ANS Member; SAM Registered  

**Codes:**  
79370*

Kinematic Inc.  
Pasadena, CA | www.kinematicinc.com  
Mauricio Ciudad-Real | 626/795-2220  
mc@kmi.com  

**Codes:**  
03800, 09800, 14000, 76400, 84600, 86300*

Klein Consulting LLC  
Norwich, CT | www.kleinconsultllc.com  
Ralph L. Klein | 860/885-1980  
ralph.klein@kleinconsultllc.com  

**Codes:**  
14000, 40900

Knowledge Relay  
Cypress, CA | www.knowledgerelay.com  
Lee Gliddon | 714/761-6760 | 800/447-2633  
lee.gliddon@knowledgerelay.com  

**Codes:**  
19700

Konaracnes Nuclear Equipment & Services LLC  
New Berlin, WI | www.konaracnes.com  
Steve Lawrence | 626/264-5700  
steve.lawrence@konaracnes.com  

**Stamps:**  
Quality Compliant to ISO 9001, 10CFR50 App. B & NOA-1  

**Codes:**  
09950, 72300, 81680, 81710, 87000*

KROHNE, Inc.  
Beverly, MA | us.krohne.com  
Jeff Shen | 978/535-6660 | 800-FLOWING  
j.shen@krohne.com  

**Codes:**  
03200, 40500

KSB, Inc.  
Henrico, VA | www.ksb.com  
Loyal Fisher | 330/239-3900 | loyal.fischer@ksb.com  

**Stamps:**  
N, NPT, NS, Classes 1, 2, 3, TUV-Pfalz e.V:AD-HPO, TRD 201, TRR 100, DIN EN 729-2; KTA 1408.3, KTA 3201.3; TUV Cert. DIN EN ISO 9001, SLV: DIN 18800 T7; VGB-KTA 1401.  

**Codes:**  
47400, 64700, 64750, 71950, 90250, 90280, 90330, 90600, 91000, 91260, 91380*

LabLogic Systems, Inc.  
Tampa, FL | www.lablogic.com  
Ashwin Boodhun | 813/626-6848 | 800/875-4687  
aaboodhun@lablogic.com  

**Codes:**  
03200, 03800, 04000, 17950, 25250, 55040

Labor Sync  
Dumont, NJ | www.laborsync.com  
Joe Burger | 877/411-5666 | jburger@laborsync.com  

**Codes:**  
12900

Lambda Technologies  
Cincinnati, OH | www.lambdatechs.com  
Julie Prevey | 513/561-0883 | 800/883-0851  
jp@lambdatechs.com  

**Codes:**  
03800, 17650, 44000, 56600, 84600

Lancs Industries  
Albuquerque, NM | www.lancsindustries.com  
Lewis E. Byrd | 505/738-7200  
sales@lancsindustries.com  

**Codes:**  
10900, 73550, 83210*

Leak Testing Specialists, Inc.  
Orlando, FL | leaktestingspecialists.com  
Ashvin Ramos | 407/737-6415  
melissa.ramos@leaktestingspec.com  

**Codes:**  
13850, 14000, 14300

LeBlond and Associates, LLC  
Libertyville, IL | www.leblondassociates.com  
Ralph L. Klein | 860/885-1980  
ralph.klein@leblondassociates.com  

**Codes:**  
10900, 73550, 83210*

Lenox Instrument Co., Inc.  
Trevose, PA | www.lenoxinst.com  
Bill Lang | 215/322-9990 | 800/356-1104  
bill@lenoxinst.com  

**Codes:**  
13800, 26230, 40900, 92800
LGH
Bridgeview, IL | www.rentlgh.com
708/598-4727 | 800/878-7305
rentals@rentlgh.com
Codes: 18600, 26230*

Lightbridge Corp.
Reston, VA | www.litbridge.com
James Fornof | 571/730-1200 | jfornof@litbridge.com
Seth Grae | 571/730-1200 | sgrae@litbridge.com
Codes: 14000

L N D, Inc.
Oceanside, NY | www.lndinc.com
Bill Lehner | 516/678-6141 | info@lndinc.com
Codes: 04000, 17950, 21270, 25000, 26080, 37130, 54750, 55040, 55060, 74150, 93040*

L Rettinger Energy Technology Solutions
Collier Township, PA
Larry Rettinger | 412/279-5221
lrettinger@comcast.net
Codes: 13850, 18600

Lucideum
Durham, NC | www.lucideum.com/nuclear
Mary Beth Sprott | 919/504-4600
marybeth.sprott@lucideum.com
David Barrientos | 919/985-1226
david.barrientos@lucideum.com
Codes: 03800, 14000, 25600, 84600, 93900*

LUDECA, Inc.
Doral, FL | www.ludeca.com
Ron Lambert | 305/591-8935 | sales@ludeca.com
Codes: 03800, 14000, 40050, 47400, 54750

Ludlum Measurements, Inc.
Sweetwater, TX | https://ludlums.com
Allan Hartfield | 325/235-5494 | 800/622-0828
ahartfield@ludlums.com
Codes: 04000, 55040, 55060*

A. C. Macris, Consultants
Mystic, CT | www.themacrisgroup.com
A. C. Macris | 860/572-0043 | acmcpc@acmacris.com
Codes: 14000, 53950, 86300, 86500

Magnatech LLC
East Granby, CT | www.magnatechllc.com
J. G. Emmerson | 860/653-2573 x10
info@magnatechllc.com
Codes: 59850, 83600*

Magnetrol International
Aurora, IL | www.magnetrol.com
M. D. Tikalsky | 630/969-4000 | 800/624-8765
mtikalsky@magnetrol.com
Stamps: Certification by 10CFR50 App. B
Codes: 03200, 40050

Major Tool & Machine, Inc.
See advertisement on page 75
Indianapolis, IN | www.majortool.com
Joel Manship | 317/917-2619
jmanship@majortool.com
Stamps: N-Class 1, 2, 3 & MC Vessels; Class 1, 2 & 3 Piping Systems; Class 2 & 3 Storage Tanks, Class CS Core Support Structures and Class TP Transport Packaging; NPT - Class 1, 2, 3, CS, MC & TP. Fabrication without design responsibility. N3 - Construction of Class TC Transportation Containments. Stamps N, N3, NA, NPT, NS, U, U2 and R. Audited and compliant to NQA-1. Certifications to ISO 9001:2015, AS9100(0), NADCAP.
Codes: 14300, 30500, 36000, 66280, 79360, 83730, 87395, 92300, 93900*

Manafort Brothers Inc.
Plainville, CT | www.manafort.com
Vince Mondo | 660/793-6451
vmondo@manafort.com
Codes: 13850, 20300, 20700

Marshallt Research Laboratories, Inc.
See advertisement on page 80
King, NC | www.marshallonlabs.com
Mac Foster | 336/983-2131 | info@marshallonlabs.com
Codes: 20350

Master-Lee Engineered Products Inc.
Latrobe, PA | www.masterlee.com
John Buchta | 724/805-4905 | 800/537-6007
buchta-jp@masterlee.com
Codes: 10780, 26230, 30500, 45550, 61570, 72300, 90100, 92800*

Materials and Chemistry Laboratory, Inc. (MCLInc)
Oak Ridge, TN | www.mcl-inc.com
Barry Stephenson | 865/276-6910
bstephenson@mcl-inc.com
Codes: 03800, 14000, 37200, 84600

Mazur Instruments
Castle Rock, CO | www.maurinstruments.com
Vince Mazur | 303/325-7463
vince.mazur@mazaurinstruments.com
Codes: 17950

M. Braun Inc.
Stratham, NH | www.mbraun.com
Michael Boutin | 603/773-9333
m.boutin@mbraunusa.com
Codes: 040000, 27450, 32250, 36000, 37130, 40050, 79360, 81680, 84150, 87400

McWane and Assoc.
San Jose, CA | www.materialsite.com
Odell McWane | 559/375-1307
omcwane@materialsite.com
Stamps: Registered Professional Welding Engineer
Codes: 14000

Mega-Tech Services, LLC
Cooksburg, PA | www.mega-techservices.biz
John Bowen | 804/789-1577
jbowen@mega-techservices.biz
Codes: 03800, 13050, 14000, 20300, 20350, 81710

Merrick & Company
Greenwood Village, CO | www.merrick.com
Tony Wampler | (719)/322-6220 | 800/544-1714
tony.wampler@merrick.com
Stamps: ASME NQA-1
Codes: 20300, 30500

MillenniTEK, LLC
Knoxville, TN | www.milleninitek.com
Steve Getley | 865/966-2170
steve.getley@milleninitek.com
Codes: 03800, 13700, 14000, 41200

Miller Pipeline
Indianapolis, IN | www.millerpipeline.com
Chris Schuler | 317/653-5203 | 800/428-3742
chris.schuler@millerpipeline.com
Daniel Watters | 317/653-5298 | 800/428-3742
daniel.watters@millerpipeline.com
Codes: 13850, 40900, 47400

Mirion Technologies (Canberra) Inc.
Meriden, CT | www.mirion.com
203/238-2351 | 800/243-3955
customersupport@canberra.com
Stamps: Certification by ISO 9001.
Codes: 12900, 14000, 19700, 20000, 26230, 37130, 40900, 67380

Mirion Technologies Dosimetry Services
Irvine, CA | www.mirion.com
Dana Banks | (949)/297-1851 | 800/243-3955
dana@mirion.com
Stamps: NVLAP
Codes: 37130, 37200, 55060
Mirion Technologies, Inc.
Atlanta, GA | www.mirion.com
Christy Phillips | 770/432-2344
cphillips@mirion.com
Codes: 03180, 03200, 03800, 04000, 08800, 09750, 09800, 12800, 13400, 21720, 21730, 21310, 26900, 26910, 26970, 47400, 54750, 55040, 58000, 71190, 72300, 73300, 74150, 75190, 75700, 75850, 77750, 83600, 84150, 86400, 90250, 90800, 91260, 92800, 93400, 95300

MIR–NUC *

Mirion Technologies (IST) Corp.
(Sensing Systems Div.)
Horseheads, NY | www.mirion.com
Tim Pelot | 607/562-4530 | tpelot@mirion.com
See advertisement on page 65

Codes: N Classes 1, 2, 3 & MC Vessels, Class 1, 2, 3 Valve Parts & Appurt., Class 1, 2, 3 Valves, Class MC Penetrations & Assem.
Codes: 08800, 17950, 26910, 45550, 54750, 73300, 75190, 83600*

Mohawk Safety
Manchester, CT | www.mohawksafety.com
James W. Francoline | 860/643-5107 | 800/394-6853
Sales at mohawksafety.com
Codes: 10850, 10900, 14300, 17950, 27450, 36000, 37130, 37160, 77800, 83120, 84150, 95850*

Mound Technical Solutions, Inc.
Miamisburg, OH | www.moundtech.com
Doug McCelland | 937/865-3715
doug@moundtech.com
Codes: 04000, 55040, 74150

M2 Polymer Technologies, Inc.
West Dundee, IL | www.m2polymer.com
Martin Matushek | 847/836-1393
info@m2polymer.com
Codes: 20350, 68000, 79360, 79370*

NAC International Inc.
See advertisement on page 96
Peachtree Corners, GA | www.nacintl.com
George Vaughan | 678/328-1222 | 800/241-0507
gvaughan@nacintl.com
Juan Subiry | 678/328-1282 | 800/241-0507
jsubiry@nacintl.com
Codes: 03800, 14000, 14300, 30040, 30500, 68000, 77800, 81710, 86300, 90750

NAC LPT LLC
See advertisement on page 79
Mars, PA | www.naclpt.com
Ken Docchio | 724/991-5583 | 888/484-4031
kdocchio@naclpt.com
Codes: 03800, 09950, 14000, 14300, 20300, 68000

National Technical Systems (NTS)
(Nuclear Engineering & Test Services)
Huntsville, AL | www.nts.com/markets/nuclear
Greg Mason | 256/603-0903 | greg.mason@nts.com
Codes: 03200, 03800, 08800, 09800, 12800, 12900, 14000, 14300, 19790, 20000, 26080, 40050, 40900, 47400, 53950, 54750, 56600, 63400, 76400, 84600, 93040

Navarro Research and Engineering, Inc.
Oak Ridge, TN | www.navarro-inc.com
JoEllen Kuszmaul | 865/220-9650 | 866/681-5265
kuszmaul@navarro-inc.com
Codes: 03800, 14000, 20300, 20700, 25400, 26100, 37200, 93040

Neptune and Company, Inc.
Lakewood, CO | www.neptuneinc.org
Paul Black | 303/956-9867 | 866/681-5265
kuszmaul@navarro-inc.com
Codes: 03800, 12800, 14000, 86300, 93040

Netzsch Instruments North America LLC
Burlington, MA | https://www.netzsch-thermal-analysis.com/us/
Melinda Tucker | 303/895-8175
melinda.tucker@netzsch.com
Anthony Maletta | 781/825-5853
anthony.maletta@netzsch.com
Codes: 03800, 12800, 14000, 86300, 93040

New Millennium Nuclear Technologies International
Lakewood, CO | www.nmnuclear.com
Sue Aggarwal | 303/984-5788
saggarwal@nmnuclear.com
Stamps: Certification by ISO 9001.
Codes: 13050, 20350, 25600, 26100, 93040

New York Blower Company
Willowbrook, IL | www.nybl.com
Catherine Chalakoff | 630/794-5176 | 800/208-7918
rachalakoff@nybl.com
Codes: 03000, 19450*

NextAxiom Technology, Inc.
San Francisco, CA | www.nextaxiom.com
John Manoogian | 415/637-1580
info@nextaxiom.com
Codes: 12800

Nochard, Inc.
Indianapolis, IN | www.nochard.com
Dennis Campbell | 317/613-3046
dennis.campbell@nochard.com
Stamps: SEG Certified Incinerable; NTS, WIPP, Envirocure approved.
Codes: 79370*

Nord–Lock Inc.
Clinton, PA | www.nord-lock.com
Julie Pereyra | 412/279-1149 | 877/799-1097
julie.pereyra@nord-lock.com
Stamps: ISO 9001, ISO 14001, DIN, AS, DIBt, TUV
Codes: 26900, 47400, 86130*

North Wind Group
Idaho Falls, ID | www.northwindgrp.com
Brady Bigelow | 303/263-9201
bbigelow@northwindgrp.com
Andy Williams | 419/707-2135
andy.williams@northwindgrp.com
Codes: 03800, 06790, 09750, 09800, 13850, 20350, 22410, 37130, 37200, 47400, 71190, 86300, 87000*

Nuclear Consultants
Ann Arbor, MI | www.nuclearconsultants.com
Dale Lancaster | 814/574-1912
dale@nuclearconsultants.com
Codes: 03200, 03800, 12800, 14000, 14300, 30040, 77750, 77800, 81680

Nuclear Economics Consulting Group (NECG)
Alexandria, VA | www.nuclear-economics.com
Edward Kee | 202/370-7713
edk@nuclear-economics.com
Codes: 14000

Nuclear News Magazine
La Grange Park, IL | www.ans.org/nn
Rick Michal | 708/579-8216 | 800/NUC-NEWS
nucnews1@ans.org
Codes: 40700

Nuclear Shielding Supplies & Service
Tucson, AZ | www.nuclearshielding.com
M.S. Chopra/Cari Barros | 520/838-0961
info@nuclearshielding.com
Codes: 13700, 14000, 14300, 36900, 55490, 66280, 77750, 77800*

Nuclear Systems Associates, Inc.
Brea, CA | www.nuclearsystems.com
Charles Divona | 949/499-9980
info@nuclearshielding.com
Codes: 14000

Nuclear Training Institute
Norcross, GA | www.nucleartraininginstitute.com
Sean Ruth | 678/268-3364
sean@nucleartraininginstitute.com
Jim Garrison | 678/268-3364
jim@nucleartraininginstitute.com
Stamps: NOA-1
Codes: 14000, 86300, 86400

MIR–NUC *
NUCON International, Inc.
Columbus, OH | www.nucon-int.com
Robert Sommer | 614/846-5710 x125 | 800/992-5192
sales@nucon-int.com
Eric Banks | 614/846-5710 x126 | 800/992-5192
sales@nucon-int.com
Codes: 40400, 40900, 41000, 54750, 56600, 73550, 79370, 86300, 87380, 87400*

Nu-Energy Technologies, Inc.
Providence Forge, VA | www.nu-energytechnologies.com
David Cruise | 804/337-9331
info@nu-energytechnologies.com
Codes: 08800, 10780, 13600, 25600, 45550

NuSource LLC
Alexandria, VA | www.nusourcellc.com
Waylon Waters | 810/223-4483
wwaters@nusourcellc.com
Stamps: ASME N Stamp
Codes: 03000, 03800, 08800, 14000, 14300, 26900, 27180, 27410, 27650, 37600, 47100, 53950, 60100, 66280, 83150, 90600, 90800, 91260, 91380, 92300

NuVision-HWM
Pittsburgh, PA | www.nuvisionengineering.com
Joe Dixon | 651/356-5605 | jdixon@nuvisioneng.com
Codes: 10780, 12800, 47400, 47600, 53950, 68000, 72300, 73300, 73620

NVS/Dade Moeller
Richland, WA | www.nvs.com
Stephen Bump | 509/942-3639
steve.bump@nvs.com
Codes: 03800, 13850, 14000, 20300, 25400, 26100, 37130, 37200, 40900, 54750, 71190, 77750, 84150, 86300, 93040

Off-Site Source Recovery Program
Los Alamos, NM | osp@lanl.gov
Justin Griffin | 505/606-0362 | 877/676-1749
osp@lanl.gov
Codes: 93040

Orano Decommissioning Services
Geoff Wilde | 980/229-2738
gwilde@orano.group
Codes: 20300, 68000, 87000, 93040

Orano Federal Services
Charlotte, NC | www.orano.group/en
Lynn Butler | 704/805-2845
lynn.butler@orano.group
Codes: 13850, 36000

Orano TN
Roger Maggi | 434/841-1859
roger.maggi@orano.group
Codes: 14300, 20300, 68000, 81680, 81710, 87000, 93040

ORTEC
Oak Ridge, TN | www.ortec-online.com
Lena Russell | 865/483-2173 | 800/251-9750
lena.russell@amtek.com
Codes: 03200, 03800, 04000, 09750, 09800, 17950, 19700, 21270, 25000, 25250, 26080, 37130, 55040, 55600, 58000, 63400, 64750, 75850, 77800, 86300*

OTEK Corp.
Tucson, AZ | www.otekopcorp.com
Dr. Otto Fest | 520/748-7900 | sales@otekopcorp.com
Stamps: Class 1E/Appendix B & MIL-Spec Manufacturer
Codes: 17950, 25000, 40050, 53950, 54750, 84150*

Overhoff Technology Corp. (A Div. of US Nuclear Corp.)
Milford, OH | www.overhoff.com
Dell Williamson | 513/248-2400
sales@overhoff.com
Ian Embry | 818/883-7043 | ian@overhoff.com
Codes: 03200, 17950, 21270, 26080, 55040*

Pacific Radiation
Altadena, CA | www.pacificrad.com
Dr. Dan Gollnick | 626/798-8100
dan_gollnick@pacificrad.com
Codes: 86300, 86500

PacTec, Inc.
See advertisement on page 92
Clinton, LA | www.pactecinc.com
Bill Smart | 225/522-8157 | 800/272-2832
billsmart@pactecinc.com
Chase Chabaud | 225-522-8216 | 877/554-2541
chasechabaud@pactecinc.com
Stamps: ISO 9001:2015
Codes: 09950, 14300, 22410, 27450, 37130, 68000, 79360*

Pajarito Scientific Corp. (PSC) (Pajarito Scientific Security Corp.) (PSSC)
Santa Fe, NM | www.pajaritoscientific.com
Michael Pitts | 505/455-8558 | mpitts@pscnda.com
Codes: 03000, 03200, 14000, 17950, 20300, 25300, 27450, 55040, 77800, 93040

Paragon Energy Solutions
See advertisement on page 1
Fort Worth, TX | www.paragones.com
John Portillo | 817/239-1693 | 800/448-4124
jportillo@paragones.com
Stamps: 10CFR50 Appendix B, NQA-1, ASME III N, NS, NPI
Codes: 03000, 03800, 17950, 21270, 22200, 27450, 37600, 40050, 47400, 63400, 64700, 75190, 76400, 83150, 90250, 90600, 90800, 91000, 91260

Par-Kut International, Inc.
Harrison Twp., MI | www.guard-booth.net
Tom Duemling | 586/468-2947 | 800/394-6599
sales@parkut.com
Codes: 75700*

PAR Systems, LLC
Shoreview, MN | www.par.com
Rob Owen | 651/484-7261 | 800/464-1320
rowen@par.com
General Information | info@par.com
Codes: 03800, 08800, 10780, 12800, 14000, 18590, 18600, 20350, 20700, 30500, 39560, 40900, 47400, 47600, 53950, 56600, 66280, 68000, 72300, 73620, 79360, 81710, 84150, 86130, 93900

Paschal Solutions, Inc.
Knoxville, KY | www.paschalsolutions.com
Tracey Henson | 270/705-9037
thenson@paschalsolutions.com
Codes: 03200, 03800, 14000, 20300

Pave Technology Co.
Dayton, OH | www.pavetechnologyco.com
Walter Wood | 937/890-1100 x103
help@pavetechnologyco.com
Codes: 75190, 90100*

Pawling Engineered Products, Inc.
Pawling, NY | www.pawlingep.com
Craig Busby | 845/855-1000 | 800/431-010
cbusby@pawlingep.com
Codes: 75190*

PD Design Group, LLC
Lake Villa, IL | plantdecommissioning.com
Russell Valin | 847/265-8800
russ@plantdecommissioning.com
Codes: 20300, 26240, 47600, 53950, 79360, 86130, 94200
Perma-Fix Environmental Services, Inc.
See advertisement on page 27
Oak Ridge, TN | www.perma-fix.com
Brian Wood | 352/251-2071 | 800/905-0501
bwood@perma-fix.com
Jessie Mcdonald | 865/251-2088 | 800/905-0501
jmcdonald@perma-fix.com
Codes: 09750, 09800, 14000, 17950, 20300, 20350, 20700, 26080, 26100, 26230, 37130, 37200, 41000, 67380, 68000, 93040

Perma-Fix Environmental Services Inc. (Wholly Owned Sub. of Perma-Fix Environmental Services, Inc.)
Richland, WA | www.perma-fix.com
Richard Grondin | 509/375-5160 | rgrondin@perma-fix.com
Codes: 93040

Perma-Fix Environmental Services Inc. (Perma-Fix of Florida) (A Wholly Owned Sub. of Perma-Fix Environmental Services, Inc.)
Gainesville, FL | www.perma-fix.com
Randy Self | 352/395-1368 | rself@perma-fix.com
Codes: 93040

Petersen Inc.
See advertisement on Cover 2
Ogden, UT | www.peterseninc.com
Nick Despain | 801/732-2000 | 800/410-6789
nick.despain@peterseninc.com
Stamp: ASME NQA-1; NBC Subpart H of 10 CFR Part 71; ASME B31.1 and B31.3; API 1104; AWS D1.1, D1.2, D1.3, D1.6; ISO 9001-2018; AS911000; AISC.
Codes: 09730, 14300, 68000, 81680, 83150, 86300, 92300, 96200

PHDS Co.
Knoxville, TN | www.phdsco.com
Ethan Hull | 865/481-3725 | ethanhull@phdsco.com
Codes: 17950, 20300, 21270, 37200, 41015

Pioneer Motor Bearing Co.
Kings-Mountain, NC | www.pioneer1.com
Dr. Lyle Branan | 704/937-7000 | 888/813-9001
eengineering@pioneer1.com
Codes: 03800, 14000, 47400

Plastocor, Inc.
Hingham, MA
Jim Mitchell | 724/942-0582 | jem@plastocor.com
Codes: 11400, 37600, 47400

PMT Nuclear
Woodridge, IL | www.pmntnuclear.com
Charles Wojcik | 630/868-7700 | 800/794-5033
cwojcik@ams-pmt.com
Stamps: PP, R, U.
Codes: 03000, 03800, 13000, 13850, 14000, 19450, 26900, 27180, 27450, 36000, 37000, 40900, 41200, 47400, 59800, 59850, 60100, 71500, 75190, 75700, 77750, 83150, 84600, 86300, 86500, 90250, 92300, 93900

Porvair Filtration Group Inc.
Ashland, VA | www.porvairfiltration.com
Guenter Pesch | 804/550-1600
guenter.pesch@porvairfiltration.com
Codes: 14300, 27450, 32250, 93040

Power & Energy Systems Services
Oradell, NJ
Kamandur Sunder Raj | 201/638-4635
powerenergy@aol.com
Codes: 03800, 12800, 14000, 86300, 86500

Powerfect Service, Inc.
Brick, NJ | www.powerfect.com
Mary Jane Luddy | 732/202-1178
powerfect@verizon.net
Eric Svensson | 732/202-1133 | eric@powerfect.com
Codes: 10780, 14000, 37600, 86300

Power System Sentinel Technologies, LLC
Warrior, AL | www.psstech.com
Chris Melhorn | 205/631-3357
cmelhorn@psstech.com
Stamps: Our Quality Assurance (QA) and Quality Control (QC) programs are standard with all our solutions. Our staff is trained to strict compliance to quality standards in accordance with ASME NQA-1, 10CFR50 Appendix B, and CSA N299.3 criterion. The PSSTech audited and approved Appendix B process ensures rigorous standards are adhered to throughout the design and implementation process.
Codes: 03180, 03800, 64750, 84600, 86300

Precision Custom Components, LLC
See advertisement on page 97
York, PA | www.pcc-york.com
James C. Stouch, P.E. | 717/848-1126 x2362
jstouch@pcc-york.com
Brian Hunt | 717/848-1126 x2592
bhunt@pcc-york.com
Stamps: ASME Sect. III (N, NS, NA, NPT Stamps); ASME Sect. VIII Div. 1, 2 and 3 (U, U2, U3 Stamps); III, NA, NS, NPT; ASME NQA-1 Certificate
Codes: 10850, 10900, 36000, 37130, 64300, 83210, 95850

Preferred Engineering Corp. (Sub. of Preferred Utilities Mfg. Corp.)
Danbury, CT | www.preferredengineering.com
Ivan Cabrera | 203/743-6741
icabrera@preferred-mfg.com
Codes: 03800, 14000, 20350, 30500, 47400, 61570, 75190, 77800

Premier Technology, Inc.
Blackfoot, ID | www.ptius.net
John Davis | 208/681-3005 | jadavis@ptius.net
Derek Moss | 208/851-0744 | dmoss@ptius.net
Stamps: ASME Section VIII, U, R, & S; ASME Section III, NA, NS, NPT; ASME NQA-1 Certificate
Codes: 14300, 36000, 45550, 47400, 53950, 68000, 77800, 81710, 83150, 92300, 93900, 95750

Presray Corp. (Div. of Pawling Corp.) (Critical Containment Solutions)
Wassaic, NY | www.presray.com
Jason Smith | 845/373-6620 | jsmith@presray.com
Kevin Harris | 845/373-6718 | kharris@presray.com
Codes: 75190, 75700

Primm Consulting, LLC
Knoxville, TN | www.primmingllc.com
Trent Primm | 865/805-2130
trentprimm@primmingllc.com
Codes: 12600, 14000

Protective Plastics, Inc.
Greenville, SC
Kim Chasteen | 864/234-6789
protect@verizon.net
Codes: 10850, 10900, 36000, 37130, 64300, 83210, 95850

PROTEM USA
Evergreen, CO | www.protemusa.com
303/598-4868 | a.fournel@protemusa.com
n.reicher@protem-gmbh.de
Stamps: ISO 9001 V2015, CEFR E, EDF UTO 114
Codes: 10780, 22700, 53950, 86300, 93900

PTP Spent Fuel Services, LLC
Grand Island, NY | www.ptpsfs.com
Bill Schaeb | 716/699-5515 | 866/699-5515
ptp@ptpsfs.com
Codes: 14000, 14300, 18600, 20300, 30500, 68000, 81680, 81710, 93040

RADIeCO, Inc.
Plainfield, CT | www.radeacockinc.com
Brad Lovendale | 860/564-1220
blovendale@radeacockinc.com
Codes: 09750, 09800, 26080, 27450, 37130, 37200, 58000, 64750, 73300, 74150, 84150, 90100, 90800

PER–RAD
Radiac Research Corp.
Brooklyn, NY | www.radiacenv.com
John V. Tekin, Jr. | 718/963-2233 x201
jtekin@radiacenv.com
Joseph Spektor | 718/963-2233 x205
jspектор@radiacenv.com
Codes: 14000, 93040

Radiation Control, Inc.
Tallahassee, FL | www.radiationcontrol.com
Walt Cofer | 850/519-5351
radcontrol@embarqmail.com
Codes: 14000, 86300, 86400*

Radiation Safety & Control Services, Inc.
Seabrook, NH | www.radiationcontrol.com
Matthew Whetzel | 603/474-6733 x200
mwhetzel@radiationcontrol.com
Codes: 03180, 04000, 14300, 20300, 37120, 77750, 86300*

Radiological Solutions Inc.
Rockdale, IL | www.radiologicalsolutions.com
Richard Kohlmann | 815/207-4300
rkohlmann@radiologicalsolutions.com
Codes: 04000, 14000, 20350, 26080, 27180, 27450, 37160, 40900, 68950, 86400*

Radium Inc.
Waynesboro, VA | www.radiuminc.com
Cam Abernethy | 540/942-5734
caberne@radiuminc.com
Codes: 10850, 10900, 11650, 12800, 14000, 14300, 25400, 26230, 36000, 37130, 45550, 47600, 72200, 73300, 73550, 73620, 75850, 77750, 77860, 83600, 92800

RadQual, LLC
Idaho Falls, ID | www.radqual.com
Stanley Fabregas | 208/524-5300 | sales@radqual.com
Codes: 68950, 79700*

RadQual, LLC
Idaho Falls, ID | www.radqual.com
Terri Snarr | 208/524-5300 | sales@radqual.com
Codes: 68950, 79700*

Radwaste Solutions Magazine
La Grange Park, IL | www.ans.org/rsm
Tim Greco | 708/670-3085
tgreconline@ans.org
Jeff Moss | 708/579-9225 | 800/682-6397
radwastemag@ans.org
Codes: 40700

Ray Termini & Associates LLC
Wheaton, IL
Ray Termini | 630/818-5707
rayterminijr@gmail.com
Stamps: PMP, Project Management Professional
Codes: 14000

Red Wolf Associates
Cary, NC | www.redwolffassociates.com
Joe Sinodis | 919/467-9686 x120
djoe.sinodis@redwolffassociates.com
Codes: 03800, 12800, 14000, 20300, 37200, 77750, 86300*

Reef Industries, Inc.
San Diego, CA | www.rosys.com
Ray Kaesbauer | 858/565-8500 | sales@rosys.com
Codes: 72300, 73300, 83600

Remote Ocean Systems (ROS)
San Diego, CA | www.rosys.com
Ray Kaesbauer | 858/565-8500 | sales@rosys.com
Codes: 72300, 73300, 83600

RenUke
Oak Ridge, TN | www.renueke.com
Mark Kirsh | 410/991-7628 | mark@renueke.com
Codes: 17950, 37130, 55040, 55060, 67380, 74150, 77860, 81710, 83210, 93040*

RETAQS, Inc.
Blue Bell, PA | www.retaqs.com
Tom Tolimnson | 610/277-8991 x201
tom@retaqs.com
Codes: 14000, 20300, 86300

Rexon Components, Inc.
Beachwood, OH | www.rexon.com
Dr. M.R. Farukhi | 216/292-7373 | sales@rexon.com
Codes: 17950, 37130, 55040, 55060*

R&G Laboratories, Inc.
Tampa, FL | www.randglabs.com
Cheryl Huff | 813/643-3513 | 866/854-1177
cheryl@randglabs.com
Stamps: 10CFR50 App. B QA/QC program, and ISO 17025
Codes: 03800

Rich Industries Inc.
New Philadelphia, OH | www.richindustriesinc.com
David Patterson | 330/339-4113
davepatterson@richindustriesinc.com
Codes: 10850, 10900, 14300, 37130, 64300, 77800, 78700, 83210*

Right Brain Sekurity
Oswego, IL | rbsekurity.com
Roger Johnston | 630/551-0740
rbsekurity@gmail.com
Stamps: CPP
Codes: 03800, 14000, 75600, 75850, 86300

River Technologies, LLC
Forest, VA | www.rivertechnologies.biz
Robert Kozma | 434/525-4734
river@rivertechnologies.biz
Codes: 03000, 10780*

Robatel Technologies, LLC
Roanoke, VA | www.robateltech.com
Jared Bower | 540/989-2878 | 855/819-1874
info@robateltech.com
Stamps: NOA-1, 10 CFR Part 71
Codes: 14000, 14300, 20300, 36000, 47400, 47600, 55490, 68000, 72300, 77750, 77800, 79360, 81710, 83150

Roberts Engineering Services, Inc.
Stuart, FL
C. L. Roberts | 772/220-0584
res1977@bellsouth.net
Codes: 00400, 55490, 86130

Rolls-Royce Nuclear I&C
William J. Rosko | 412/320-3094
william.rosko@rolls-royce.com
Codes: 08800, 09750, 09800, 09899, 14000, 14300, 21270, 25000, 26080, 40050, 41000, 63400, 71190, 84600, 86300, 86400, 93040

Rosemount Nuclear Instruments, Inc.
Chanhasen, MN | www.emerson.com/rosmunenuclear
Chris Vlcek | 952/949-5200 | 800/999-9307
rmi.info@emerson.com
Codes: 03200, 25000, 54750
Rotating Equipment Repair
Suehne, WI | www.rerpump.com
Katie Wilde | 262/844-2025
katie.wilde@rerpump.com
Stamps: NPT, NR, NCA-3800 Material Organization, SHARP
Codes: 64700, 64750

RSO, Inc./Radiation Service Organization
Laurel, MD | www.rsoinc.com
David Wellner | 301/953-2482 | 888/723-5463
radmaterials@rsoinc.com
Steve McDaniel | 301/953-2482 | 888/RAD-LINE
sales@rsoinc.com
Codes: 09800, 10850, 14000, 17950, 20300, 20350, 26100, 26230, 37200, 37130, 40900, 47400, 56600, 67380, 71190, 83110, 83210, 20300, 20350, 26100, 26230, 37130, 37200, 122

Sargent & Lundy
Chicago, IL | www.sargentlundy.com
Thomas J. Behringer | 312/269-7218
tbehringer@sargentlundy.com
Stamps: Sargent & Lundy’s company-wide Quality Management Program is ISO 9001: 2015 certified. Sargent & Lundy’s Nuclear Quality Assurance Program is maintained as a Topical Report that is approved by the U.S. Nuclear Regulatory Commission. It meets Appendix B and NQA-1 requirements and also conforms to the requirements of ASME NQA-1.
Codes: 03800, 09800, 11400, 12800, 14000, 20300, 25400, 30500, 56600, 67380, 71190, 75600, 77750, 84600, 86300, 86500

Schneider Electric Gutor Technologies
Houston, TX | www.gutor.com
Michael May | 865/230-3582 | michael.may@se.com
Codes: 61400*

SCHOTT Electronic Packaging (A Div. of SCHOTT North America, Inc.)
Tonya Durkin | 949/302-5020
tonya.durkin@us.schott.com
Codes: 26910, 26970, 75190, 77800*

Schulze Electric, Timken Power Systems
New Haven, CT | www.schulzelectric.com
Matt Radulski | 203/859-7430 | 800/826-1425
mrad@schulzelectric.com
Codes: 03800, 08800, 14000, 18600, 20350, 37200, 40900, 47400, 56600, 81680, 84150, 84600, 90250, 93900, 95900*

Schutte and Koerting
Trevose, PA | www.s-k.com
Power Sales | 215/639-0900 | sales@s-k.com
Stamps: ASME Section VIII, ANSI B16.34 & B16.5, API 611 & 612, NEEMA SM23/24
Codes: 64750, 90100, 90600, 90800, 91260, 91380*

Seafab Metals Co. (Div. of The Doe Run Co.)
Casa Grande, AZ | www.seafab.com
Joe Snodgrass | 520/732-1715 | 800/426-7082
jsnodgrass@seafab.com
Codes: 14300, 59800, 77800

SecurMAR, LLC
Zionsville, IN | www.securmar.com
Cindy C. Harts | 219/661-8964
chart@securmar.com
Kristin M. Harts | 219/661-8964
kharts@securmar.com
Codes: 14000, 75700, 75850*

S.E. International, Inc.
Summertown, TN | www.seintl.com
Beth Cramer | 931/964-3561 | 800/293-5759
radiationinfo@seintl.com
Codes: 17950, 37130, 55040, 55060*

Sentry Equipment
Oconomowoc, WI | www.sentry-equip.com
Erik Bleske | 262/567-7256
marketing@sentry-equip.com
Codes: 04000, 09800, 17650, 54750, 74150, 74320*

S&G Enterprises, Inc.
Germantown, WI | www.ramflat.com
Mark J. Griffith | 262/251-8300 | 888/726-3528
info@ramflat.com
Codes: 11680, 11700, 68000*

Shiprock Consulting, LLC
Westport, MA
Russell Mellor | 860/573-5521
mellor.russ@gmail.com
Codes: 14000, 20300, 20700, 86300

Sidus Solutions LLC
San Diego, CA | www.sidus-solutions.com
Leonard Pool | 760/573-5523
lid.pool@sidus-solutions.com
Jackie Broussard | 619/275-5533
jkreidler@sidus-solutions.com
Stamps: SDVOSB #: 222120 DVBE: 35907
Codes: 08800, 14000, 45550, 54750, 72300, 73300, 75850, 83600, 92800, 93040*

Sigma Inc.
Charleston, IN | www.sigmappc.com
Martin Wells | 812/256-5265 | 800/210-6907
martin@sigmappc.com
Stamps: Certified Woman Business Enterprise, certified commercial dedication facility.
Codes: 47400, 54750, 84600, 90100, 90250, 90600, 90800, 91000, 91260, 91380

Sigma Science
Albuquerque, NM | www.sigmasci.com
Ann Riedesel | 208/569-6320
ariedesel@sigmasci.com
Codes: 03800, 14000, 93040

Simpson Gumpertz & Heger (SGH)
Chicago, IL | www.sgh.com
Chris Hewitt | 312/754-7466 | cmhewitt@sgh.com
Stamps: ANSI/ASME NQA-1; 10CFR830 Subpart A; 10CFR50 App. B, DOE 0414.1C
Codes: 03800, 14000, 14300, 18590, 18600, 20300, 20700, 26900, 30500, 36000, 36900, 40900, 47400, 54750, 61570, 66280, 76400, 77900, 84600

S&K Logistics Services
Byron, GA | https://www.sklogisticsservices.com/
Swaine Skeen | 797/210-4812 | jskeen@skls-llc.com
Codes: 14000

Skolnik Industries
Chicago, IL | www.skolnik.com
Dean Ricker | 773/735-0700 | 800/441-8780
dean@skolnik.com
Codes: 14300, 68000

Sonic Systems International, Inc.
Houston, TX | www.ssi-group.net
Bill Aston | 281/531-7611 | 800/417-3140
baston@ssi-group.net
Bruce Schlueter | 847/997-2670 | 800/417-3140
bschlueter@ssi-group.net
Codes: 20300, 25400, 30500, 56600*

Southwest Research Institute
San Antonio, TX | www.swri.org
Business Inquiries | 210/522-2122 | ask@swri.org
Codes: 03800, 09800, 11400, 12800, 14000, 25600, 37200, 40900, 56600, 72300, 73620, 75600, 77750, 84600, 93040

SHARP
Sussex, WI | www.rerpump.com
Katie Wilde | 262/844-2025
katie.wilde@rerpump.com
Stamps: NPT, NR, NCA-3800 Material Organization, SHARP
Codes: 64700, 64750
Springs Advanced Technology Group (ATG), LLC
Westminster, CO | www.springsfatbg.com
Michael Wade | 678/428-5278
mikew@springsfatbg.com
Stamps: ASME Certificate of Authorization (U); Boiler and Pressure Vessel Inspectors; ASME NOA-1; ISO 9001:2015 Certification
Codes: 00300, 03000, 14000, 67380

SPX Cooling Technologies, Inc.
Overland Park, KS | www.spxcooling.com
913/664-7400 | 800/462-7539
ci.spxcooling@spx.com

Standish Technologies International
Deerfield Beach, FL | www.standtech.com
Neil Passman | 786/664-6776 | neilp@standtech.com
Codes: 37200

Strategic Packaging Systems
See advertisement on page 104
Madisonville, TN | www.spsonline.biz
Rebekah Moreland | 423/545-9505 | 877/859-4262
r.moreland@spsonline.biz
Codes: 14300, 64300, 68000

Structural Integrity Assc., Inc.
San Jose, CA | www.structint.com
Mike Battaglia | 704/635-0242 | 877/474-7693
mbattaglia@structint.com
Codes: 03800, 40900, 56600, 84600

Studsvik, Inc.
Sandy Springs, GA | https://www.studsvik.com/
what-we-do/waste_mgmt_tech/nuclear-and-radioactive-waste-management/
Bob Manseill | 678/748-6156
bob.manseill@studsvik.com
Codes: 12800, 13850, 14000, 14300, 53950, 87000

Studsvik Scandpower
Wilmington, NC | www.studsvik.com/ssp
W. A. ‘Art’ Wharton | 857/279-2248
art.wharton@studsvik.com
Stamps: ASME NOA-1 Software Development, ISO 9001
Codes: 14000, 30040

Sulzer
Chattanooga, TN | www.sulzer.com
Eric Jenkins | 423/296-1919 | eric.jenkins@sulzer.com
Stamps: ASME & NPI, NACE/NUPIC Audited
Codes: 64700, 75190

Super Radiator Coils
Chaska, MN | www.superradiatorcoils.com
Brian Elliott | 952/466-7116 | 800/394-2645
brian.elliott@superradiatorcoils.com
Stamps: ASME N, NPT & NS (Class 2 & 3); ASME S, U and UM; National Board R; ISO 9000:2015
Codes: 03000, 37600, 92300*

Switchgear Solutions, Inc.
Tucson, AZ | www.switchgearsolutions.com
Tom Scott | 520/622-1294 | 800/349-7947
thomas.scott@switchgearsolutions.com
Codes: 14000, 47400, 84600

System One
Pittsburgh, PA | www.systemone.com
Mark Fenske | 412/995-1912 | 877/505-SYS1(7971)
marketing@systemoneservices.com
Codes: 09750, 13850, 14000, 25400, 40900, 56600, 84600, 86300

Talbert Manufacturing
Rensselaer, IN | https://www.talbertmfg.com
Troy Geisler | 219/866-7141 x231 | 800/348-5232
tgeisler@talbertmfg.com

Talisman Div. of Enercon
Kennesaw, GA | www.enercon.com
Thomas Magette | 770/919-1930
tmagette@enercon.com
Codes: 03800, 14000, 14300, 75850, 86300

T&T Enterprises
Corona, CA | www.ttenerprises.com
Brent Thalasinos | 951/340-0911
tgeisler@talbertmfg.com
Codes: 86260*

Technical Management Services, Inc.
New Hartford, CT | www.tmmscourses.com
Robin Rivard | 860/738-2440
rrivard@tmmscourses.com
Codes: 37200, 86400, 86500

Technisonic Research Inc.
Fairfield, CT
Tony Ruiz | 203/368-3600 | 800/854-7604
tony@technisonic.net
Codes: 56600*

Technology for Energy Corp.
Knoxville, TN | www.tec-usa.com
Donna M. Mullaly | 865/966-5856
donna.mullaly@tec-usa.com
Codes: 03200, 21270, 22200, 40050, 56600, 91260*

Tech Products, Inc.
Staten Island, NY | www.techproducts.com
Daniel O’Connor | 718/442-4900 | 800/221-1311
doconnor@techproducts.com
Codes: 37130, 47630*

TeIC
Duncan, SC | https://www.babcockpower.com/teic/
Jennifer Pasquariello | 508/439-0146
j.pasquariello@babcockpower.com
Codes: 03000, 10780, 12800, 14000, 22700, 47400, 54750, 56600, 61570, 84150, 84600, 91380

Teledyne Brown Engineering, Inc.
See advertisement on page 82
Huntsville, AL | www.rbm.com
Jessica Sanders | 256/726-1385
jessica.sanders@teledyne.com
Codes: 03800, 04000, 08800, 12800, 13400, 14000, 14300, 20300, 26080, 26100, 26910, 32250, 36000, 37200, 37600, 44700, 45400, 54750, 59850, 66280, 73620, 74150, 84150, 84600, 92300, 93040

Teledyne FLIR
Chelmsford, MA | https://www.flir.com/
Teledyne FLIR Sales | 978/769-9333
ugs-chelmsford-sales@teledyneflir.com
Codes: 10780, 40900, 68000, 72300

Telextrix
Pittsburgh, PA | www.telextrix.com
Michael Podobnik | 412/798-3636
marketing@systemoneservices.com
Codes: 86300*

Tetra Tech Inc.
Richland, WA | www.tetratech.com
Warren Baugh | 412/951-3076
warren.baugh@tetratech.com
John Gonsky | 509/372-5814
john.gonsky@tetratech.com
Codes: 47400, 54750, 56600, 67380

37200, 86300

86300*

92300*

37130, 47630*

10780, 40900, 68000, 72300

86300*

123
Thermal Engineering International (TEI)
Cerritos, CA | https://www.babcockpower.com/tei
Jennifer Pasquariello | 508/439-0146
jpasquariello@babcockpower.com
Codes: 03800, 14000, 37600, 47400, 56600, 61570, 73620, 75190, 84600, 86300, 92300

Thermo Scientific - CIDTEC Cameras & Imagers (Part of Thermo Fisher Scientific)
See advertisement on page 107
Liverpool, NY | www.thermofisher.com/cidtec
Tony Chapman | 315/451-9410 | 800/888-8761
sales.cidtec@thermofisher.com
Codes: 40900, 73300, 75850, 83600, 92800*

3 Bears Technical Services, LLC
Hixson, TN | www.3bears.me
Richard Sain | 865/806-1224 | rsain@3bears.me
Codes: 14000, 20300, 93040

TradeWind Services LLC
Richland, WA | Tradewindllc.com
Scott Hertzel | 509/521-3864
scottth@timesoft.com
Codes: 13850, 14000, 25400

Transco Products Inc.
Streator, IL | www.transcoproducts.com
Kevin Hawks | 312/896-8501
kevinh@transcoproducts.com
Codes: 26230, 37130, 93040

TRILLIUM Valves USA
Ipswich, MA | www.trilliumflow.com
Julia Henning | 978/744-5690
julia.henning@trilliumflow.com
Codes: 84150, 90600, 90800, 91000, 91260, 91380*

Tri Nuclear Corp.
Ballston Lake, NY | www.trinuclear.com
Rick Russell | 518/399-1389 | rick@trinuclear.com
Codes: 10780, 27180, 27450, 41700, 72300, 77800, 83150, 90100

Tri-State Motor Transit Co.
Glendale, AZ | https://tristatesecured.com/
Leslie Martin | 4176/212-2224 | 800/234-8768
leslie.martin@roadmastergroup.com
Codes: 86250, 86260, 87000

Tru-Motion Products, LLC
Cheyenne, WY | www.trumotionproducts.com
Anthony Suneson | 704/982-9242
info@trumotionproducts.com
Codes: 47600

Ultra Electronics, Energy
Round Rock, TX | www.ultraelectronicsenergy.com
Robert Carson | 737/231-5485 | 800/880-9333
robert.carson@ultra-nspi.com
Codes: 26970, 37130

Underwater Construction Corp.
See advertisement on Cover 4
Essex, CT | www.ucdiv.com
Philip McDermott | 860/767-8256 | 800/USA-DIVE
pmcdermott@ucdiv.com
Codes: 20300, 22700, 40900, 56600, 66280, 72200, 90100, 92800, 93040*

Underwater Engineering Services, Inc. (Nuclear Services Div.)
Fort Pierce, FL | www.uesi.com
Robert Walcheski | 772/337-3116 | 877/348-3837
rwalcheski@uesi.com
Al Rogers | 772/337-3116 | 877/348-3837
arogers@uesi.com
Stamps: ADCI Certified Commercial Divers, ANSI N45.2.6 Certified Inspections, ANSI N45.2, ANSI N45.2.1B, 10CFR50 App. B, 10CFR Part 21 Acceptance, NQA-1
Codes: 10780, 14000, 20350, 27450, 47400, 79360, 83600, 86300, 93040*

Unique Technical Resources
Wayne, PA | www.uniquevemresources.com
Saeed Savar | 610/304-0904
saeed.savar@uniquevemresources.com
Codes: 03800, 12800, 14000, 18600, 63400, 84600

UniTech Services Group, Inc. (Div. of UniFirst Corp.)
See advertisement on pages 67 and 81
Longmeadow, MA | www.unitechus.com
Gregg Johnstone | 413/543-6911 x146
gjohnstone@unitechus.com
Codes: 10780, 10850, 10900, 14300, 20300, 20350, 25400, 26230, 37130, 37200, 55040, 55060, 60800, 73550, 74150, 86260, 93040, 95850*

US Ecology, Inc.
Livonia, MI | www.usecology.com
Dave Crumrine | 734/521-8032 | 800/592-5489
dave.crumrine@usecology.com
Codes: 20300, 20350, 20700, 47400, 87000

US Nuclear Corp. (Technical Associates Sub.), (Overhoff Technology Corp. Sub.)
Wanda Magill | 818/883-7043
wanda@tech-assoc.com
Codes: 03200, 04000, 09750, 09800, 17950, 21270, 21300, 26080, 37130, 37200, 39960, 55040, 55606, 67380, 74150

Utilities Service Alliance (USA)
Overland Park, KS | www.usainc.org
Jim Kitchens | 913/905-9266 | jkitchens@usainc.org
Codes: 14000

UxC, LLC
Roswell, GA | www.uxc.com
Eric Webb | 770/642-7745 | eric.webb@uxc.com
Codes: 03800, 12800, 14000, 40700, 81680, 81710, 86300*

Valcor Engineering Corp. (Valcor Nuclear Div.)
Springfield, NJ | www.valcor.com
Steve Gatcomb | 973/467-8400 | nuclear@valcor.com
Stamps: N, NPT, Class 1, 2, 3, Certification by ANSI N45.2 App. B 10CFR50 , ISO 9001: HAF 604
Codes: 47400, 84150, 90250, 90600, 90800, 91260*

ValTechcorp, Inc.
Houston, TX | www.valcorp.com
Linda Goodrich | lgoodrich@valcorp.com
Codes: 47400, 90600, 91000, 91260, 91380*

Veolia Nuclear Solutions - Federal Services
Piketon, OH | www.vnsfederalservices.com
Amanda Gilmore | 740/443-7141
amanda.gilmore@vnsfs.com
Codes: 10780, 10850, 10900, 10980, 10878, 13850, 20300, 20350, 20700, 26100, 41700, 46700, 53950, 67380, 68000, 72300, 73620, 79360, 84600, 87380, 87400, 93040

US Ecology, Inc.
Livonia, MI | www.usecology.com
Dave Crumrine | 734/521-8032 | 800/592-5489
dave.crumrine@usecology.com
Codes: 20300, 20350, 20700, 47400, 87000
Volian Enterprises, Inc.
Murrysville, PA | www.volian.com
Harold V. Julian | 724/335-3744
volianenterprises@volian.com
Codes: 03800, 12800, 14000, 41000, 86300, 86500

Wagstaff Applied Technologies
Spokane, WA | www.wagstaffat.com
Dan Payne | 509/321-3184
dan.payne@wagstaff.com
Stamps: ASME U-Stamp, ASME NQA-1 2008 w/2009 addenda
Codes: 14300, 36000, 37600, 53950, 66280, 68000, 77800, 79360, 81710, 83150, 87380, 92300, 93900

Waste Control Specialists LLC
Andrews, TX | www.wcstexas.com
Steve Ferguson | 513/560-1744
sferguson@wcstexas.com
Dan Burns | 214/662-5422 | dburns@wcstexas.com
Codes: 14300, 20300, 25600, 68000, 77800, 79360, 92300, 93900

Waste Control Systems, Inc.
Phoenix, MD | www.wastecontrol.com
William Fannon | 410/252-9360 | 877/252-9360
wfp@wastecontrol.com
Codes: 11700, 14300, 68000

WaterWorks America, Inc.
Independence, OH | www.1water.com
Lynn Altmayer | 440/526-4815
saltmayer@1water.com
Codes: 93040

Watlow
St. Louis, MO | www.watlow.com
Richard Vlah | 314/878-4600 | 800/WATLOW2
rvlah@watlow.com
Codes: 37600, 51730*

Westinghouse Electric Co., LLC
Crabtree Township, PA | www.westinghousenuclear.com
Sharon Coffaro-Vernick | 724.406.4423
sharon.coffaro-vernick@westinghouse.com
Codes: 00400, 03180, 03200, 03800, 08800, 09800, 10780, 12800, 13400, 13650, 14000, 14300, 17950, 18600, 20300, 20350, 37200, 68000, 71190, 77750, 79360, 86300, 86500, 93040*

Worthington Industries
Columbus, OH | www.worthingtonindustries.com
Dave Cline | 614/840-4153 | 800/338-8265
dave.cline@worthingtonindustries.com
Stamps: Worthington has a quality system that is compliant with 10CFR50B, 10CFR71H, and NQA-1.
Codes: 14300, 68000, 83150, 92300*

Yokogawa Corporation of America
Newnan, GA | www.yokogawa.com/us
Clayton Wilson | 678/423-2524 | 800/888-6400
clayton.wilson@yokogawa.com
Codes: 03200, 04000, 25000, 40050, 47400, 54750*

Is your company listed?
If your company was not included in this year’s Radwaste Solutions Buyers Guide, go to www.ans.org/advertising/newrsbg to create a free company listing.
If you think your company previously had a free listing but doesn’t appear in this year’s Buyers Guide, or if you need to update your contact information, email us at advertising@ans.org.
Belgium

Nuclear-21
Waasmunster | www.nuclear-21.net
Luc Van Den Durpel | +32473865647
vddurpel@nuclear-21.net
Codes: 12800, 14000, 20300, 20350, 68950

Saint-Gobain HTMS NV (High Tech Metal Seals)
Mechelen | www.htms.be
Dimitri Van den Broeck | +32 15 22 02 81
dimitri.vandenbroeck@saint-gobain.com
Stamps: ISO 9001, ISO 14001, AS 9100
Codes: 75190

Canada

ATS Industrial Automation, Inc. Nuclear (Canada)
Cambridge, Ontario | https://atsautomation.com/nuclear
Paul McKenna | 519/574-5914
pmckenna@atsautomation.com
Codes: 10780

Bot Engineering Ltd
Cambridgeville, Ontario | www.botengineering.com
David Bot | 905/481-0642 | david.bot@botcorp.com
Alan Bot | 905/876-4301 | alan.bot@botcorp.com
Codes: 04000, 08800, 09750, 12900, 17950, 25000, 25250, 25300, 26080, 55040, 55060

Copperleaf Technologies Inc.
Vancouver, British Columbia | www.copperleaf.com
Laura Ryan | 604/639-9700 | 888/465-5323
lryan@copperleaf.com
Codes: 12800, 14000

Canadian Nuclear Decommission
Catalogue; U.S. Naval Submarine League - Corporate
Codes: 14300, 25400

DB2 Consulting Inc.
Baltimore, Ontario | www.db2consulting.ca
Doug Burton | 289/251-1105
doug@db2consulting.ca
Codes: 14000, 86300

Deep Trekker
Kitchener, Ontario | www.deeptrekker.com
Andrew Lawrence | 519/504-6733
alawrence@deeptrekker.com
Codes: 10780

Eddyfi Technologies
Nanaimo, British Columbia | www.eddyfi.com
250/729-8080 | 877/468-5886 | info@eddyfi.com
Codes: 19700, 26080, 26230, 45550, 56600, 61570, 72300, 74150, 83600, 86130

E.S. Fox Limited
Niagara Falls, Ontario | www.esfox.com
Frank Pepers | 905/354-3700
frank.pepers@esfox.com
Anthony DeChellis | 905/354-3700
anthony.dechellis@esfox.com
Stamps: ASME; Section VIII Div. 1; Section 3 - Class 3; B31.1; B31.3; Z299 (2, 3, 4); ISO 9001:2015; 14001; 45001. ASME N, NPT, NA, NS, PP Certifications. Privately owned.
Codes: 03000, 13850, 14000, 14300, 20300, 37600, 45550, 47400, 56600, 59800, 60100, 73570, 83150, 93900*

FuseRing Inc.
London, Ontario | fusering.com
Paul Cheng | 519/709-2091 | info@fusering.com
Stamps: Canadian Nuclear Decommission
Codes: 14300, 59800, 59850, 93900

FuseRing Inc.
London, Ontario | fusering.com
Paul Cheng | 519/709-2091 | info@fusering.com
Stamps: Canadian Nuclear Decommission
Catalogue; U.S. Naval Submarine League - Corporate
Codes: 14300, 59800, 59850, 93900

Hoskin Scientific
Oakville, Ontario | www.hoskin.ca
Brian Garner | 905/333-5510 | 800/665-5871
bgarner@hoskin.ca
Codes: 03200, 03800, 04000, 08800, 09750, 09800, 12800, 19700, 84150*

Kinectrics Inc.
Toronto, Ontario | www.kinectrics.com
Lori Mignone | 416/207-6000
lori.mignone@kinectrics.com
Codes: 03800, 09800, 12800, 13850, 14000, 20300, 20350, 37200, 44000, 47400, 73620, 76400, 77750, 79370, 84600, 86300, 87000, 87380, 93040

Liburdi Automation Inc.
Dundas, Ontario | www.liburdi.com
Jason Elliott | 905/689-0734 | jelliott@liburdi.com
Stamps: CSA N285
Codes: 03800, 93900

L3Harris (Power Systems and Simulation)
Montreal, Quebec | www.L3Harris.com
Michael Chatlani | 514/787-4999
michael.chatlani@L3Harris.com
Codes: 12800*

MarShield Radiation Shielding (Div. of Mars Metal Co.)
Burlington, Ontario | www.marshield.com
Kevin Milne | 905/637-3862 | 800/381-5335
kmilne@marsmetal.com
Codes: 03200, 03800, 06950, 10900, 14000, 14300, 25600, 30500, 37130, 47400, 53950, 55490, 59800, 77750, 77800, 79360, 95750

Morson International Inc. (Morson Canada)
Toronto, Ontario | www.morsoncanada.com
Neil Smith | 519/546-7735
neil.smith@morsoncanada.com
Eric Goodman | 905/399-3742
eric.goodman@morsoncanada.com
Codes: 14000, 25400
Newman Hattersley Ltd.
Mississauga, Ontario | www.imi-critical.com
Brad Michell | 905/678-1240 x1220
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Stamps: ASME N, NPT, ISO 9001; N285.0; CSA 2299.2, 3, 4
Codes: 90250, 91260, 91380*

Niagara Energy Products (NEP)
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Stamps: NOA-1 Compliant; Nuclear Fabrication & Welding (CSA N285.0/ASME Sec.III); Commercial Fabrication & Welding (CSA B51/W47.1/W59/ASME Sec.III/VIII/B31.1/B31.3); Quality Management System (CSA Z299.1/N299.1); Quality Management System (ISO 9001); Concrete Testing Laboratory (CSA A283 Cat.0)
Codes: 14300, 77800*

Niagara Fasteners Inc.
Niagara Falls, Ontario | www.niagarafasteners.com
Dean Zanio | 905/356-6887 | 800/263-3602
nsales@niagarafasteners.com
Stamps: Certification by CSAN285.0 and CSA Z299.3 & ISO 9000-2015.
Codes: 26900

Power Generation Integrated Consulting Limited (PGICL)
Etobicoke, Ontario | https://www.linkedin.com/in/vinodchugh/
vinod.chugh@pgicl.ca
Stamps: P. Eng. (Canada)
Codes: 14000

Promation Nuclear
Oakville, Ontario | https://www.promation.com/
Anna Masarik | 416/801-2278
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Stamps: CSA N285.0 - Class 1 Pressure Vessels and Fitting and Supports; NCA-3800 Material Organization, CSA B51 (ASME B31.1) and ASME B31.3), CSA B51 Section B Pressure Vessels, CSA B51 Fittings, CSA B51 Repair and Modification of Pressure Vessels and Fitting, Z299.1/N299.1, CSA W47.1 Div.2, CSA W47.2 Div.2, ISO 9001-2015
Codes: 03800, 08800, 09750, 09800, 12800, 14000, 14300, 20350, 53950, 56100, 68950, 72300, 81710, 86310, 93040

Pylon Electronics Inc. (Instrumentation Dept.)
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Lise Leveille | 613/226-7920 | 800/896-4439
instrument@pylonelectronics.com
Codes: 03200, 17950, 55040, 68950, 76400

RadComm Systems Corp.
Oakville, Ontario | www.radcommssystems.com
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REEL COH Inc.
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SDT Ultrasound Solutions
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Ken Mitchell | 905/377-1313 | 800/667-5325
ken.mitchell@sdtdiagnostics.com
Codes: 03800, 21400, 40050, 40900, 47400, 54750, 84600

Sulzer Management Ltd. (Sulzer Pumps (Canada) Inc.)
Burnaby, British Columbia | www.sulzer.com
Dimitri Cepisca | 416/213-8800
dimitri.cepisca@sulzer.com
Stamps: ASME Section III (Cl. 1, 2 & 3); ASME N & NPT certificate of authorization; CSA B51; CSA N285; MIL-Q-9858-A; NDT MPI/LPI/RT/UT); EN 13445; CSA NPT certificate of authorization; CSA B51; CSA N285; CSA N285.0 - Class 1 Pressure Vessels
Codes: 47400, 64700, 64750

Sylvan Automation Ltd.
Oakville, Ontario | www.sylvanautomation.com
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btinkess@sylvanautomation.com
Codes: 13600*

Tap Report
Toronto, Ontario | www.tapreport.io
Steve Buck | 416/702-9093 | 855/727-9388
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Codes: 12800, 40900, 67380, 71190*

Thorburn Flex Inc.
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John Thorburn | 514/695-8710 | 800/363-6613
jthorburn@thorburnflex.com
Stamps: CSA Z299.1/2/3/4; Standard KTA 1401; IAEA 50-C-Q; AVS MIL-Q-9858-A; NDT MPI/LPI/RT/UT); EN 13445; CSA NPT certificate of authorization; CSA B51; CSA N285; CSA N285.0 - Class 1 Pressure Vessels
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Unified Engineering
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METOIL
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SKODA JS a.s.
Pílen, Bolevec | www.skoda-js.cz
David Pavlis | +420 734 261 861 | info@skoda-js.cz
Stamps: Certification by ISO 9001, ISO 14001, ISO 45001, AD-Merkblatt HP0, CEFRI
Codes: 03800, 13050, 14300, 30500, 40900, 47400, 56600, 81710, 84600, 92300, 93900*

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**DEWI Nuclear Decontamination**
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**Stamps:** CSA Z299.1, CSA Z299.2, CSA Z299.3, CSA N285.0, CSA N286.2, ASME N, NPT & NS Stamps, ASME Section III (Including NQA-1), ASME U-Stamp, ASME Section VIII

**Codes:** 03180, 03200, 03800, 10780, 11650, 12800, 12900, 13400, 13600, 13850, 14000, 19700, 20000, 20300, 25000, 30500, 37600, 39960, 40900, 41000, 41700, 47400, 54750, 55040, 56600, 63400, 67380, 71900, 72300, 73300, 73620, 75850, 83600, 84600, 86130, 92800, 93040

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**Codes:** 03000, 03800, 03900, 10780, 11650, 12800, 12900, 13400, 13600, 13850, 14000, 19700, 20000, 20300, 25000, 30500, 37600, 39960, 40900, 41000, 41700, 47400, 54750, 55040, 56600, 63400, 67380, 71900, 72300, 73300, 73620, 75850, 83600, 84600, 86130, 92800, 93040

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Business Developments

Petersen Incorporated has announced that it has signed a definitive agreement to be acquired by Precinmac. Petersen is known for its specialized fabrication, precision machining, and advanced manufacturing. Precinmac manufactures high-tolerance, precision-machined components and assemblies. Precinmac views the acquisition of Petersen as complementary to its 2021 acquisition of Major Tool and Machine.

Republic Services has completed its acquisition of all outstanding shares of US Ecology, expanding the environmental solutions footprint of Republic across the United States and Canada. The transaction involves $75 million to $100 million in cross-selling revenue opportunity between Republic’s $1.5 billion manufacturing portfolio and US Ecology’s $1 billion portfolio. Republic funded the transaction with a combination of credit and a three-year term loan.

Moltex Energy Canada and SNC-Lavalin have announced a strategic partnership with the objective of advancing clean nuclear energy. In the partnership, SNC-Lavalin will support the development and deployment of Moltex’s nuclear technologies. Moltex is developing several nuclear technologies designed to meet Canada’s net-zero commitments. Among these technologies is a stable salt reactor–wasteburner, which uses recycled nuclear waste as fuel, and a waste to stable salt process for recycling nuclear waste.

Zeno Power Systems has selected NAC International to support the packaging and transportation of byproduct strontium-90 capsules, to be used for the development and deployment of Zeno’s waste-to-energy radioisotope power system thermoelectric generators. These generators are designed to enable the lightweight and commercially affordable generation of power in harsh and remote applications, such as those in space or at sea. The Sr-90 capsules will be transported from various sites to Zeno’s fuel source fabrication facility.

Contracts

Pacific Gas and Electric Company has contracted TN Americas, a subsidiary of Orano USA, to offload and transfer used nuclear fuel and greater-than-Class-C (GTCC) radioactive waste from the Diablo Canyon power plant into interim on-site dry storage. The two units of the California nuclear power plant are scheduled to be shut down in 2024 and 2025 (see pages 20-26 for more). Under terms of the contract, TN Americas will implement Orano’s Extended Optimized Storage NUHOMS system, design a new GTCC dry storage facility, fabricate storage canisters, construct and install concrete storage modules, and conduct pool-to-pad transfer operations for the used fuel and GTCC waste.

Framatome has been awarded a contract to provide full-system decontamination at Bruce Power Units 3 and 4 in Tiverton, Ontario. This chemical decontamination, which will be performed prior to refurbishing activities at the units, is scheduled to be carried out at Unit 3 in April 2023 and at Unit 4 in August 2024. The work is expected to add about 30 to 35 years of operational life to the units.

Curio has signed a memorandum of understanding with Energy Northwest to deploy state-of-the-art commercial nuclear fuel recycling facilities in the United States. Under the terms of the MOU, Energy Northwest will be a partner and potential off-taker of products from Curio’s NuCycle nuclear waste recycling process, including low-enriched uranium fuel for currently operating reactors. The NuCycle recycling process can also
yield high-assay low-enriched uranium and transuranic-based TRUfuel for future advanced reactors.

In another MOU, Lightbridge Corporation has agreed to be an industry partner and potential off-taker of products created through Curio’s NuCycle/TRUfuel recycling technology. Lightbridge has expressed interest in using transuranic materials, such as feedstock material, in its metallic fuel rods to power both existing large reactors and future small modular reactors.

In yet another agreement, Curio and NDB have signed a letter of intent regarding NDB’s use of radioisotopes recovered from nuclear waste recycled through Curio’s technology. NDB agreed to use the radioisotopes as the power source for its self-charging nano diamond batteries (from which NDB’s name is derived).

DOE

The Department of Energy’s Office of Environmental Management has awarded a five-year contract to Neptune and Company to support Phase-2 decommissioning decision-making for the West Valley Demonstration Project and Western New York Nuclear Service Center. Neptune is to support the DOE mission at the site in West Valley, N.Y., through the development of probabilistic performance assessment modeling and the statistical decision analysis of proposed decommissioning alternatives.

The Department of Energy’s Office of Environmental Management awarded a contract to CAST Specialty Transportation for the acquisition of Waste Isolation Pilot Plant Transportation Services. The contract, which is designed to support the DOE’s National Transuranic Program to dispose of defense-related transuranic waste, provides facilities, personnel, and equipment to operate a local terminal within a 10-mile perimeter of Carlsbad, N.M., as well as transportation and maintenance services.

Savannah River Alliance. The SRNL RCE is tasked with reducing environmental risk and liability throughout the Department of Energy complex. Its duties include building a network of experts and researchers to support DOE interactions with regulators and community leaders; supporting other DOE missions that involve complex environmental issues; providing counseling to federal, state, and local partners regarding strategies for environmental cleanup; and strengthening community interactions to mitigate stakeholder concerns.

International

Jacobs has signed a five-year framework agreement with Tokyo Electric Power Company (TEPCO) to support decommissioning of the Fukushima Daiiichi nuclear power plant in Japan. Among the program and project management services that Jacobs is to provide to TEPCO’s Fukushima Decontamination and Decommissioning Engineering Company are long-term decommissioning strategy planning, management and implementation of supply chain resources, and program definition for fuel debris retrieval.

The Japan Atomic Energy Agency has awarded a contract to Orano for the transport and treatment in France of 731 used fuel assemblies from Japan’s experimental Fugen advanced thermal reactor. The new contract extends beyond the preparatory

Industry continues
work for transport operations that Orano had been conducting under a 2018 contract. The terms of the new contract include provision of a fleet of transport casks, execution of sea shipments, performance of used fuel treatment and recycling operations at the Orano la Hague site in Normandy, and conditioning of the final waste that will be returned to Japan.

Orano NPS, a nuclear packaging and services firm headquartered in France, has signed a long-term contract with Cyclife, a decommissioning and waste management subsidiary of the EDF Group, to remove 16 used steam generators from an undisclosed nuclear plant in Germany and transport them to EDF Cyclife’s industrial site in Sweden. There, the old generators, each weighing about 330 tons (300 metric tons), will be processed.

France-based Framatome has announced its creation of Framatome Belgium, a wholly owned subsidiary based in Brussels. The subsidiary will specialize in nuclear engineering and services to support Framatome’s life-extension projects, new construction, and dismantling activities for nuclear plants. This work will involve various projects and work sites in Europe.

Framatome has entered a strategic partnership with Inria, the French national institute for research in digital science and technology, in which the two organizations will develop digital solutions to enhance safety and simplify the design, manufacture, operation, maintenance, and decommissioning of nuclear power plants. The partnership will involve such themes as cybersecurity, embedded implementation of complex metamodels, industrial use cases, quantum computing, data science, and artificial intelligence.

The United Kingdom’s Nuclear Decommissioning Authority and the Welsh company Cwmni Egino will collaborate on proposals for a new nuclear development at the Trawsfynydd site in north Wales. The NDA is to share information with Cwmni Egino about available land at the site and about its decommissioning plans for the retired Trawsfynydd Magnox nuclear plant, and it will support Cwmni Egino in developing socioeconomic plans for the site. Cwmni Egino was established by the Welsh government in 2020 to advance new nuclear projects, including SMRs.

Sellafield has selected Jacobs to help deliver the company’s new five-year Integrated Asset Care (IAC) framework at the nuclear site in Cumbria. Jacobs is to be a 50/50 partner with Mitie in the joint venture known as OneAIM. The IAC framework, covering core construction and asset care services, replaces the previous Operation Site Works framework, which had reached its maximum term.

Pipeline Technique Limited, an onshore and offshore infrastructure welding, coating, and fabrication company, has acquired fellow Scottish company Global Project Services (GPS) from the Global Energy Group. GPS focuses on prefabrication; field specialist welding; and mechanical works for the infrastructure, nuclear, liquefied natural gas, hook-up, and decommissioning industries. The acquisition allows Pipeline, which is owned and operated by the international private equity firm Bluewater, to immediately enter the nuclear and decommissioning markets in the United Kingdom and Norway.

A joint venture between Jacobs and Multiconsult Norge AS has been selected by Norwegian Nuclear Decommissioning (NND) to plan the decommissioning of two nuclear research facilities in Norway. The six-year framework contract signed by the companies covers the decommissioning of the nuclear fuel and materials testing reactor at Halden (shut down in 2018) and the JEEP-II neutron scattering facility at Kjeller (shut down in 2019). The contract also includes the upgrading of other existing nuclear and nonnuclear facilities and the engineering concept design and planning of new facilities.

A few weeks after NND made that announcement, the company announced the finalizing of a three-year contract with Westinghouse Electric Company to add its expertise to the decommissioning planning for the Halden and Kjeller research reactors. This contract includes options up to six years.
Products

Automation Products has added the Dynatrol CL-10GH Liquid Level Detector to its Dynatrol line of high-, mid- and low-point level detectors for liquids or slurries. It has no moving parts, floats, diaphragms, or packing glands to deteriorate. The detector provides rugged construction with a sensitive transmission of vibration energy. The Dynatrol CL-10GH Liquid Level Switch is designed for an extended operating life and is available in corrosion resistant coatings.

Engineers with Jacobs have designed a remotely operated robotic device for use at Japan’s Fukushima Daiichi nuclear power plant. The device, controlled by an operator watching video images produced by a built-in camera, will collect pebble-like debris from the bottom of a damaged reactor containment vessel for evaluation. The results will help investigators determine the next steps in the cleanup and decommissioning process. The robotic project is being led by Mitsubishi Heavy Industries, with funding from Japan’s Ministry of Economy, Trade, and Industry.

People

Margaret Cosentino has been appointed as the executive vice president of corporate affairs for Westinghouse Electric Company. In her new position, Cosentino is in charge of Westinghouse’s strategic approach to global government relations; public policy; communications; brand reputation; and environmental, social, and governance issues. Cosentino previously led public policy for Northrop Grumman and global government relations for Arconic.

Cathy Tullis has been named the new chief of staff for the Department of Energy’s Office of Environmental Management. She had been serving as the chief of staff for the National Nuclear Security Administration’s associate administrator for management and budget. Previously, she has held several director positions with the NNSA’s Executive Secretariat, Policy, and Communications and Technology offices, as well as safeguards and security positions in the DOE.

Ray Geimer has been named as the new laboratory manager for Hanford Laboratory Management and Integration following the announced retirement of Don Hardy, who had been with Hanford since 1985. Geimer had most recently been a project manager for the Hanford 100K Area closure operations with Central Plateau Cleanup Company. He has a total of almost 40 years of nuclear operations experience within the complex of the Department of Energy’s Office of Environmental Management.

People continues
Marvin L. Adams was sworn into office in April as the deputy administrator for defense programs of the Department of Energy’s National Nuclear Security Administration. At the time of his confirmation, he was serving on the President’s Council of Advisors on Science and Technology, the Stockpile Assessment Team of the Strategic Advisory Group for U.S. Strategic Command, the National Academies Committee on International Security and Arms Control, and the Predictive Science Panel for Lawrence Livermore and Los Alamos National Laboratories. Adams is a Regent’s Fellow of Texas A&M University; prior to this appointment, he was HTRI Professor of Nuclear Engineering and the director of National Laboratories Mission Support at TAMU.

Fiona Rayment has been named as the new patron of Women in Nuclear UK (WiN UK). Rayment has been serving as the chief science and technology officer at the United Kingdom’s National Nuclear Laboratory. In addition, Ivan Baldwin, head of the U.K. nuclear market for Bechtel, has been named as WiN UK’s new president.

Candu Energy, of the SNC-Lavalin Group, has appointed Stephanie Smith as senior vice president of engineering for SNC-Lavalin’s Canadian nuclear business. Smith replaces Kevin Jones, who retired. One of Smith’s duties is transitioning the nuclear engineering group from an operations-oriented model to a client-service, competitive, growth-oriented culture. She was previously the president and CEO of the CANDU Owners Group, and she held senior positions with Ontario Power Generation.

BWX Technologies has named Sharon H. Smoot president of the company’s Nuclear Operations Group (NOG). This position is responsible for directing NOG’s mission of providing a range of nuclear components and services, such as the manufacture of nuclear reactor components for U.S. Navy submarines and aircraft carriers. Smoot has more than 30 years of experience with the Navy, including most recently serving as executive director for logistics, maintenance, and industrial operations for the Naval Sea Systems Command.

CakeBoxx Technologies, which produces specialized cargo transportation platforms, has named Scott Pugh as the company’s science advisor. In this position, Pugh will provide scientific guidance regarding logistics in the shipment and storage of complex systems, equipment, and materials essential to emerging energy technologies. In his 29-year career with the U.S. Navy, Pugh developed expertise in engineering and physics. Since retirement from active duty, he has worked in energy security with the Department of Homeland Security’s Science and Technology Directorate and other government agencies. ✩
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JANUARY
2022 Review | Future Energy Applications
A look back at NN’s top stories of the year and a look forward at alternative applications for nuclear energy (heat storage, hydrogen, industrial process heat, and more).

FEBRUARY
The Future Workforce
A big challenge facing nuclear is building a workforce to meet the demand for new nuclear projects.

MARCH
Reference Issue | International
The annual reference section compiles data on commercial nuclear plants planned or in operation around the world, and feature articles will dig deeper.

APRIL
Nuclear Technology in Space
A spotlight on nuclear applications for space exploration.

MID-APRIL
54th Annual Buyers Guide
Worldwide products-services-supplier directory. Join our print and interactive online database of more than 600 companies powering the nuclear field.

MAY
Capacity Factors | Grid Reliability
The annual NN review of the U.S. fleet’s capacity factors, and a look at grid reliability as the U.S. transitions to new energy sources.

JUNE
Invested in Nuclear
A surge of federal funding approved in 2022 means new opportunities to sustain and expand the use of clean nuclear energy.

JULY
Instrumentation & Controls | ANS President’s Profile
Highlights the latest developments in I&C. Includes the annual profile of the incoming ANS president.

SPRING
Waste Management and Transportation
Examining the safe management, storage, and treatment of all levels of radioactive waste, along with issues related to shipping nuclear materials.

FALL
D&D and Environmental Remediation | 19th Annual Buyers Guide
The latest in the decontamination and decommissioning of nuclear facilities and the environmental cleanup of legacy waste and contaminated sites.

AUGUST
Supplier Showcase | Thermal Hydraulics
The 29th annual vendor/contractor issue has a new name but still includes BOGO ad space to profile your company and will be the official show issue of the ANS UWC. NN will also cover issues in thermal hydraulics.

SEPTEMBER
Fuel Cycle
A focus on the front-end steps that prepare uranium for use in nuclear reactors and back-end steps to safely manage, prepare, and dispose of used fuel.

OCTOBER
Plant Maintenance | Outage Management
A perennially relevant topic returns, coinciding with the fall outage season.

NOVEMBER
Waste Management
The safe and secure treatment, storage, and disposal of solid and liquid wastes from nuclear operations.

DECEMBER
National Lab Partnerships
U.S. national laboratories take a leading role in public/private partnerships to develop nuclear fission and fusion technology and materials.
October

Oct. 3–6—Experience POWER, Denver, Colo. experience-power.com/

Oct. 4–6—ETEBA Business Opportunities & Technical Conference, Knoxville, Tenn. eteba.org/BOTC/

Oct. 9-13—TopFuel 2022, Raleigh, N.C. ans.org/meetings/topfuel2022/


Oct. 31–Nov. 4—65th Annual Radiobioassay and Radiochemical Measurements Conference (RRMC), Atlanta, Ga. rrmc.co/

November

Nov. 1–3—3rd Annual International Conference on AI, ML and Other Innovative Technologies in the Nuclear Industry, virtual event. cn2-ai-nuclear.com/

Nov. 13–17—2022 ANS Winter Meeting and Technology Expo, Phoenix, Ariz. ans.org/meetings/wm2022/

Nov. 13–17—International High-Level Radioactive Waste Management, Phoenix, Ariz. ans.org/meetings/ihlrwm2022/

Nov. 28–29—7th World Nuclear Industry Congress 2022 (WNIC 2022), London, United Kingdom. szwgroup.com/nuclear-industry-congress-uk/

Nov. 28–Dec. 1—Perma-Fix 18th Annual Nuclear Waste Management Forum, Nashville, Tenn. ir.perma-fix.com/upcoming-events

Nov. 28–Dec. 2—5th International Conference on Nuclear Power Plant Life Management, Vienna, Austria. iaea.org/events/plim-5

Nov. 29–Dec. 1—Twenty-first Annual Intergovernmental Meeting with the U.S. Department of Energy on Nuclear Weapons Waste Cleanup, New Orleans, La. energyca.org/events

January 2023

Jan. 24–26—20th Annual USA Member & Supplier Partner Winter Conference, Savannah, Ga. usainc.org/winter-conference/

February

Feb. 6–9—Conference on Nuclear Training and Education: A Biennial International Forum (CONTE 2023), Amelia Island, Fla. ans.org/meetings/view-conte23/

Feb. 21–23—PowerGen International, Orlando, Fla. powergen.com/welcome

Feb. 26–Mar. 2—WM2023 Symposia, Phoenix, Ariz. wmsym.org/
Our groundbreaking new service that combines all the experience, expertise, and capabilities that you have relied on for over 30 years into a single comprehensive solution.
NUCLEAR DECOMMISSIONING

Deliver Significant Stakeholder Cost and Schedule Savings.

NUCLEAR DIVERS

✓ Safe, Proven, and Repeatable
✓ Regulator Endorsed
✓ Reduced Overall Cost and Schedule
✓ Reduced Overall Program Dose Uptake

NUCLEAR CUSTOMERS - SUCCESS & OUTCOMES

Spent Fuel Pool Furniture Removal, Liner Removal & Concrete Fixative Application

<table>
<thead>
<tr>
<th>NUCLEAR DIVERS</th>
<th>VS</th>
<th>TOPSIDE &amp; ROBOTICS</th>
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<tbody>
<tr>
<td>.9 Rem, Actual and 984 Labor Hours</td>
<td>8.7 Rem Estimated and 9300 Labor Hours</td>
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</table>

Spent Fuel Pool Equipment & Piping Removal & Packaging

<table>
<thead>
<tr>
<th>NUCLEAR DIVERS</th>
<th>VS</th>
<th>TOPSIDE &amp; ROBOTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated 90% Exposure Reduction</td>
<td>20 Rem</td>
<td></td>
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Boiling Water Reactor Suppression Chamber Cleaning & Inspection

<table>
<thead>
<tr>
<th>NUCLEAR DIVERS</th>
<th>VS</th>
<th>ROV</th>
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</thead>
<tbody>
<tr>
<td>De-sludge and Inspection: 9 Days</td>
<td>De-sludge and Inspection: 43 Days</td>
<td></td>
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<tr>
<td>Radiation Exposure: 32mSv</td>
<td>Radiation Exposure 73mSv</td>
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Large Component, BWR Steam Dryer Volume Reduction & Packaging

<table>
<thead>
<tr>
<th>NUCLEAR DIVING</th>
<th>VS</th>
<th>REMOTE TOOLING</th>
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<tbody>
<tr>
<td>Exposure 8 Rem</td>
<td>Actual Exposure: 16 Rem</td>
<td></td>
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Spent Fuel Pond Decommissioning Support for Draining

✓ 75% Reduction in Dose, Extensive Overall Schedule and Cost Reduction compared to Remote/Dry
✓ Spent Fuel Skip Volume Reduction and Packaging 3 per Shift Compared to 1 per week

Get better ROI with a Trusted Nuclear Dive Partner

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