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LA Times

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Waste Facility's Future in Limbo

Magic Valley

April 24, 2016

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A darkened central control room with more than 25 computer screens watches over nearly everything occurring inside this radioactive waste treatment plant west of Idaho Falls.

The room is where employees at the Advanced Mixed Waste Treatment Project, or AMWTP, monitor and manipulate the facility's dangerous waste treatment process from afar. Decades-old metal boxes and drums filled with radioactive waste travel through a series of conveyor belts and elevators.

At various stages the waste is remotely sorted, repackaged, smashed up, and then packaged again. A final product of multiple 55-gallon drums is shipped on trucks to waste repositories located in New Mexico, Nevada and Utah.

The facility — which employs about 700 and has operated for more than a dozen years — is undergoing an approximately \$10 million overhaul. Officials hope the new infrastructure will help finish the job of treating some 65,000 cubic meters of Idaho's transuranic nuclear waste before a looming 2018 deadline.

Meanwhile, U.S. Department of Energy officials are pondering what to do with the specialized plant once its current mission is complete. One tentative post-2018 plan would mean shipping nuclear waste to the Idaho facility from DOE sites spread

Washington, D.C.
For information contact:
lvana@energyca.org

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around the country. The waste would be treated and packaged here, then sent onward to a final resting place outside the state.

“There is no other capability like Advanced Mixed Waste in the DOE complex,” said Dave Richardson, the project’s manager for contractor Idaho Treatment Group. He said its infrastructure is worth about \$1 billion.

“The question is, what do you want to do with this facility?”

Slow treatment process

The AMWTP was built to treat 65,000 cubic meters of transuranic waste that was buried nearby in the Arco desert in the 1970s and '80s. It came from the now-closed Rocky Flats Plant near Denver, where nuclear weapon components were made.

Held in slowly deteriorating metal, wooden and fiberglass boxes and metal drums, the waste includes tools, rags, clothing, sludge and dirt — anything contaminated with a transuranic element, such as plutonium, during the weapon-making process.

Workers at the facility have been chipping away at the massive pile of waste for years. It’s a painfully slow process that since 2011 has been handled by Idaho Treatment Group. This summer a new government contractor, Fluor, will take over management of the job, along with other waste cleanup duties on the desert site.

Richardson said there are about 12,000 cubic meters still to get through. All the waste is supposed to be treated and shipped out of Idaho by the end of 2018 under a state deadline laid out in the 1995 Idaho Settlement Agreement with the DOE.

But the DOE and Idaho Treatment Group have run into recent problems. A New Mexico waste repository where much of the waste needs to be sent remains closed after an accident last year. That means about 20,000 ready-to-ship containers of waste have stacked up, with nowhere to go.

In addition, officials said the plant is starting to get worn down, with more frequent repairs costing time that should've been spent treating waste. Richardson said he brought the problem up with DOE officials last year.

“My point to DOE was, you’ve got to invest some money here, because you’ve got a sprint to the finish line to get to the milestone agreement in December 2018,” Richardson said.

New robotic arms

The biggest upgrade for the facility — costing about \$4 million — is the replacement of two big remote-controlled robotic arms. The arms are operated in adjacent rooms by workers using joysticks. They sort through waste, sometimes chopping it into more manageable pieces, before repackaging it into new containers. The robotic devices were recently shipped to Idaho from the Swedish company Brokk.

The current robotic arms were needing to be fixed more and more, said Mike Auble, a senior project manager overseeing the upgrades. It’s no easy or cheap task when repairs are needed in a highly radioactive area, he said.

Every time one of the robotic arms or another component broke down, a worker would dress up in an astronaut-like protective suit connected to an oxygen line and go into the contaminated area to try and fix the problem. Considering all the safety logistics, Auble said, each entry cost about \$7,000.

Last year there were about 1,000 such entries — \$7 million worth — to fix problems with the robotic arms and other equipment.

A number of other pieces of infrastructure will soon be replaced inside the facility, too, from conveyor belts, to elevators and new hardware and software.

Auble said despite nearing completion of waste treatment, the millions of dollars in upgrades were necessary. The last batch of waste to be treated will be particularly demanding, he said.

Much of the waste still to go is the radioactive remnants of a 1969 fire at Rocky Flats. It includes big chunks of contaminated metals, wood, plastic and other radioactive material.

“While the end is in sight, it is by no means easy,” he said. “This is the hardest waste to process.”

Future mission

Whenever the current pile of radioactive waste is gone, the DOE must decide what to do next with the facility. Considering it is the only plant of its kind in the U.S. — there is a similar version in the United Kingdom — there may be reason to keep it around.

Sinking millions of federal dollars into AMWTP now won’t hurt its long-term prospects, either, something contractor officials are well aware of.

If the facility were to continue treating waste, where would it come from? Mostly the Hanford Site in Washington and Los Alamos National Laboratory in New Mexico, along with lesser amounts from handful of other DOE sites, according to a DOE PowerPoint presentation on the subject. Those two sites have more than 25,000 cubic meters of waste that could be treated at AMWTP, the presentation said, which could keep the facility running for years.

The Idaho Settlement Agreement requires the current transuranic waste to leave the state by the end of 2018. But waste from elsewhere is allowed to enter the state — and long as it is treated and shipped out within one year. Treating waste from DOE sites outside the state has already been done several times at the facility.

There could end up being significant opposition to a life extension for the facility, said Beatrice Brailsford, nuclear program director for the watchdog group Snake River Alliance. Many Idahoans don’t have much trust in the DOE when it comes to

nuclear waste, she said. As an example, she said, spent nuclear fuel shipped here over the years hasn't left

"Fundamentally, I think most people in Idaho are nervous about waste coming in," Brailsford said.

On a recent lobbying trip to Washington, D.C., local mayors and economic development officials encouraged DOE to keep the facility up and running, considering it provides hundreds of local jobs. The Idaho National Laboratory Site Citizens Advisory Board also issued a letter to the department in late 2014, saying it was in favor of keeping the plant running.

"AMWTP has already proven it can be a national asset by receiving and processing transuranic waste from 13 different DOE site offices across the country," the letter said.

Energy Department must respond to MOX lawsuit by May 2

The Post and Courier

April 22, 2016

[LINK](#)

The Department of Energy has until May 2 to respond to South Carolina's multimillion dollar lawsuit against the department concerning a missed milestone at the Savannah River Site's MOX facility.

The facility is designed to meet an agreement with Russia by converting 34 metric tons of weapons-grade plutonium into commercial nuclear fuel.

But the project has suffered cost overruns and delays, including a missed deadline that required the Energy Department to either, by Jan. 1, remove 1 metric ton of the plutonium from the state or process it through the MOX facility. The facility is still being constructed and none of the plutonium intended for the MOX program has been removed from the state.

The penalty for missing the deadline is \$1 million a day with an annual cap of \$100 million, according to a 2003 agreement.

After a month of waiting for the Energy Department to acknowledge the penalty, the state filed a suit on Feb. 9 against Energy Secretary Ernest Moniz and others. The Energy Department has repeatedly refused to comment since the case is still open but is now expected to acknowledge the lawsuit by May 2.

South Carolina is also entrenched in a local battle over the money. On April 18, the state denied a request from the S.C. Regional Development Alliance to intervene on the lawsuit.

The group serves, among others, Barnwell and Allendale counties — two of the three counties that house SRS, and believes the impoverished area's 60-plus year commitment to the site should be considered.

But the state feels differently about it.

"The position of the Alliance is no different than the position of other citizens in the State, and without any real, legally protectable interest to differentiate themselves, intervention must be denied," the state wrote in its response.

Since the request has been denied, the decision is now left up to a judge. There has been no timetable set for when a ruling will be handed down.

Danny Black, the president of the economic group, said the group will continue its fight to intervene.

"We feel that our involvement is necessary to ensure a lasting resolution," Black said, adding that the plutonium is actually stored within a few miles of a 1600-acre Advanced Technology Park owned by the Alliance.

As money battles continue in the state, S.C. congressmen are still trying to remove the MOX project from the chopping block. The federal budget proposal looks to

terminate the project and switch to an alternative that would use SRS facilities to dilute the plutonium, package it, and send it to a federal repository.

The Energy Department believes the method, known as downblending, would be cheaper than MOX. But the state's congressmen, including Republican Sen. Lindsey Graham, have testified that there are too many uncertainties to figure out before a switch can be made.

"If you think you're gonna cancel the MOX program and not have a viable path forward," Graham said during Senate committee meeting earlier this month, "then you're gonna be in for a rude awakening."

Hanford workers pump leaked radioactive waste back into tank

Tri-City Herald

April 21, 2016

[LINK](#)

April Hanford workers succeeded in their first attempt to remove leaked waste from between the shells of Hanford's oldest double-shell tank Thursday.

They pumped some radioactive waste that had leaked out of the inner shell of Tank AY-102 back into the primary tank, following a contingency plan developed months ago with the state of Washington.

Repeated monitoring and inspections have found no evidence that any waste has breached the shell's outer tank to contaminate the environment. The Washington State Department of Ecology has said there is no risk at this time to the public from the leak within the tank.

Workers also resumed on Thursday working toward the main goal — retrieving stored waste from the tank.

Washington River Protection Solutions had been making good progress this spring toward emptying Tank AY-102. The work was required by the state because of an interior tank leak.

The Department of Energy was working to meet the terms of a settlement agreement with the state to empty the waste into another of Hanford's double-shell tanks so the cause of the leak can be investigated. The tank had leaked an estimated 70 gallons of waste from its inner shell into the space between the shells in recent years.

Since March 31, Washington River Protection Solutions had pumped out more than two-thirds of the estimated 151,000 gallons of sludge in the tank, working mostly on weekends when fewer people are at Hanford.

But work stopped after an alarm sounded early Sunday. Significantly more waste had begun leaking from the inner shell, which Hanford and state officials had known was a possibility once pumping of the stored waste began.

Previously, leaked waste from the inner shell had dried in three patches in the space between the two shells, called the annulus. But Sunday the waste in that space continued to rise through the day until it reached about 8.4 inches deep. The annulus is about 30 feet high and about 30 inches wide.

The level of the newly accumulated leaked waste then began to drop, first by about three-quarters of an inch and then more later in the week until the waste in the annulus was about 6.5 inches deep.

As part of preparations to empty Tank AY-102, a pump was installed in the annulus in case the leak worsened.

"We were prepared for this event," Glyn Trenchard, DOE's deputy assistant manager for the tank farms, said in a statement. "Our workforce should be commended for their teamwork and perseverance in safely implementing the contingency plan and procedures, and resuming operations to remove waste from the tank."

Washington River Protection Solutions employees had been working since Monday to prepare to pump the leaked waste from the annulus, including putting radioactive shielding around the line to be used to pump the waste.

Late Thursday morning they started pumping and dropped the waste to about 4 inches — about 1,500 gallons.

Then workers had to stop to replenish the supplied air for their respirators, according to an employee message from Rob Gregory, the Washington River Protection Solutions chief operating officer.

Workers are required to use supplied air because of the risk of chemical vapors from Hanford waste.

As work resumed to retrieve stored waste from the tank Thursday, the level of waste in the annulus again began to rise, as Gregory had predicted it would in a message to employees earlier in the week.

The DOE contractor plans to resume annulus pumping as necessary to keep that waste level as low as possible. The annulus must have at least 5 inches of waste for pumping to start and can be pumped to as low as 2 inches.

When work resumed Thursday to empty the stored waste from the shell, officials estimated that about 46,000 gallons of waste remained, filling the 1-million-gallon capacity tank about 14 inches deep.

In early March most of the liquid waste that sat above the sludge in the tank and helped cool it was pumped into another double-shell tank, which was an easier and quicker task than removing the sludge. In all, 95 percent of the waste in the tank has been removed, according to DOE.

Checks have been made of both the leak detection pit beneath Tank AY-104 and the pH level of the pit's contents, which includes some precipitation, since Sunday.

“Monitoring and inspections show no visual or chemical indications that waste from the tank has leaked into the environment,” DOE said in a statement.

The inner tank sits on a pad-like structure called a refractory that has narrow air channels to help cool the sludge.

Some of the waste in the annulus may be flowing into the channels, accounting for the drop in the depth of waste in the annulus to 6.5 inches, according to Washington River Protection Solutions. The waste also may be being absorbed into the somewhat porous refractory material.

Hanford has 56 million gallons of radioactive waste stored in underground tanks. The waste is left from the past production of plutonium for the nation’s nuclear weapons program.

Work is underway to empty the waste from leak-prone single-shell tanks into double-shell tanks. With Tank AY-102 permanently out of service, Hanford has 27 usable double-shell tanks to store waste until the vitrification plant under construction can glassify it for permanent disposal.

Fusion energy ties Oak Ridge to France

Knox News

April 21, 2016

[LINK](#)

The International Thermonuclear Experimental Reactor, the largest fusion project in history and a stepping stone toward harnessing a long-elusive form of energy production, is under development at Cadarache in the south of France.

That's thousands of miles away, but there is a local connection.

The U.S. involvement in ITER is based at Oak Ridge National Laboratory, and that means that continuing controversies regarding the mega project's lengthening schedule and rising costs have ramifications in Oak Ridge.

There have been threats in recent years to curtail U.S. funding for ITER, at least until fiscal responsibility is demonstrated and other issues are brought under control. But it appears a decision on how to proceed is coming to a head, and May 2 may be the pivotal date.

That's when U.S. Energy Secretary Ernest Moniz is supposed to present a report to key congressional appropriations, with a recommendation on how to proceed.

U.S. Sen. Lamar Alexander, R-Tenn., who chairs the Senate Appropriations energy and water subcommittee, oversaw last week's markup of a \$37.5 billion Energy and Water Appropriations Bill for Fiscal Year 2017, and it contained zero funds for the U.S. to meet its commitments for ITER.

Besides the United States, the international partners are China, the European Union, Russia, India, South Korea and Japan.

Alexander said he was anxious to hear Moniz's views on the fusion experiment.

"We've been hamstrung a little bit over the past couple of years because Secretary Moniz was recused from dealing with it his first two years (because of the nuclear physicist's previous work at the Massachusetts Institute of Technology)."

The senator said, "Ironically, because he knew so much about it, he wasn't able to tell us what he thought."

Alexander said Moniz will help decide "whether we're going to permanently withdraw (from ITER) or proceed in some other way."

Ned Sauthoff, director of the U.S. effort on ITER, said the Oak Ridge-based team has provided "much data" and analysis for the upcoming report.

DOE will also look at an independent review of a plan presented by ITER Director General Bernard Bigot at the November 2015 Council meeting. Bigot reportedly called for development of a realistic schedule and cost for the project moving forward.

A new assessment of the project's management is also to be considered, as well as the results of special meeting of the ITER Council to be held in Paris next week.

But the biggest report will be the one delivered by Moniz on May 2.

Senior Writer Frank Munger may be reached at 865-342-6329 or frank.munger@knoxnews.com.

SRNS works with Augusta University to give IT students real-world experience

WTVM

April 22, 2016

[LINK](#)

Information Technology students at Augusta University are getting some real-world experience thanks to a partnership with Savannah River Nuclear Solutions.

During the spring semester, computer science students at AU take the Senior Capstone Course. During the class, IT professionals from the Savannah River Site work to help prepare students to enter the workforce by having them work on a hands-on, client-based project. Students work in teams of two to four and build software for mock "clients" from SRNS.

"It's tremendous – especially for the Information Technology field," said Dr. Todd Schultz, Professor and Director of Computer & Information Sciences, Augusta University. "The client-based project model can be challenging for professors to simulate in the classroom. You need outsiders to bring in real problems to solve. For it to be successful, the professor has to disengage and allow interactions happen between the student and the client."

The course's Professor, Dr. Onyeka Ezenwoye, schedules three sessions throughout the semester. This year, student teams met with their SRNS "clients" in January to discuss the scope of their projects.

"While working on the project, students may get lost," added Dr. Schultz. "After the students realize they're lost, they can ask for directions to get back on track. Solving problems on their own prepares them for the workplace. I appreciate the IT professionals from SRNS for crafting the project scenarios for the students and interacting with them throughout the semester."

Jim Posnick, Karla Bunch, Tracy Waller, Kent Weymouth, Pamela Fair and Chuck Messick are among SRNS's "clients". Each of them presents to students a scenario based on a real need at the Savannah River Site, which the students are then tasked with solving.

"As clients, we try not to consider how the students will use technology to develop a solution," said Chuck Messick, SRNS Information System Security Officer. "We intentionally provide vague requirements to force discussion and questions so they better understand the problem. Then, we allow them to provide their solution. As mentors, we help along the way with our expertise in application development, cyber security, and functioning as a team. Many times the students are extremely capable technically and work well as team, but need mentorship on communicating with clients, considering cyber security, and fully testing their solution."

Since the partnership between SRNS and Augusta University began, three graduates from the capstone course have gone on to full-time IT jobs at SRNS, and three more are currently working as interns.
