

Hanford contractor honored for worker safety innovation

TRI-CITY HERALD

The Hanford tank farm contractor has been recognized for protecting workers with a tool its workers developed to safely take radiation readings.

Washington River Protection Solutions has been given the Voluntary Protection Program Innovation Award for the tool used to survey long pieces of equipment removed from radioactive waste in underground tanks.

The tool features light-

weight piping with survey points built in to position electronic dosimeters so that radiation levels can be recorded by workers at a safe distance. The tool is moved down the length of the equipment until the survey is completed.

The tool also has cut the time needed to survey equipment in half, the contractor said.

Washington River Protection Solutions also was given the Voluntary Protection Program Star of Excellence

Award for a rate of recordable injuries that are 75 percent lower than the industry average.

The tank farm contractor has had workers exposed to possible chemical vapors over the past year before supplied-air respirators were required for most work, but most of those incidents are not recordable injuries.

The awards were presented at the recent Voluntary Protection Program Participants' Association national conference in Texas.

HANFORD | VIT PLANT

Safety culture improving

U.S. Defense Nuclear Facilities Safety Board hears that change only in early stages, DOE officials say at meeting

ANNETTE CARY

TRI-CITY HERALD

The safety culture at the Hanford vitrification plant is improving, said Department of Energy officials at a public meeting Wednesday evening held by the Defense Nuclear Facilities Safety Board.

But the improvement is in its early stages and could stall if not given continued attention, said Glenn Podonsky, DOE director of the Office of Enterprise

Assessments in Washington, D.C.

"While we have recently seen signs of positive progress there remains a tremendous amount to be done," Podonsky said.

The safety board traveled to Kennewick for an update on progress in improving the safety culture at Hanford.

No action was taken at the meeting attended by more than 150 people because the board failed to have a quorum. Three of the board's five members had planned to attend, but Daniel Santos

was unable to travel for medical reasons, leaving just Sean Sullivan and Jessie Roberson at the meeting.

Podonsky's office, an independent arm of DOE, completed its third assessment this spring of safety culture at the vitrification plant. It became an issue when the safety board concluded in 2011 that DOE and contractor management behavior reinforce a culture deterring the timely reporting, acknowledgment and resolution of technical concerns related to the future safe operation of the plant.

The latest study found improved

Draft report points out 362 issues

Vulnerabilities stated in leaked document could slow down work on several buildings

ANNETTE CARY

TRI-CITY HERALD

There are 362 vulnerabilities in the design of the Hanford vitrification plant's facility to treat low-activity radioactive waste, according to an early draft of the results of an independent review.

The problems could slow down work at the plant to unacceptable levels or delay the start of waste treatment at the plant if not addressed, the report said.

Hanford Challenge obtained a leaked copy of the Depart-

ment of Energy draft report as work on the review continues.

DOE told the state of Washington during discussions on changing deadlines for the vitrification plant that there are no major known technical issues remaining for the plant's Low Activity Waste Facility, according to Hanford Challenge.

"The good news is, DOE commissioned this report. The bad news is they sat on it, all the while saying everything is OK with how they are

WASHINGTON

Attorney general blasts Hanford nuclear cleanup report

DOE told to analyze how it considers, addresses risk of environmental cleanup

ANNETTE CARY

TRI-CITY HERALD

Recommendations on environmental cleanup in a new report to Congress are "misinformed and reckless," said Bob Ferguson, Washington attorney general, in a letter sent to key congressional officials Monday.

His letter followed criticisms Thursday by Washington Gov. Jay Inslee and Oregon Gov. Kate Brown on a report requested by Congress. The Department of Energy was directed to analyze how effectively it considers and addresses risk in environmental cleanup at Hanford and

other nuclear cleanup sites.

The report's conclusion that federal and state cleanup laws "are somehow an impediment to effective cleanup is astonishing," Ferguson said.

"Let me be clear: Removal of these drivers, as recommended by the report, will result in less oversight, less accountability and less cleanup at the most hazardous sites in North America," Ferguson said in his letter to the leaders of the House and Senate Appropriations Subcommittees on Energy and Water Development.

Also troubling is the report's criticism of the state of Washington's use of lawsuits to compel DOE to meet

cleanup deadlines, the letter said.

The report recommends that Congress pass legislation prohibiting the use of consent decrees to enforce deadlines set in the Tri-Party Agreement. Disputes over missed deadlines or other requirements would be decided by a panel of independent experts established by the federal government.

The increasing use of court litigation and legally binding consent decrees to enforce missed deadlines, particularly at Hanford, skews cleanup priorities by requiring limited funds be spent on the requirements and deadlines chosen by states, regardless of the risk posed

and competing needs nationally, the report said.

"Although we have frequently negotiated and re-negotiated deadlines and milestones, Energy has made litigation an unfortunate necessity by failing to comply with its obligations and refusing to be accountable for failures," Ferguson said.

He pointed out that the state is in court because DOE is unable to meet deadlines it agreed to in a 2010 consent decree to resolve a 2008 lawsuit brought by the state over missed deadlines. DOE knew it would miss deadlines just months after the consent decree was negotiated, Ferguson said.

"The report's recommendation to remove the litigation option from states is the wrong approach," Fer-

guson said in the letter. "Doing so would further injure states like Washington that have already been forced to shoulder far more than our fair share of the nation's nuclear legacy."

Congress ordered the new report in language attached to the spending bill for the current fiscal year. DOE asked the Consortium for Risk Evaluation With Stakeholder Participation to organize a review committee to prepare the report.

The review committee has indicated it will listen to comments and questions, including from Congress, and then make a response.

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Hanford comment period extended

Hanford agencies have extended the comment period for Tri-Party Agreement changes related to solid radioactive waste by more than a month.

Comments now must be submitted by Sept. 25. They may be emailed to Kristen. Skopecck@rl.doe.gov.

The proposed changes affect the schedule for retrieving, characterizing and shipping stored solid waste. The waste includes low level radioactive waste that will be permanently buried at a lined disposal facility at Hanford, and waste contaminated with plutonium that will be sent to a national repository, the Waste Isolation Pilot Plant in New Mexico.

The proposed changes place more emphasis on treating and repackaging waste that has been dug up and is stored above ground in drums and boxes until Hanford waste can be sent to the national repository. The repository has been closed since February 2014.

The Department of Energy still would be required to meet a 2030 deadline to have waste contaminated with plutonium now stored at Hanford shipped to the repository.

Washington Closure finalist for award

10 SEP
15

Washington Closure Hanford is one of three finalists for the Project Management Institute's 2015 Project of the Year for its decade-long effort to clean up the Hanford nuclear reservation along the Columbia River.

The winner will be announced next month. Other finalists are an Oregon project to overhaul bridges and a California project to transport massive oil refinery coke drums.

The work along the Columbia River at Hanford was done under a \$1.9 billion Department of Energy contract and included removing 10 million tons of contaminated soil and debris as of 2014.

"It came in under budget, saving taxpayers \$227 million, while helping to transform a toxic legacy of war into scenic beauty for future (access) to all," said the write up in Project Management Institute Network magazine.

Facility nearly ready to start coming down

Buildings could begin demolition in spring 2016

ANNETTE CARY
TRI-CITY HERALD

What may be the most hazardous facility ever to be taken down by the Department of Energy in the United States could be ready for the start of demolition at Hanford in a matter of months.

The goal is to start tearing down the main processing buildings of the Hanford Plutonium Finishing Plant in the coming spring to meet a legal deadline to have the plant razed to the ground by September 2016.

The Department of Energy is at risk of missing that deadline, but work is moving forward safely to try to meet it, said Stephanie Schleif, the new facilities transition project manager for the Washington Department of Ecology.

The state is thrilled with progress, said Jane Hedges, Washington's nuclear waste program manager.

"You can't imagine how difficult this work is," said Doug Shoop, DOE deputy site manager for the Rich-

land Operations Office.

Shoop called it DOE's most hazardous facility to be demolished during a recent meeting of the Hanford Advisory Board in Pasco.

Work has been under way to clean out the plant since the 1990s, when efforts began to stabilize liquid plutonium left there at the end of the Cold War.

In recent years, workers have been cleaning out and removing tanks and contaminated glove boxes in the plant.

To date, 95 percent of the large pieces of equipment, including glove boxes and laboratory vent hoods, have been removed. That includes the heavily contaminated glove boxes that were the site of the explosion in 1976 that contaminated worker Harold McCluskey, who came to be known as the Atomic Man.

"We have been profoundly impressed with what has been accomplished by the work force," said Pam Larsen, a member of the Hanford Advisory Board.

The board sent a letter of congratulations Friday to DOE, thanking workers past and present who have

HANFORD | TANK FARMS

Washington files lawsuit over vapors

Union, watchdog also sue for more worker protection

ANNETTE CARY
TRI-CITY HERALD

The state of Washington filed a lawsuit Wednesday against the Department of Energy and its Hanford tank farm contractor, seeking better chemical vapor protection for workers.

Local Union 598, which represents Hanford pipefitters and welders, and Hanford Challenge, a Seattle-based

advocacy group for Hanford workers, also filed a lawsuit in federal court.

DOE has known that workers have been exposed since the late 1980s to chemical vapors from waste in Hanford's underground tanks, the state said in its lawsuit.

Since then, 19 reports have been written and at least 120 workers have been exposed, but "we are right back where we started in the 1980s," said Bob Ferguson, the state attorney gen-

eral. "Enough is enough."

He was joined at a Seattle news conference Wednesday by representatives of Hanford Challenge, Local 598 and former workers, like Steve Lewis, who said they had been sickened by tank vapors.

Lewis, an electrician who was exposed to vapors in 2002, said he experienced inflamed skin and continual congestion in his throat from chemical burns. Others have had more serious health effects, he said.

See **VAPORS** | Page A9



Washington Attorney General Bob Ferguson holds up 19 reports and studies done on worker exposure to chemical vapors from waste held in Hanford tanks. He announced a new lawsuit at a Seattle news conference Wednesday.

Associated Press

9 SEP 05

State ready to cross off part of hazardous list

Cleanup of 1100 Area completed under Superfund effort in 1996

ANNETTE CARY
TRI-CITY HERALD

The state of Washington is proposing removing a part of Hanford from its list of hazardous sites for the first time.

"This is the final step for the earliest and easiest piece of Hanford," said John Price, the Tri-Party Agreement section manager for the state.

It includes land many may not realize was once used as part of the nuclear reservation,

which produced plutonium for the nation's nuclear weapons program from World War II through the Cold War.

The Hanford 1100 Area covers 1.2 square miles, including land in north Richland along the west side of Stevens Drive from its intersection with Snyder Street north almost to the George Washington Way intersection. The area, which also includes some property on the Arid Lands Ecology Reserve, was once used for vehicle maintenance and general support of Hanford.

Cleanup on the 1100 Area was among the earliest done and was completed under the federal Superfund program in 1996. It has been deleted from the U.S. Environmental Protection

Agency's National Priority List.

Gone are pits used for disposal of battery acid, paints and antifreeze, plus underground tanks holding antifreeze, gasoline and oil.

But the state did not follow the federal lead in 1996 and remove it from its list of hazardous sites because of contaminated groundwater at a landfill north of Horn Rapids Road.

The 50-acre Horn Rapids Landfill was used from the 1940s to 1970 for wastes from offices, construction and septic tanks and for fly ash, asbestos, solvents and PCBs.

Nineteen years after active cleanup of the 1100 Area has been completed, monitoring shows the contaminant concentrations in groundwater at the landfill have dropped be-

low levels requiring cleanup, according to the state.

It is considering removing it from the state-wide list of hundreds of hazardous sites, ranging from places across the state where fuel has spilled or leaked to many other areas of Hanford with radioactive and hazardous chemical contamination.

The public may submit comments on the proposed removal until Oct. 16. Send them to Price by email to hanford@ecy.wa.gov or by mail to Department of Ecology, 3100 Port of Benton Blvd., Richland, WA 99354.

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New DOE cleanup leader looks to robotics to keep next generation of workers safe

The DOE Office of Science is spearheading an effort using its budget to look at what DOE's cleanup needs are so the Office of Science can develop programs to address them, she said.

In a broader effort, the DOE Office of Environmental Management, headed by Regalbuto, has joined the National Robotics Initiative, led by the White House.

"It's a multiagency effort, but we all have similar issues," she said. When the robotics initiative was started in 2011, one of its goals was to help astronauts in dangerous and expensive missions.

Just like astronauts wearing heavy suits and relying on air supplies, tank farm workers at Hanford now carry heavy supplied air canisters and rely on them to breathe, she said.

"Our main goal is to improve safety, improve the safety of the worker, but also to improve the safety of the facility," she said.

One of her stops during two and half days at Hanford was the HAMMER training facility, where she watched workers training to use supplied air respirators by playing miniature golf in the cumbersome gear.

Much of her visit focused on the work at

ture technology needs as the nation faces 50 years of work to complete cleanup. The remaining work across the complex is the most difficult, Regalbuto said.

"Our goal is to use technology to allow us to reduce the cost so we can get through our mission more quickly and more expeditiously," she said.

Technology development also is an opportunity to bring the next generation of workers into DOE projects as national laboratories and cleanup contractors face a wave of workers ready for retirement, she said.

Young people will understand why cleanup is important work and why they should be excited about working on it, she said.

Some of the technology development is being done in coordination with other DOE offices.

What do an astronaut and a Hanford tank farm worker have in common?

Both have to wear heavy equipment and must breathe in an artificial atmosphere, said Monica Regalbuto at the conclusion of her first visit to Hanford last week as the newly confirmed head of environmental cleanup at Department of Energy sites.

She talked about her interest in developing technology — including technology that might be helpful for NASA and for Hanford — during brief remarks at a meeting of the Hanford Advisory Board and in an interview with the Herald.

DOE used to have a significant technology development program, which led to breakthroughs that have contributed to environmental cleanup, Regalbuto said.

But as cleanup projects reached the point where work could be done, technology development decreased.

"Our investments from the past, we are cashing in on," she said.

Now Energy Secretary Ernest Moniz and his advisory board are looking ahead to fu-

New president named for contractor

ANNETTE CARY

TRI-CITY HERALD

The chief operating officer for the Hanford tank farm contractor, Washington River Protection Solutions, has been named president of the company.

Mark Lindholm will replace Dave Olson, who announced his retirement Thursday after 30 years with AECOM and AECOM's predecessor companies. AECOM is the majority owner of the tank farm contractor after acquiring URS.

"Dave has been an outstanding leader for WRPS and their tank farm operations," said Kevin Smith, manager of the Department of Energy Office of River Protection, in a statement. "I have nothing but praise for his dedication and professionalism and I wish him the absolute best."

Olson, who has led WRPS since the summer of 2013, sent employees a message saying he was retiring with mixed emotions.

"Our team remains one of the safest I have been a part of, with one of the best



Lindholm

safety records in the complex," he told employees. "The Voluntary Protection Program Star certification last year was affirmation that others outside of Hanford view it the same way."

Tank farm workers know the meaning of teamwork, he said.

"A large influx of new employees recently joined our ranks, and we have benefited from the infusion of new energy, new ideas and new approaches to our business, while continuing those programs that have been successful," he said.

He called work at the Hanford tank farms, where 56 million gallons of radioactive and hazardous chemical waste are stored in underground tanks, "one of the most important environmental cleanup programs in the world."

"Working together with the Department of Energy and the state Department of Ecology, this team has put in place the vision, the strategies, the projects and the

people that will help us achieve long-term mission success," he said. "Know that I have been blessed to have been a small part of these successes."

Lindholm, who has 30 years of experience in government nuclear facilities operations, will take over leadership of WRPS on Oct. 1. He has been the chief operating officer for WRPS since January, concentrating on production operations, waste retrievals, small projects execution and capital projects, including the associated engineering functions.

Before that he was the manager of commissioning, readiness and operations at Hanford's vitrification plant, leading a team of nearly 300 AECOM employees. He also served as executive vice president and chief operating officer at the Idaho Cleanup Project from 2010-12.

He also served as a manager of single-shell tank waste retrieval from 2008-10.

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2015

Helicopter conducting Hanford surveys several times daily

A helicopter that has been flying low over the Columbia River several times a day is conducting work on a Hanford project, according to the Department of Energy.

The flights, which circle over the Columbia River four to six times each day, are expected to continue until about Oct. 1.

A radiological survey is being conducted from the air on waste burial grounds in central Hanford as one step toward developing an environmental cleanup plan.

Hanford contractors have previously used helicopters to collect data on the extent of radiological contamination more efficiently than having crews walk the land.

The helicopter flies over the Columbia River between the blue bridge and Bateman Island to take measurements of background levels of radiation at the beginning and end of each flight over central Hanford burial grounds.

Simpson is optimistic

Chairman of House subcommittee says budget will be OK

ANNETTE CARY

TRI-CITY HERALD

The Hanford nuclear reservation budget will be OK for the fiscal year that starts next week, predicted Rep. Mike Simpson, R-Idaho, who expects to enter negotiations with his Senate colleagues soon on the funding bill that includes the Department of Energy.

Simpson, chairman of the House Appropriations Subcommittee on Energy and Water Development, which has jurisdiction over Hanford, visited the Tri-Cities this week for updates on Hanford as the guest of Rep. Dan Newhouse, R-Wash.

"We have got to get this right," Simpson said about Hanford cleanup. "I've told



Simpson

people for 20 years now if we end up contaminating the Columbia River, we can kiss nuclear power goodbye."

Hanford produced plutonium for the nation's nuclear weapons program at nine reactors during the Cold War.

Simpson is familiar with issues not only from past visits to Hanford, but also because his hometown of Idaho Falls has similar issues. The Tri-Cities and Idaho Falls are home to workers at both a DOE nuclear environmental cleanup project and a DOE national laboratory.

This week he met with members of a Hanford working group established by Newhouse, Hanford contractor officials and DOE Hanford officials about the challenges

23 SEP 15

GAO denies protest of contract

DOE will move forward with Wastren Advantage

ANNETTE CARY

TRI-CITY HERALD

The Government Accountability Office has denied a protest of the choice of a new contractor to provide analytic laboratory services at the Hanford 222-S Laboratory.

The Department of Energy announced Thursday that it would begin the transition to the new contractor, Wastren Advantage of Piketon, Ohio. The transition should be completed on Nov. 21.

The protest had been filed by Advanced Technologies and Laboratories International, which has held the contract since early 2005.

DOE awarded the contract, valued at about \$44.6 million, to Wastren in May. It includes a three-year base period with the option of a two-year extension.

Advanced Technologies and Laboratories filed protest documents in June and again in August. The protest information is covered by a protected order and a redacted version

has yet to be made public.

Protests may be filed for a range of reasons. They include how DOE evaluated safety and health, technical and management approach, experience and past performance, key personnel and cost of proposals.

The new contract allows DOE to shift cost risk from the taxpayer to the new contractor, DOE said in a statement.

The 222-S Laboratory is a 70,000-square-foot facility that handles highly radioactive samples to conduct organic, inorganic and radio-chemistry analyses. The new contract is expected to cover 15,000 to 25,000 analyses annually.

Many of the samples come from Hanford's underground tanks, which hold high-level radioactive waste left from the past production of plutonium for the nation's weapons program.

Information is used to determine what wastes can be combined in tanks and to help plan how workers can best be protected while working at specif-

ic tanks.

The lab has 11 hot cells, where workers operate handling equipment from outside the cells and look through thick leaded glass to work with waste samples within the hot cell.

Wastren already has a presence at Hanford. It is the managing partner of WAI Stoller Disposal Operations, a subcontractor to Washington Closure Hanford. The subcontractor manages and operates the Environmental Restoration Disposal Facility, a huge landfill in central Hanford for low-level radioactive and hazardous chemical waste.

Advanced Technologies and Laboratories, under the leadership of Jou Hwang at the 222-S Laboratory, earned four consecutive DOE Voluntary Protection Program Star of Excellence Awards, which recognize facilities with outstanding occupational safety and health management systems.

When Hanford contractors change, staff typically transfer from the old contractor to the new contractor, which brings in its own management team.

26 SEP 15

DOE to investigate past contractor

ANNETTE CARY

TRI-CITY HERALD

The Department of Energy's Office of Enforcement plans to investigate allegations that Hanford workers were put at risk because of a defective electronic medical record system.

It also has notified Computer Sciences Corp., the owner of Hanford's former occupational medicine services provider, that it is considering enforcement action for retaliation against two former workers who raised the concerns.

Computer Sciences Corp. declined to comment after DOE made its plans public Friday afternoon.

In August 2012, two employees of Computer Sciences Corp. reported that the medical record system at AdvanceMed Hanford, then the occupational medicine contractor, was not accurately tracking medical restrictions, according to the Occupational Safety and Health Administration.

It created the potential for workers to be exposed to beryllium despite medical restrictions that should have protected them, according to OSHA. Beryllium can cause an incurable lung disease in people who breathe in fine particles of the metal if they have a genetic, allergy-like sensitivity to it.

If a blood test indicates that a Hanford worker has had an abnormal im-

mune system reaction to beryllium, they are restricted from working in certain areas to prevent further exposure that could increase their risk of developing chronic beryllium disease.

After an inspection by the Department of Energy into the concerns of the two employees, they were laid off, OSHA said. OSHA did not name them, but said they were information technology specialists working on the software.

In late 2014, OSHA ordered Computer Sciences Corp. to pay back wages of \$186,000 to the two former employees after finding the company was in violation of whistleblower laws.

Computer Sciences Corp. dis-

agreed with the OSHA finding and appealed.

DOE's Office of Enforcement said in a letter sent this week to Computer Sciences Corp. that it considered the OSHA determination evidence of whistleblower violations.

Computer Sciences Corp. held the Hanford contract for occupational medicine services from 2004 through September 2012. HPM Corp. then was awarded the contract, retaining Computer Sciences Corp. as a subcontractor.

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26 SEP 10 Helicopters to map Hanford waste

ANNETTE CARY

TRI-CITY HERALD

Helicopter flights over Hanford this month are expected to provide a detailed map of where radioactive waste and contamination lie in the center of the nuclear reservation.

The helicopter is equipped with sensors to measure levels of radiation and distinguish among types to determine whether it may come from waste containing contaminants such as cesium, plutonium and uranium, said Jon Peschong, a Department of Energy deputy assistant manager for Hanford environmental cleanup.

Without aerial capabilities, the

work would have to be done by workers walking the large area or vehicles conducting surveys in areas that are accessible.

"This can cover so much more area," Peschong said.

The helicopter can take readings for an area 100 feet wide in one pass at about 40 mph. No ground is disturbed, including areas that may have cultural remains from earlier tribal use, and any contamination is not tracked to other areas, he said.

DOE already has done extensive characterization of the center of Hanford, but "this is one more step to make sure we are not missing anything," Peschong said. The information will be

used to develop environmental cleanup plans.

The central Hanford has burial grounds filled with debris and places where contaminated liquids were spilled or disposed of in soil. Among the burial grounds are 25 landfills that together received almost 16 million cubic feet of radioactive solid waste.

Hanford also used a helicopter for aerial radiological surveys in 2009 of a 13.7-square-mile area where animals had previously spread contamination after being attracted to radioactive salts left in the soil when liquid waste was discharged. That contamination has since been cleaned up.

The current surveys are done

by a helicopter that takes off from the Pasco airport. As it circles over the Columbia River, it takes a reading of the Earth's natural radiation and sets its instruments to that background level. It also takes a reading on its return flight low over the river two to three times a day.

The project is expected to cost about \$950,000, including the Hanford support crew and the report that will be prepared with the findings. The flights should be completed between this weekend and midweek.

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28 SEP 15

28 SEP 2015

DOE, state agree on 1 of 3 experts

Nominee will be part of panel of technical advisers to help judge

ANNETTE CARY
TRI-CITY HERALD

Washington and the Department of Energy have found something they can agree on in federal court litigation over the Hanford consent decree — a joint nominee for a panel of technical advisers to assist the judge.

But they're arguing over the other choices for the panel.

Judge Rosanna Malouf Peterson is forming a panel with three experts to advise her and help her understand the technical issues in the case, with DOE and the state each allowed to propose one expert. She also asked them to collaborate to come up with a third recommendation.

The state and DOE have agreed to jointly nominate Per Peterson, a professor in the Nuclear Engineering Department at the University of California, Berkeley.

Peterson has worked for a number of DOE national laboratories,

but not on Hanford matters, according to court documents. He also was chosen by former Energy Secretary Steven Chu to provide expert advice on technical issues at the Hanford vitrification plant, which he did without pay.

To complete the panel, DOE proposes Jeffrey Trent, an independent contractor providing technical and project management support to DOE at Hanford, including on the resolution of technical issues at the vitrification plant.

The state proposes Suzanne Dahl, an employee of the state Department of Ecology. But DOE argues Dahl, the state's expert on high-level radioactive waste, cannot serve without bias. She has provided sworn testimony in the consent decree litigation, which would affect her ability to impartially tutor the court, according to the Department of Justice.

Malouf Peterson declined to dismiss Dahl based on the

Department of Justice's complaint of bias, saying she realizes the difficulties Washington has in finding qualified experts given that DOE has almost exclusive authority over Hanford and employs a substantial number of qualified candidates.

But Malouf Peterson said both DOE and the state could submit further written arguments regarding Dahl's qualifications.

Dahl's expertise is in overseeing and directing compliance with regulatory requirements, but panel members will need engineering or nuclear safety expertise to advise on technical issues and how their resolution would affect the design of the vitrification plant, federal attorneys said in court documents.

The state said Dahl, the section manager for Ecology's Tank Waste Treatment Section, has been the state's point person on vitrification plant matters for 20 years.

The state had asked that if Dahl is dismissed for bias that Trent also be dismissed because of his heavy involvement in vitrification plant issues.

Malouf Peterson declined to dismiss Trent, but she noted that DOE had said that if Dahl is accepted it might also want to name someone who has provided sworn testimony in the case. The judge said she would consider a substitution, if DOE chose.

DOE and the state are in federal court after DOE indicated it was at risk of missing most of the remaining deadlines in a 2010 consent decree that resolved a lawsuit by set new court-enforced deadlines for emptying certain underground Hanford tanks of radioactive waste and building and starting to operate the vitrification plant to treat the waste. Some construction on the vitrification plant has been stopped until technical issues that could affect its safe and efficient operation are resolved.

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Hanford risk review meeting Sept. 28

A public meeting on work done to date to evaluate the remaining risk at Hanford is planned from 4 to 6 p.m. Sept. 28 in Room 142 of the Federal Building, 825 Jadwin Ave. in Richland.

The Consortium for Risk Evaluation with Stakeholder Participation is conducting

Hanford union workers to vote on agreement

Limited negotiations on collective bargaining agreements have concluded for union workers at four Hanford contractors, with union officials recommending members approve the deal.

The agreement would cover workers under the Hanford Atomic Metal Trades Council, or HAMTC, at Mission Support Alliance, Washington River Protection Solutions and CH2M Hill Plateau Remediation Co. Advanced Technologies and Laboratories also participated in the negotiations, but its con-

tract is ending in November.

Workers are being sent letters with the details and will vote Oct. 22.

The proposed agreement maintains the same schedule of medical, dental and vision benefits through 2019 for most contractors. Wage increases would be 2 percent for the next three years, according to HAMTC, an umbrella group for 14 affiliated unions.



Work is close to being completed to dig up the high-hazard waste trenches at Hanford's 618-10 Burial Ground.

Courtesy Department of Energy

27 SEP 15 Hazardous work ahead

Burial grounds excavation left for last to allow cleanup workers to gain experience

ANNETTE CARY
TRI-CITY HERALD

A little more than a half-century ago, large cask trucks, heavily shielded to provide protection against radiation, would leave the Hanford 300 Area north of Richland with loads of highly radioactive or particularly hazardous waste that researchers didn't want buried too close to town.

They'd arrive at the 618-10 Burial Ground along the main Hanford highway six miles north of Richland and back into position to drop their loads down pipes buried vertically in the ground. In between loads, each layer of waste would be topped with soil or grout to reduce the shine of radiation out of the top of the pipe.

When one pipe was filled, it would be capped with concrete and the next pipe would be filled. By the time the Department

of Energy stopped using the burial ground in 1963, some 94 buried pipes had been filled with waste.

This week, weather permitting, work is expected to start to excavate the first of the pipes.

They are referred to at Hanford as vertical pipe units, or VPUs.

The 618-10 and the similar high-hazard 618-11 farther north have been left for last among Hanford burial grounds near the Columbia River. Workers gained experience before tackling those expected to be the most hazardous.

DOE's contractor for the work, Washington Closure Hanford, has some idea of what's in the vertical pipe units. It has found photos and records, and conducted interviews with former workers familiar with 618-10 when the vertical pipes were filled from 1956-63. Washington Closure also has

inserted hollow tubes into the ground around the pipes to lower instruments to take radiation readings.

But Hanford projects typically have surprises.

At 618-10, the vertical pipe units had been expected to be comprised of five 55-gallon drums, tops and bottoms cut off and welded together. That's the case for many of them, workers found as they dug a hole next to each pipe to confirm their type and location. Some also are made from 14-inch-diameter corrugated piping.

But workers have discovered that 14 are made of steel, each about 15 to 16 feet long and 10 to 22 inches in diameter.

Those pipes will be left for last as workers proceed with a plan tested in a mockup to remove the other 80 pipes.

HANFORD FUNDING

Nuclear cleanup risk report under fire

Critics claim report proposes cutting state, local input on decisions

ANNETTE CARY

TRI-CITY HERALD

Government agencies near Hanford do not like a new report advising congressional funding leaders on risk-based environmental cleanup at

Department of Energy sites any more than Washington and Oregon state leaders do.

The report, by the Omnibus Risk Review Committee, was ordered in language accompanying the current DOE spending bill to analyze how effectively DOE considers and addresses risk at sites across the nation.

Instead, it appears to be based on cutting costs across national DOE cleanup sites, and proposes cutting

state and local input on cleanup decisions, critics have said.

"The history of what the federal government has done to contaminate our natural resources and our vision for the future of our region should be the basis of the analysis," said a letter from Hanford Communities, a coalition of local governments near Hanford.

The coalition includes Richland, Kennewick, Pasco, Benton and Franklin counties, and the Port of Benton.

"We are offended by a wholesale effort to homogenize the cleanup approach at very different (environmental management) sites across the country," said the letter, sent to leaders of the House and Senate appropriations subcommittees on Energy and Water Development.

The Energy Communities Alliance, which represents local governments near DOE cleanup sites across the nation, has similar concerns.

Decisions on cleanup "are not academic exercises in our communities," said the alliance's letter to the same congressional leaders. "Unfortunately, the report's recommendations do not address the role of communities in defining risk and instead marginalize locally elected government officials and communities affected by DOE."

The report ignores federal law

See **NUCLEAR** | Page A9

HANFORD | MEETING GOALS

Records set for cleaning groundwater

More improvements to treatment plants are coming

ANNETTE CARY
TRI-CITY HERALD

More improvements to Hanford groundwater treatment plants are in the works, even as they set new records for removing contaminants from the groundwater beneath Hanford.

CH2M Hill Plateau Remediation Co. met the goal set by the Department of Energy to treat 2.1 billion gallons of contaminated groundwater by Sept. 30, the end of the fiscal year, six weeks early. More than 75 tons of contaminants were removed from the groundwater.

"We're treating more groundwa-

ter and removing more contamination than any year in the past two decades," said Michael Cline, director of the DOE soil and groundwater division at Hanford.

Work that started under the American Recovery and Reinvestment Act of 2009 is paying dividends now.

Since then, two more plants have begun treating groundwater to remove hexavalent chromium along

the Columbia River, and the 200 West Pump and Treat Facility has begun removing multiple contaminants from groundwater in central Hanford.

Those and more efficient operation of treatment plants have contributed to at least the third record-breaking year in a row for groundwater treatment and have dramatically increased the amount of contaminants removed.

Since 2009, CH2M has more than quadrupled the groundwater treatment capacity at Hanford, from 500 million gallons a year to more than 2.1 billion gallons this fiscal year. Last year, 1.9 billion gallons of groundwater were treated.

The 75 tons of contaminants removed this year are more than a third of the 200 tons of

See **RECORDS** | Page A8

Deadline today for DOE to turn over excess land

Agency declines to discuss matter Tuesday

ANNETTE CARY
TRI-CITY HERALD

Supporters of transferring Hanford land for economic development may have reason to celebrate.

Federal legislation requires the Department of Energy to

turn over 1,641 acres of unneeded land to the Tri-City Development Council by today.

Former Rep. Doc Hastings, R-Wash., worked with Sens. Patty Murray and Maria Cantwell, both D-Wash., to mandate the land transfer late in 2014, more than three years after

TRIDEC applied for the land.

DOE declined Tuesday to discuss its plans to meet the deadline. But TRIDEC is optimistic enough that DOE will sign over the land that it has planned a celebration Oct. 1 and issued invitations to those who have worked for as long as five years on the issue.

They are waiting until Oct. 1, the start of the new federal fis-

cal year, to celebrate because the transfer will be "a new start," said Gary Petersen, TRIDEC vice president of Hanford projects. It provides an opportunity to look for a manufacturer with a clean energy product or similar companies for the Tri-City area.

TRIDEC's goal is to replace jobs lost at Hanford as portions of environmental cleanup are

completed or less federal money is spent on the project.

It is designated by DOE as the Hanford Community Re-use Organization, allowing it to accept excess property, ranging from Hanford's unneeded desks to unused land.

Because TRIDEC is not in the business of leasing or selling land, it has formed a partnership with area govern-

ments that will take over ownership of much or all of the land. It is working with the city of Richland, the Port of Benton and Benton County.

A 300-acre portion of land may be transferred by TRIDEC with agreement from local governments directly to a solar project developer.

See **LAND** | Page A8

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CELEBRITY SPOTLIGHT

- ▶ **Jim Carrey**, left, 53, says he was shocked and saddened of the death of ex-girlfriend Cathriona White, 30, whose death is being investigated as a suicide.
- ▶ **The Who** have announced the rescheduled dates for their axed fall tour, now kicking off in February 2016. Their "The Who Hits 50!" tour will be in Seattle on May 15 and Portland on May 17.
- ▶ Billboard magazine announced Tuesday that **Lady Gaga** is the woman of the year and will be honored Dec. 11 in New York City.

HIGH **77** LOW **50**
MORE WEATHER, A12

INSIDE
Bridge | S7
Classified | B9
Comics | S8
Explore | B1-3

Horoscope | S7
Market Watch | A9
Obituaries | A9-10
Opinion | A11

Puzzles | S7
Sports | B4-8
TV listings | A12
Weather | A12

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HANFORD |
LAND TRANSFER

Work to start on new jobs

Community leaders
celebrate new property

ANNETTE CARY

TRI-CITY HERALD

For the first time since 1998, the Department of Energy has returned land it seized for the Manhattan Project back to the Tri-Cities community.

Community leaders celebrated the transfer of 1,641 acres of land just north of Richland for economic development at a gathering Thursday morning in Kennewick.

It was the culmination of five years of work to get the land released. But now the local government agencies and the Tri-City Development Council must start the work of putting the land to use to create jobs to replace some of those that will be lost as portions of cleanup of the Hanford nuclear reservation are completed.

The land was seized in 1943 from a patchwork of private and government owners for the secret project to make plutonium for the atomic bomb dropped on Nagasaki, Japan, helping end World War II.

Tribes also used Hanford land and had treaty rights to hunt, fish and gather there. DOE and the tribes worked out a memorandum of agreement related to the transfer.

The Yakamas, Umatillas, Nez Perce and Wanapum will have access to the land before it is industrialized and an access agreement will be developed between

2 0 47 1 5

HANFORD TANK | LEAKER

Exhauster removes liquid

2,000 gallons of water
reportedly has evaporated

ANNETTE CARY
TRI-CITY HERALD

The Department of Energy has begun to take some action on the Hanford tank that is believed to be leaking radioactive waste into the soil beneath it.

A portable exhauster is being used to reduce the volume of liquid in the tank that could leak. It also could reduce the rate at which waste is leaking into the ground.

The exhauster has removed about 2,000 gallons of water from Tank T-III, according to Washington River Protection Solutions, the Department of Energy contractor that manages Hanford's underground waste storage tanks. The tank holds about 436,000 gallons of radioactive waste in the form of sludge.

"The exhauster is performing as we hoped it would," said Mark Lindholm, the acting president of the tank farm contractor, in a statement. "This is an important step in the right direction as we try to minimize liquid inside T-III."

The tank is leaking waste at the rate of about 1.8 gallons per day, down from as much as 3.1 gallons a day in spring 2013, according to a Hanford report issued last year.

DOE announced in February 2013 that the tank, which was built during World War II, had a declining level of waste and appeared to be leaking. It was the first of Hanford's 149 single-shell tanks believed to be leaking after DOE completed a project to empty pumpable liquids from the aging tanks.

"DOE and Ecology agreed there was a reason to address the declining level and leak" in Tank T-III, said Jeff Lyon of the Washington State Department of Ecology, a regulator for the Hanford

FEDERAL LAWSUIT | HANFORD

Subcontracting lawsuit can move ahead

Companies accused of establishing facade of small businesses to get contracts to do cleanup work

ANNETTE CARY
TRI-CITY HERALD

A federal lawsuit against Hanford contractor Washington Closure Hanford and other businesses paid to perform Hanford environmental cleanup work will go forward, U.S. Judge Edward Shea has ruled.

The lawsuit claims the companies

agreed among themselves to establish a facade of small businesses that were awarded millions of dollars for work reserved for small businesses.

Instead, that work was done by businesses that didn't qualify for the bid award, the lawsuit claims. In one case, the winning subcontractor had no experience in handling nuclear

waste, no equipment and no employees, according to the lawsuit.

The lawsuit was brought by Savage Logistics, a small firm seeking work at Hanford, and later joined by the federal government in much of the lawsuit questioning certain Washington Closure subcontracts.

The subcontracts were supposed to be awarded to small businesses, including those in certain categories recognized by the federal government as being disadvantaged, such as being owned by a woman.

The lawsuit alleges the work was performed by Federal Engineers and Constructors, or FE&C, a Richland business that did not qualify for the subcontracts, according to the lawsuit.

"The old proverb 'It's not what you know but who you know' is at the heart of the assertions," Shea said in his ruling on motions to dismiss the lawsuit. "Plaintiffs allege that defendants took their personal connections a step too far in order to gain a financial benefit."

The lawsuit said that Washington Closure in 2010 awarded environmental cleanup work worth more than \$4 million to Sage Tec, a company formed by Laura Shikashio, the wife of an FE&C vice president of construction services. The work called for digging up contaminated soil down to 85 feet deep near Hanford's C Reactor.

WCH knew that Sage Tec had no relevant experience in handling

See **LAWSUIT** | Page A9

DOE starts planning for new contracts

ANNETTE CARY

TRI-CITY HERALD

The Department of Energy has taken the first step toward awarding new contracts for large scopes of work at the Hanford nuclear reservation.

It has issued a request for information from companies interested in environmental cleanup and support services after September 2018. The work is managed by the DOE Richland Operations Office, which typically has an annual budget approaching \$1 billion.

The contract held by CH2M Hill Plateau Remediation Co., which is responsible for much of central Hanford and groundwater cleanup, expires in September 2018.

The contract for Washington Closure Hanford, which is responsible for cleanup along the Columbia River, has been extended through September 2016. Most of the cleanup along the river will be completed then, but some continuing work on complex or difficult projects will need to be assigned to another contractor.

The third large contract awarded by the Richland Operations Office, held by Mission Support Alliance, expires in September 2019. It covers sitewide services, including information technology, utilities, security, fire protection, management of the HAMMER training center, road maintenance, preservation of cultural artifacts and portfolio management

for DOE, including providing data to help DOE plan for and meet deadlines.

As contract expiration dates approach, DOE wants feedback from companies interested in the work on innovative approaches to work and potential contracting goals, according to DOE's request for information.

Key decisions on the new contracts have yet to be made. DOE has not decided the number of contracts, types of contracts, dates of work or whether some will be reserved for small businesses. It has asked for proposals from interested companies on how they would like those matters handled.

The request for information also does not cover the possible cost of projects, but asks interested companies to provide information on how they would deal with funding that could vary by budget year.

The request for information does not include work at the Hanford tank farms, where Washington River Protection Solutions manages 56 million gallons of high level radioactive waste held in underground tanks. The tank farms contract falls under a different office, the DOE Office of River Protection.

It also will expire in a few years. The Washington River Protection Solutions contract is good through September 2016, and DOE has the option to extend it through September 2018.

The major work that could be included in one or more new cleanup contracts under the

Richland Operations Office includes transferring the K Basin sludge to central Hanford and treating it, establishing infrastructure to support vitrification plant operations, completing transfer of strontium and cesium capsules to dry storage and retrieving temporarily buried waste and preparing it for shipment to the Waste Isolation Pilot Plant in New Mexico. Groundwater cleanup and protection would continue.

Additional central Hanford work could include preparation to demolish Hanford's huge processing buildings and tearing down contaminated central Hanford buildings and digging up contaminated waste sites there.

Additional work along the Columbia River could include completing cleanup at the 324 Building, which sits over a highly radioactive spill; digging up the 618-II Burial Ground near Energy Northwest's nuclear power plant on leased Hanford land and cocooning the K Reactors, a process that puts them into long-term storage.

DOE plans separate Hanford site tours on Nov. 17 for companies interested in the Richland Operations Office cleanup projects and the Hanford-wide infrastructure and services. Individual meetings will be scheduled Nov. 18 to 20. Sign up information is posted at Lusa.gov/INgIBv4.

► *Annette Cary: 509-582-1533; acary@tricityherald.com; Twitter: @HanfordNews*

Hanford workers recognized for safety

More Hanford contractors have been awarded the Voluntary Protection Program Star of Excellence Award.

Washington Closure Hanford and CH2M Hill Plateau Remediation Co. received the award, along with Mission Support Alliance for its safeguards and security group and the HAMMER training center. The Department of Energy announced earlier that Bechtel National also received the award, DOE's highest for safety.

Washington Closure was given the Legacy of Stars award for four consecutive Star of Excellence awards.

The Star of Excellence Award is given to sites that demonstrate excellence in outreach and mentoring efforts and exemplary employee involvement and management leadership related to the safety program.

In addition, CH2M Hill received a national VPP Participants Association Safety and Health Outreach Award for its After School Matters program. In the program, workers share safety practices outside Hanford by discussing their work with students and leading

Decades-long downwinder lawsuit settles

As many as 5,000 cases worked their way through the legal system or were dropped

ANNETTE CARY
TRI-CITY HERALD

The final plaintiffs in the Hanford downwinder lawsuit have reached settlement agreements in the case filed 24 years ago, according to federal court documents.

About 15 years ago, there were as many as 5,000 people claiming their health was harmed by past radioactive releases from the Hanford nuclear reservation, according to attorneys for the Hanford contractors who were sued. Downwinder attorney Richard Eymann of Spokane puts the total at closer to 3,550 cases.

All have either reached settlement agreements or dropped their claims.

"The Department of Energy is pleased to see this long-standing matter resolved," DOE said in a statement Wednesday.

But Eymann said he did not believe any of the attorneys representing plaintiffs in the case are pleased with the results.

"I'm not happy at all," he said. "From the very beginning we dealt with a scorched-earth defense. These people were never fairly compensated for the extent of their injuries and how they suffered from their injuries over many, many

years."

The majority of the claims advancing through the legal process were for thyroid cancer or other thyroid conditions, including hypothyroidism.

During World War II and the early years of the Cold War, radioactive iodine was released into the air at Hanford during the production of plutonium for the nation's nuclear weapons program.

The iodine drifted with the wind over communities surrounding Hanford and to the northeast, where it settled to the ground on crops and pastures where cows grazed. Children were particularly at risk of developing disease years later if they drank milk contaminated with radioactive iodine, which concentrates in the thyroid gland.

The number of plaintiffs who reached settlement agreements was not available in legal documents. They are represented by 14 legal firms.

The settlements reached are confidential, said Kevin Van Wart, one of the lead attorneys for early Hanford contractors DuPont, General Electric, UNC Nuclear Industries, Atlantic Richfield and Rockwell International.

The contractors were

HANFORD CONSENT DECREE | LAWSUIT

Judge names her panel of technical experts

Group will advise her on issues away from eyes of public, lawyers

ANNETTE CARY
TRI-CITY HERALD

The federal judge hearing the Hanford consent decree litigation has selected her panel of technical advisers, overruling the concerns of the Department of Energy.

Judge Rosanna Malouf Peterson has agreed to the experts proposed by the state of Washington and DOE and their jointly proposed expert.

She plans to discuss issues with all three technical advisers present, but outside the presence of attorneys, media and members of the public.

"The court seeks an open dialogue among the technical advisers, and by excluding the parties, the public and counsel from the discussions, the court intends to create an atmosphere in which the technical advisers openly express their independent opinions and openly engage in discussion with each other and the court," Malouf Peterson said in a court order.

Suzanne Dahl, the state Department of Ecology section manager for tank waste treatment and the sitewide permit, is the state's choice approved by Malouf Peterson.

DOE had objected that she lacks the expertise to assist the court in unraveling the complex scientific, technical and project management issues in the case. The state countered that her two decades of experience with the Hanford nuclear reservation and related regulatory issues make her uniquely qualified to advise the judge.

The judge noted, but overruled, DOE's objection.

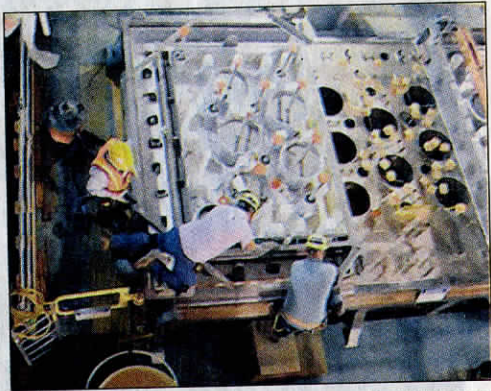
"Both parties refer to the role of the technical advisers as defining for the court 'jargon and theory' relevant to nuclear engineering," Malouf Peterson said.

But she plans to take a broader approach, using the panel as a sounding board to help her analyze issues presented by the parties and to think through the critical technical problems based on evidence submitted by the parties, she said.

DOE's choice for the panel was Jeffery Trent, an independent technical and project management consultant to DOE.

Malouf Peterson said she is aware of the potential biases of Dahl and Trent and will keep it in mind as they give her advice.

The third member of the panel, agreed to by the state and DOE, is Per Peterson, professor of



Courtesy Bechtel National

Workers inspect a melter lid at the Hanford vitrification plant's Low-Activity Waste Facility, which is under construction.

nuclear engineering at the University of California, Berkeley.

The technical advisers will not assume the role of witnesses by supplying new evidence, nor will they make factual findings or draw legal conclusions.

"The technical advisers shall not be advocates for any party," the judge said.

State and federal officials are prohibited from contacting the panel members regarding any discussion with the judge.

In case there are concerns about the role the technical advisers play in their closed-door discussions with the judge, sessions will be recorded to preserve a record for any future review, she said.

Members of the panel will be compensated, with the judge asking the parties in the case to propose pay rates.

DOE and the state have proposed new deadlines for emptying radioactive waste from certain leak-prone tanks at Hanford and building and starting operation of the vitrification plant. The plant will glassify up to 56 million gallons of waste for disposal.

DOE and the state resolved a lawsuit brought by the state in 2008 over missed Hanford deadlines by agreeing to the court-enforced consent decree in 2010. The consent decree set new deadlines.

The consent decree is back before the court for enforcement after DOE said that most of the remaining deadlines in the consent decree are at serious risk of being missed.

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Cantwell questions DOE nominees about Hanford

ANNETTE CARY

TRI-CITY HERALD

Work at the Hanford vitrification plant needs to move forward on a path that is certain, Sen. Maria Cantwell, D-Wash., said at a confirmation hearing Tuesday for three proposed Department of Energy officials.

She sees ideas proposed at Hanford only to have new officials come to the realization that they will not work after large amounts of money have been spent, she said at the hearing of the Senate Energy and Natural Resources Committee. She is the ranking member of the committee.

“We do have leaky tanks and we need to get them cleaned up,” Cantwell said.

Much of the 56 million gallons of radioactive waste stored in underground tanks is waiting for treatment at the Hanford vitrification plant, which is years away from the start of even limited operation.

Treating waste for disposal is important, said Victoria Baecher Wassmer, nominated as the DOE undersecretary for management and performance.

She has had high-level briefings and will be learning more details on the proposed phased approach to the start of vitrification plant operations. Treating some of the Hanford waste storage tank’s low-activity radioactive waste for disposal while technical issues are addressed related to high-level radioactive waste has been proposed.

Some forms of nuclear defense waste do not yet have viable disposition paths, Cantwell said.

Cherry Murray, nominated to be the director of the DOE Office of Science, serves on the Congressional Commission to Review the Effectiveness of the National Energy Laboratories. The commission has noted that with the high cost of DOE environmental cleanup, more science is

needed, Murray told Cantwell.

“Science really is the underpinning of every technology,” Murray said.

The third DOE nominee at the hearing was John Kotek, formerly the staff director to the Blue Ribbon Commission on America’s Nuclear Future. He is nominated to be the DOE assistant secretary for nuclear energy.

Kotek said that DOE is in the process of developing a plan for a separate national repository for high-level radioactive defense waste, such as that at Hanford, rather than disposing of it with used commercial nuclear power plant fuel as had previously been mandated. The federal government has said that because some defense waste is less radioactive and easier to handle, a simpler design might work for a defense repository.

Cantwell said the three DOE nominees are well-qualified and should be confirmed.

DAILY

22 OCT 15

Hanford national park signing set for Nov. 10

B Reactor's status as part of a new national park is expected to become official Nov. 10, when the Departments of Energy and Interior sign a joint agreement in Washington, D.C.

Community leaders from the Tri-Cities have been invited to the signing ceremony for the new Manhattan Project National Historical Park, according to the Energy Communities Alliance. The park also will include historic areas at Los Alamos, N.M., and Oak Ridge, Tenn.

The agreement will cover the responsibilities of DOE, which will continue to own B Reactor, and the park service, which will lead efforts to provide information on the Manhattan Project. The agreement also will cover a periodic review process to allow more sites to be added to the park and a section on philanthropy, according to the alliance.

The park eventually could also include T Plant, where irradiated fuel was pro-

Regulation waiver might keep Hanford workers safer

Public comments will be accepted until Oct. 28

ANNETTE CARY

TRI-CITY HERALD

Federal officials are proposing an exception to a federal waste disposition regulation that appears to be exposing Hanford workers to unneeded risk.

About three years ago, visiting federal inspectors observed that a practice sometimes used at Hanford does not meet the waste disposal standards of the Resource Conservation and Recovery Act. Waste must be treated before it is placed in landfills or disposal trenches, according to the law.

Since then, Hanford workers have been unable to place very large or unwieldy hazardous items in the bottom of the huge landfill in central Hanford, and then contain contamination by pouring grout around the waste before it is buried. In the past, the items would be placed on a concrete pad, or support, and then dirt berms or plywood would make a form to concrete the waste in place.

Now contaminated equipment must be given a polymer coating before it is lifted into the Environmental Restoration Disposal Facility in central Hanford.

According to the proposed plan to amend regulations at the landfill, that requires three

times as many workers, and they spend about four times as long to treat the waste. They also must spend that time closer to the radioactively contaminated waste.

The closest a worker has to be to radioactive materials for in-landfill grouting is eight feet, compared to 1 foot for workers applying the polymer coat. The radiation exposure at eight feet is 1/64th the exposure at 1 foot, according to a proposed amendment to allow in-landfill treatment.

The cost increases from an average of \$5,000 per item to \$15,000 to \$30,000.

The change would only be allowed for equipment that is large, long or heavy and has hazardous contamination.

The Hanford Advisory Board supported the change in a letter of advice sent to EPA and Department of Energy officials a year ago, saying hand coating the equipment before it is placed in the landfill "results in an otherwise avoidable radiological exposure."

"The board supports a common sense, streamlined approach to reducing both worker risk and the potential for airborne releases," it said.

DOE and EPA are accepting comments on the proposed change to regulations until Oct. 28. Send them to Kristen.Skopec@rl.doe.gov.

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HANFORD CLEANUP

Evaporator frees up space for waste

Officials not convinced plant can run efficiently as needed for long term

ANNETTE CARY

TRI-CITY HERALD

Enough space to hold almost 2 million gallons of radioactive waste has been freed up in Hanford's underground tanks through a series of

successful runs of the nuclear reservation's evaporation plant.

The 242-A Evaporator has completed four successful runs since returning to service a year ago after being shut down for four years for improvements.

The evaporator plant is central to DOE's plans to meet its court-enforced consent decree obligations to empty 19 of Hanford's leak-prone underground tanks. Waste is transferred into the 27 usable, newer dou-

ble-shell tanks at the site until the waste can be treated for disposal at the yet-to-be-finished vitrification plant.

The Department of Energy has argued in federal court that the evaporator plant can provide enough space in the double-shell tanks that it will not need to build additional waste storage tanks.

But the state of Washington is not convinced the plant can be operated with the efficiency and frequency

that would be required to continue emptying single-shell tanks. It has asked the court to order DOE to build four new million-gallon storage tanks by 2022, and possibly more by later deadlines.

The evaporator heats liquid tank waste under vacuum so it will boil at a temperature of about 125 degrees. Water vapor from the boiling waste is captured, condensed, filtered and sent to the Effluent Treatment Facility for treatment and disposal. The

concentrated waste is then returned to the double-shell tanks.

Since starting operations in 1977, the evaporator plant has reduced the liquid in Hanford tank waste by more than 70 million gallons. Hanford has about 56 million gallons of radioactive waste stored in underground tanks from the past processing of irradiated fuel to produce plutonium for the nation's nuclear

Hanford union workers approve collective bargaining agreements

Union workers for four Hanford contractors approved proposed collective bargaining agreements Thursday, according to the Hanford Atomic Metal Trades Council.

The vote followed limited negotiations for agreements covering workers under HAMTC at Mission Support Alliance, Washington River Protection Solutions and CH2M Hill Plateau Remediation Co. Workers at Advanced Technologies and Laboratories also voted, although the company's contract at the 222-S Laboratory expires in November.

The vote totals were not made public.

The agreements maintain the same schedule of medical, dental and vision benefits through 2019 for most contractors. Wage increases would be 2 percent for the next three years, according to HAMTC, an umbrella group for 14 affiliated unions.

Hazardous jobs expose workers

At least 7 incidents recorded;
DOE sends letter to CH2M Hill

ANNETTE CARY

TRI-CITY HERALD

Workers continue to be contaminated with small amounts of radioactive material at Hanford's Plutonium Finishing Plant as they conduct what Department of Energy officials say is the most hazardous cleanup work ever done at Hanford.

Two months ago, DOE sent its contractor, CH2M Hill Plateau Remediation Co., a letter

outlining concerns, according to a recently released weekly staff report of the Defense Nuclear Facilities Safety Board.

"Over the past several months (CH2M Hill) has experienced numerous radiological issues at PFP," the letter said. "Of particular concern are the intake events and the cut/puncture events that can have significant consequences."

Since then, a worker has had his skin contaminated during work to cut up a glove box, which stands more than 12 feet high and is contaminated with significant amounts of plutonium. The worker was wearing a protective suit that was breached, allowing radioactive mate-

rial to reach his forehead and hairline.

The suits used for such high-hazard work at the Plutonium Finishing Plant are filled with air and workers are in a congested area. It's possible that the worker may have brushed against something that caused a small breach in the suit, or the suit could have had a defect.

In addition, three people in a control room watching work on the glove box — where workers once reached their hands through attached gloves into the box to work with radioactive material — had clothing or skin contamination.

Dramatic change for Hanford's 300 Area



ANNETTE CARY,
TRI-CITY HERALD

The 300 Area of Hanford just north of Richland has gone quiet.

No more heavy equipment rumbles across the acres within the 300 Area fence, their long arms extending with shears to cut through the walls and roofs of buildings and their shovels digging up contaminated debris.

It has served as the gateway to Hanford since 1943, when work began to produce plutonium for the nation's nuclear weapons program. Cleanup has been under way since 1999.

"It looks tremendously different," said Dennis Faulk, Hanford program manager for the Environmental Protection Agency.

Drivers heading north beyond the Richland city limits have been

able to see the progress on environmental cleanup work behind the fence of the area between Stevens Drive and the Columbia River. The equivalent of a small town has disappeared over those years.

This spring, the seeds planted where buildings once stood will turn the land green.

"The dramatic changes in the landscape of the 300 Area underscores the substantial progress that has been made there," said Jane Hedges, manager of the Washington state nuclear waste program.

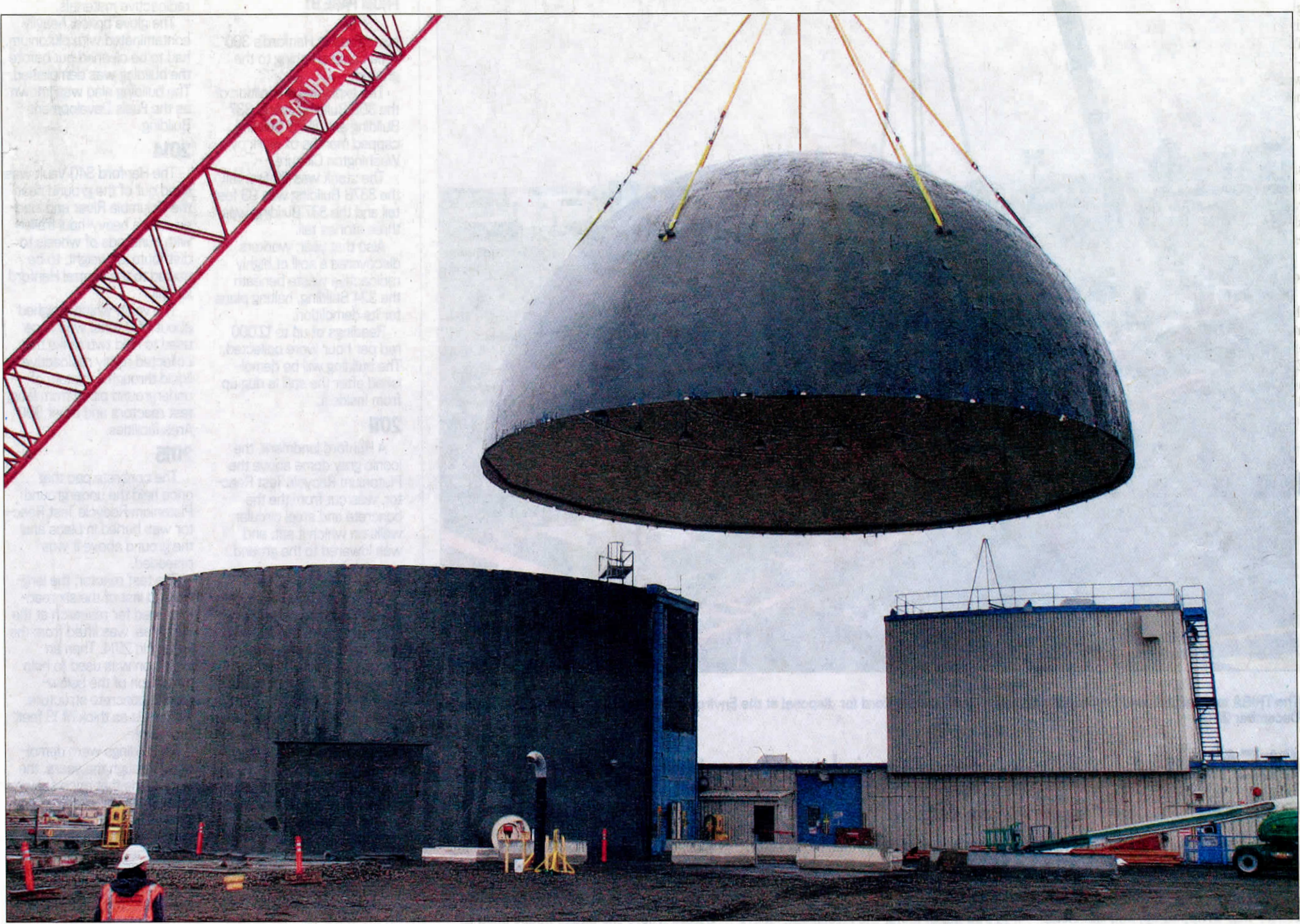
A few buildings remain in use there by Pacific Northwest National Laboratory or for Hanford nuclear reservation support, including a fire station and records archive.

But the only building scheduled for cleanup that still stands is the

Courtesy DOE
Some 209 facilities, from reactor buildings to tanks, have been torn down at the Hanford 300 Area just north of Richland.

324 Building, after workers discovered it sits over a spill of high-level radioactive waste. It will be addressed as federal dollars become available in coming years.

See the story about the completion of most of the 300 Area cleanup and photos on today's Depth cover on Page B1. More photos at www.tricityherald.com.



Photos courtesy DOE

The dome of the Plutonium Recycle Test Reactor just north of Richland was cut off and lifted to the ground in 2011.

Hanford cleanup north of Richland largely completed

ANNETTE CARY
TRI-CITY HERALD

Critics who say no progress is being made on environmental cleanup at the Hanford nuclear reservation likely have not been to the 300 Area.

It was a major industrial complex for the site, making the uranium fuel that would be sent to the 100 Area reactors for irradiation and then to the 200 Area processing plants for the plutonium to be separated out. It also was used for research, with much of the work conducted elsewhere at Hanford tested first in the 300 Area.

Sixteen years after clean-up work began, there is only a handful of building still standing. Located along Stevens Drive just north of Richland, it's the most publicly visible sign of progress at the nuclear reservation.

The six research reactors that operated there are gone. Some 209 structures, ranging from sheds to a contaminated building larger than a football field, have come down inside the fence of the 300 Area industrial



The 71,000-square-foot 308 Building, also called the Fuels Development Building, had 52 glove boxes. It was demolished in 2012.

park. Workers have cleaned up 312 waste sites, including burial grounds with drums of chemical and radioactive waste and, in one case, a safe with a jug filled with plutonium-laced liquid.

The 51 acres of dirt laid bare by heavy equipment has been seeded with native

vegetation that will come up in the spring.

"The progress in the 300 Area has been incredible, with the amount of work that has been done to eliminate hazards close to the Columbia River and city of Richland," said Stacy Charboneau, manager of the DOE

Hanford Richland Operations Office.

Bulk of cleanup completed

Workers haven't quite put a period on the end of 300 Area cleanup. A couple of

See **CLEANUP** | Page B2

300 AREA CLEANUP HISTORY

1991

The first Superfund clean-up at Hanford began in the 300 Area in the cold days of late February.

Workers went after about 100 drums buried within a mile of the Columbia River, starting in winter because of fear the contents might be flammable.

They contained an organic solvent called hexone, with traces of uranium. Some drums still held liquids, but others had disintegrated.

"They were in pretty bad shape," said Wayne Johnson, a Hanford contractor manager, after the initial drums were uncovered.

1996

A total of 574 billets of uranium stored at the 300 Area were shipped from Hanford to a British Nuclear Fuels Limited plant in Sellafeld, England.

The billets, 420-pound cylinders of uranium, were destined to be made into fuel for Hanford's N Reactor before it stopped operating.

More billets and fuel assemblies fabricated for Hanford reactors were shipped to Portsmouth, Ohio, starting in mid-2000 or prepared for storage in central Hanford.

1998

Excavation work stops because then-contractor Bechtel Hanford suspects uranium shavings might be inside oil-filled barrels dug up just north of the 300 Area.

The contents posed a risk of spontaneously igniting if exposed to air. Two years later, a massive

wildfire swept across Hanford, just missing the area where 300 of the excavated drums were sitting.

A total of 786 of the drums were excavated over five years, the majority containing uranium chips and oil.

2001

The first 300 Area building is leveled. Building 303K was a small structure used mostly to store uranium.

2005

Surprises were turning up in Hanford 300 Area burial grounds. A closed safe containing a gallon-sized glass jug of plutonium-laced liquid was unearthed.

Research at Pacific Northwest National Laboratory would trace its origins through nuclear archaeology to the first batch of weapons-grade materials processed at Hanford.

It was the second oldest known man-made plutonium 239, with the oldest held in the Smithsonian.

2009

A Hanford worker fell 50 feet through an open hatch on a the catwalk of a building being prepared for demolition to the floor below. He survived the fall with serious injuries.

Washington Closure was cited for violations of fall protection and ladder safety but praised for the changes it then made to safety practices.

2010

In the early morning hours of Oct. 9, 2010, three

See **300 AREA** | Page B2

Delayed deadlines proposed

DOE, regulators previously focused on river cleanup; public meeting set Nov. 4

ANNETTE CARY
TRI-CITY HERALD

The Department of Energy and its Hanford regulators are proposing new legal deadlines for much of the environmental cleanup work in central Hanford after focusing spending on cleanup closer to the Columbia River in recent years.

"Now we are in a situation that we have milestones that can't be met," said Emerald Laija, an Environmental Protection Agency scientist.

Proposed new deadlines, some pushing out deadlines by almost a decade or delaying requirements to set deadlines until more information will be available, will be discussed at a public meeting Nov. 4 in the Tri-Cities and at meetings later this month in Seattle, Portland and Hood River.

During the past 26 years, the more than 450 changes have been made to the Tri-Party Agreement, which sets legal deadlines for Hanford cleanup. But the package of changes proposed now is among the 10 most significant packages of changes proposed in the document's history, said John Price, the Tri-Party Agreement section manager for the Department of Ecology.

The Washington State Department of Ecology has known for a couple of years that central Hanford deadlines could not be met, Price said. The proposed changes cover 64 milestones and a broad scope of work.

The state and EPA have been working with DOE as it develops preliminary plans to do the work based on the study of contaminated areas so the agencies. That effort will be used to realistically determine how much additional time will be needed, including for more complete studies.

The agencies also have been discussing how much work could be completed under Hanford annual budgets that are not expected to increase significantly and how to keep work on a steady pace to prevent cycles of layoffs of experienced workers followed by retraining new workers.

"This is a realistic, achievable plan at a slightly higher budget level than they (DOE) are getting today," Price said. Along with oth-

er work assigned to the DOE Richland Operations Office, it would require annual budgets of about \$1.2 billion rather than typical current budgets approaching \$1 billion.

The proposed new deadlines would cover much of the remaining cleanup work in central Hanford, other than work related to Hanford's tanks holding 56 million gallons of radioactive waste. It also would cover some key work yet to be finished near the Columbia River — excavation of the high-hazard 618-II Burial Ground and cleanup of the highly radioactive spill beneath the 324 Building just north of Richland.

They would mesh with other new deadlines for retrieving temporarily buried waste in central Hanford that may be sent to the Waste Isolation Pilot Plant, a national waste repository in New Mexico, and for removing radioactive sludge from the K West Basin and treating it for disposal.

As the DOE worked to get most of the Hanford cleanup along the Columbia River completed by this year, the approach included a bias for action, Price said. Contaminated soil and waste was dug up and then sampled because of the risk to the river.

But for central Hanford, a more deliberate approach is being proposed. More investigation of contamination is being done before cleanup, Price said.

The contamination could be much deeper underground. Near the Columbia River, some contaminated soil was excavated down to groundwater at 85 feet deep and then a little lower. But in central Hanford, contamination may stretch 300 feet down to groundwater.

The central Hanford waste and contamination would have come from chemical processing of radioactive material rather than largely from reactor operations along the Columbia River, and levels of contamination may be greater. In central Hanford, irradiated fuel and sometimes other material was processed to remove plutonium or other potentially useful material.

The first group of new deadlines is for completing the investigation of contamination and feasibility studies of methods for cleanup up of key central Hanford areas, with some exceptions that include cleanup related to the underground waste storage tanks and the five large processing facilities, called canyons.

The investigations would include all of the 200 East and West Areas, 43 miles of unlined trenches used to dispose of contaminated de-

bris and soil contamination deep in the ground.

"The Central Plateau is very complicated, so an investigation can take several years," Price said.

Multiple deadlines would be extended or added for the studies. But the final date for completion of the investigations and feasibility studies would be extended from the end of 2016 to June 2026.

A second set of deadlines would cover the actual cleanup work covered by the investigation and feasibility studies. Now the deadline is fall 2024. But the new deadlines would be set depending on what decisions were made by 2026, based on the feasibility studies.

A third set of deadlines would cover cleanup deadlines for three of five of Hanford's processing canyons. Work plans for the PUREX, REDOX and B Plant canyon facilities and waste sites would be required to be submitted by June 2026, an extension from fall 2022.

Because the canyon facilities are comparatively stable, their cleanup is a lower priority than some other central Hanford cleanup, Price said.

The deadlines do not include the other two canyons because decisions have been made and cleanup work has started on Hanford's U Plant and T Plant is being used for some work with radioactive materials.

Another set of deadlines would cover the 618-II Burial Ground, which contains highly hazardous waste from defense production of plutonium but is by the Columbia Generating Station, a commercial nuclear power reactor on leased Hanford land. The set of deadlines also would cover a spill of cesium and strontium under the 324 Building and removal of the building when it is no longer needed to serve as a protective barrier over the spill.

Cleanup of those two sites would be required to be completed in fall 2021, an extension of three years.

"The Department of Ecology is very interested to hear what the public thinks and we encourage people to come out and talk to us" at hearings, Price said.

Written comments also may be submitted until Dec. 11. Email Kristen.Skopeck@rl.doe.gov or mail Kristen Skopeck, DOE Richland Operations Office, P.O. Box 550 MSIN A7-75, Richland, WA 99352.

◆ Annette Cary: 509-582-1533; acary@tricityherald.com; Twitter: @HanfordNews

5 NOV 18

Concerns raised about deadlines

Some new dates wouldn't be set for more than 10 years

ANNETTE CARY

TRI-CITY HERALD

Many of the people who have advocated for cleanup of the Hanford nuclear reservation will be dead by the time work covered in a proposed set of changes to legally binding deadlines for Hanford environmental cleanup is completed, said Susan Leckband at a meeting Wednesday night to discuss the changes.

"That's disturbing," she said. Some of the proposed new deadlines for cleanup work would not be set until 2026, with actual cleanup work to be done after that.

The Department of Energy and its regulators — the Environmental Protection Agency and the Washington Department of Ecology — held the first of four meetings to discuss proposed changes Wednesday in Richland. About 50 people attended.

The Richland Operations Office, responsible for all Hanford cleanup other than addressing the 56 million gallons of radioactive waste stored in underground tanks, has spent much of its budget in the past decade on Hanford cleanup close to the Columbia River.

That has caused delays in its cleanup work in central Hanford, which has about 400 buildings and about 1,500 waste sites where contaminated material was disposed of in the ground or liquids spilled or leaked into the

\$1.2 billion for the Richland Operations Office.

Plans call for completing investigations and screening possible methods for cleanup for many of those buildings and waste sites by 2026. The current deadline is in 2016.

"That's a very long delay, a decade. People's commitments change in a decade. The agencies change," said Leckband, who was on the meeting agenda to give the community's perspective as a former Hanford worker. She also is the past chairwoman of the Hanford Advisory Board.

Deadlines for three large processing plants — PUREX, REDOX and B Plant — would be considered separately. DOE's first deadline for them would be to submit dates in 2026 for when they would be required to be cleaned up.

Leckband said she is not as concerned about delaying cleanup of the processing plants because the large concrete buildings are stable and will be stable for many years to come.

She also has some concerns about some changed deadlines for some of the last and most difficult projects left along the Columbia River, including for the 324 Building, which sits over a highly radioactive spill. The deadline to clean up the spill and tear down the building would be extended from fall 2018 to fall 2021.

"The 324 Building, you could stand in it and spit in the Columbia River," she said. "If that leaks into the river, it affects thousands of lives. It's dangerous and I think that really takes priority."

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Do I really want to set a date 30 to 40 years in the future to complete this work?

Dennis Faulk,
EPA program manager

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sites and most buildings in central Hanford was required to be completed in 2024, and now those dates will be determined after more is known about the sites.

Dennis Faulk, EPA Hanford program manager, said cleanup of Hanford along the Columbia River will take 30 years total, and the coming central Hanford cleanup will require at least as much work.

"Based on history, do I really want to set a date 30 to 40 years in the future to complete this work?" he asked. "Or do I actually want to have more firm schedules based on all the information I collect over the next 10 years to set it?"

Additional meetings are planned at 7 p.m. Nov. 17 in Seattle; 7 p.m. Nov. 18 in Portland; and 6 p.m. Nov. 19 in Hood River, with more information posted on the calendar at www.hanford.gov.

Written comments may be submitted until Dec. 11. Email Kristen.Skopec@rl.doe.gov or Kristen.Skopec@rl.doe.gov DOE Richland Oper-

Panel wants DOE openness on tank vapors

Committee also won't issue advice on exposure to chemicals

ANNETTE CARY

TRI-CITY HERALD

The Hanford Advisory Board will not be giving the Department of Energy advice in the coming year on efforts to better protect Hanford workers from chemical vapors from underground waste tanks.

The topic is not on the annual agenda, or work plan, that DOE and its regulators approve, although the advisory board had included the topic on its proposed agenda.

The board released a letter Monday that it sent to the Department of Energy saying, "the scope of the restrictions now imposed on board public discussions seems unnecessarily broad."

DOE is named in two lawsuits filed in federal court over worker vapor protection, one

filed by Washington and the other by Hanford Challenge and Union Local 598.

Numerous studies have been done on worker exposure to the chemical vapors during the past two decades, with DOE contractor Washington River Protection Solutions working to implement recommendations made in the latest study. That effort started before the lawsuits were filed.

"The board encourages DOE to revisit the communication restrictions, in hopes of minimizing tank farm information restricted areas to only those which directly bear on the on-going litigation," the advisory board letter said.

Openness will only improve the board's and the public's trust in the DOE safety culture, it said.

"Worker safety has been and will always be a priority for the Department of Energy," DOE said in a statement. "The department will continue to communicate as appropriate

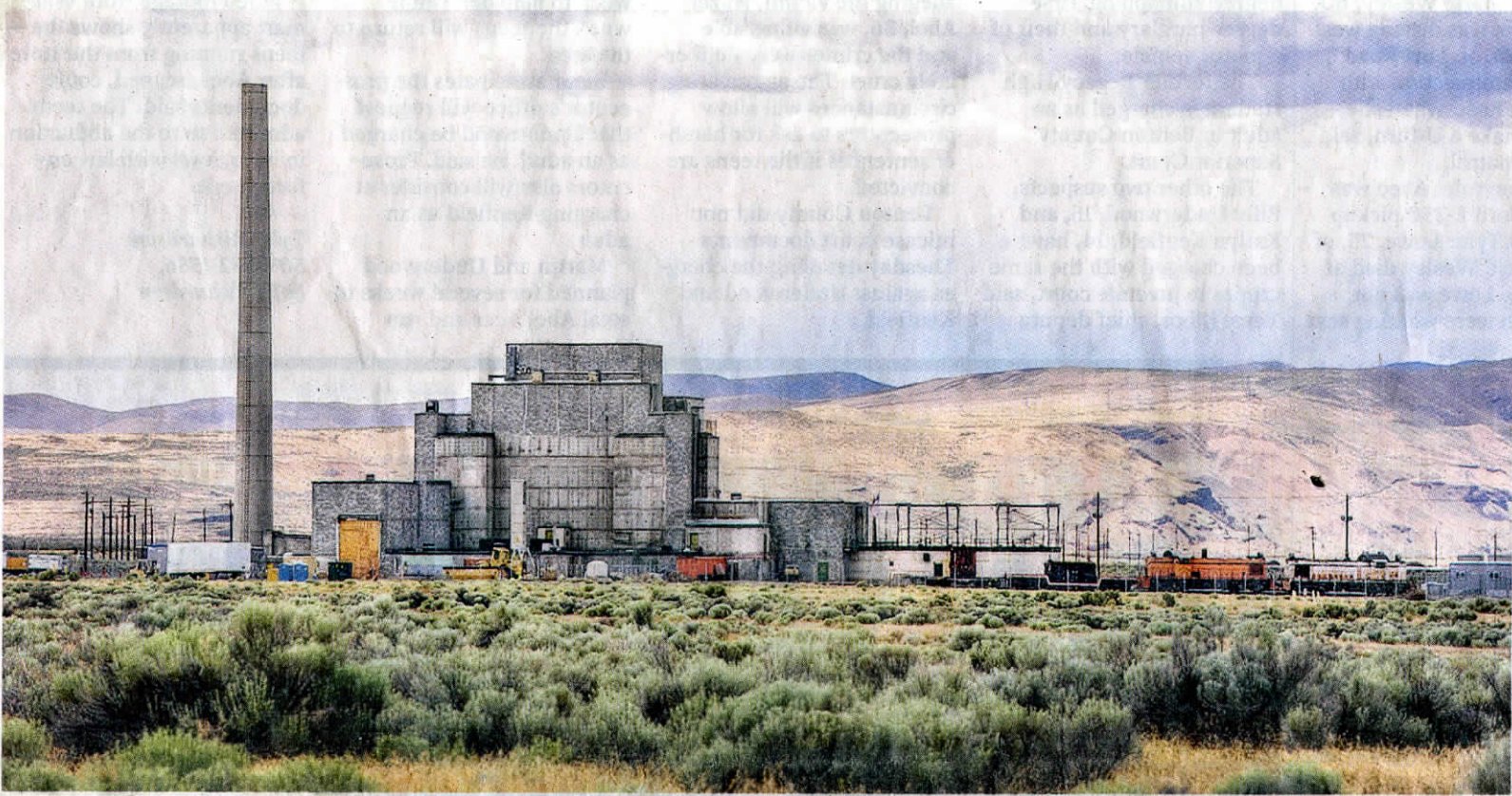
and in consideration of the ongoing litigation."

As long as tank vapor protection is not on the annual work plan, the board will not be given formal briefings that would provide in depth information that would lead to the board issuing advice to DOE and its regulators.

However, the board can request progress reports, and some information was made available in September when the board was given an update on overall progress at the Hanford tank farms and the vitrification plant being built to treat the waste for disposal.

Part of the board's goal in writing the letter was to assure tank farm workers that they are taking the issue seriously, even if there are no plans to issue advice on the topic.

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Courtesy TRIDEC

Hanford's historic B Reactor officially became part of the national park system Tuesday as an agreement was signed by federal officials creating the new Manhattan Project Historical National Park.

Historic and official

11 NOV 15

Federal officials signed the agreement for a Manhattan Project park

The park includes old Hanford buildings and historic B Reactor

The park service pledges to tell a full nuclear story, including consequences



ANTHONY DEYOUNG National Park Service

Interior Secretary Sally Jewell and Secretary of Energy Ernest Moniz hold the historic agreement Tuesday that creates a new Manhattan Project Historical National Park.

BY ANNETTE CARY
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Hanford's historic B Reactor officially became part of the national park system Tuesday morning as an agreement was signed creating the new Manhattan Project National Historical Park.

The new park, number 409 for the nation, also will include the few buildings that remain at Hanford that once belonged to the settlers along the Columbia River. They were forced to give up their homes, farms and businesses to make way for the secret World War II project to produce plutonium for

an atomic bomb.

B Reactor, the world's first full-scale nuclear reactor, was built in 11 months, Sen. Maria Cantwell, D-Wash., pointed out. But it took 11 years to make the new national park a reality.

Interior Secretary Sally Jewell credited grassroots efforts in com-

munities like the Tri-Cities. The new park also includes sites in Los Alamos, N.M., and Oak Ridge, Tenn., that worked toward creating atomic bombs during WWII.

The agreement signed Tuesday in Washington, D.C., directs how

SEE OFFICIAL, 10A

DOE proposes full vit plant start in 2039

DOE and Washington propose further delays in full start of vit plant

State proposes 12-year delay, DOE 17-year delay from current deadline

DOE says some issues should trigger further extensions of proposed deadlines

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy is proposing having the Hanford vitrification plant fully operating in 2039, a delay of 17 years from the current schedule, after a federal judge pressed it for a concrete deadline proposal.

The state of Washington also appears resigned to the plant needing significantly more time to start full operations, proposing a deadline of September 2034.

DOE has been reluctant to propose new deadlines for the vitrification plant as it works to resolve technical issues at the massive and complex plant. It is being built to turn up to 56 million gallons of radioactive waste into a stable glass form for disposal.

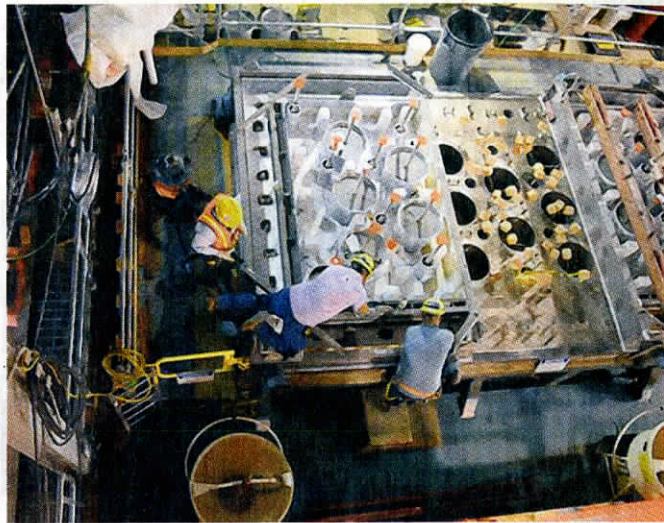
Committing to deadlines when it is unclear what work needs to be done and at what cost leads to missed deadlines, DOE has said.

However, U.S. Judge Rosanna Malouf Peterson ordered DOE and the state of Washington to submit new proposed deadlines by Friday consistent with the work covered in the 2010 consent decree, including a deadline for having all parts of the vit plant operating.

DOE hedged its new proposed deadlines, laying out a plan to extend them if its work falls behind schedule for different reasons. Those would include not having technical issues resolved by a newly announced date of June 30, 2019.

DOE's 2039 start-up date is proposed for having all major facilities at the plant operating simultaneously.

But DOE remains committed to starting up part of the plant as soon as 2022 to glassify low-activity radioactive waste. The major unresolved technical issues at the plant, including the remote possibility of an unplanned nuclear reaction



Courtesy Bechtel National

Hanford vitrification plant employees inspect a melter lid at the plant's Low Activity Waste Facility.

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UNCERTAINTY REFLECTS THE SCARCITY OF NECESSARY INFORMATION, BUT NOT THE ABSENCE OF ADEQUATE EXPERTISE.

DOE in federal court documents

or buildup of flammable gases, involve only high-level radioactive waste.

A year ago, the state of Washington had proposed having all parts of the vitrification plant fully operating in September 2031, but revised its proposal to allow three more years, according to documents it submitted Friday. The extra time gives DOE an additional buffer because of the uncertainty related to technical issues,

the state said in court documents.

New deadlines are being set by the federal court after court-enforced deadlines agreed to in 2010 to resolve a state lawsuit are at serious risk of being missed. The proposals submitted Friday replace those both parties submitted a year ago. The judge found the initial submissions veered too far from the original consent decree on some matters.

The proposals filed Friday address not only the vitrification plant, but when 12 single-shell tanks must be emptied of waste. They also address what would trigger a requirement that DOE build new double-shell tanks to provide additional stable storage space until the waste can be treated for disposal.

VITRIFICATION PLANT PROPOSALS

DOE described its proposal to allow extensions to the deadlines it is proposing for building and operating the

SEE HANFORD, 3A

13 NOV 15
**HANFORD COMMENT
DEADLINE EXTENDED**

The deadline for commenting on new milestones for much of the environmental cleanup of central Hanford has been extended more than a month to Jan. 15.

Cleanup work in central Hanford has been delayed while available money has been spent on environmental cleanup of Hanford along the Columbia River.

The proposed new milestones call for completing investigations and screening possible methods for cleanup of many of the 400 buildings and 1,500 waste sites in central Hanford by 2026, a delay of nearly a decade. Cleanup deadlines would be set after that work was completed.

Three large processing plants — PUREX, REDOX and B Plant — are being considered separately. In June 2026, DOE would be required to submit dates for when they would be cleaned up. Now those dates are due in fall 2022.

Comments may be emailed to Kristen.Skopeck@rl.doe.gov.

— TRI-CITY HERALD

TANK FARMS

Atkins to buy EnergySolutions' Hanford work

WS Atkins signs \$318 million agreement to purchase EnergySolutions division

Sale includes EnergySolutions' part ownership of the Hanford tank farm contractor

Atkins plans to hire about 650 EnergySolutions workers

BY ANNETTE CARY
acary@tricityherald.com

WS Atkins has signed an agreement to purchase part of EnergySolutions, including its work at the Hanford tank farms.

Washington River Protection Solutions, which holds the Department of Energy contract for managing Hanford tanks that hold 56 million gallons of radioactive waste, is a limited liability corporation owned by AECOM and EnergySolutions.

WS Atkins is purchasing EnergySolutions' projects, products and technology segment for \$318 million. The division reported an adjusted operating profit of \$30.7 million in 2014 and as of the end of September had assets of \$171.3 million.

Atkins will hire about 650 EnergySolutions workers as part of the agreement to acquire EnergySolutions' North American government, Europe and Asia businesses. It includes the projects associated with EnergySolutions' Richland

office and its work at Hanford.

The Richland office has been involved with technology used at Fukushima, Japan, to remove a range of radionuclides from contaminated water.

EnergySolutions built the EnergySolutions Engineering Laboratory in north Richland and donated it to Washington State University Tri-Cities in August 2012, with a plan to lease it back until testing is completed related to keeping radioactive waste well mixed at the Hanford vitrification plant.

Atkins said in a statement that the 650 EnergySolutions employees it will hire are professionals in great demand, and the EnergySolutions management team will help grow Atkins' nuclear business.

"This acquisition accelerates our nuclear strategy and creates a global platform," said Uwe Krueger, Atkins chief executive, in a statement Tuesday.

Atkins, which is listed on the London Stock Exchange,

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THIS ACQUISITION ACCELERATES OUR NUCLEAR STRATEGY AND CREATES A GLOBAL PLATFORM.

Uwe Krueger, WS Atkins chief executive

employs about 18,600 people in the United Kingdom, North America, the Middle East, Asia Pacific and Europe. It offers design, engineering and project management services. In the Northwest, it has offices in Portland and the Seattle area.

EnergySolutions' remaining business lines will focus on transportation, logistics, processing and disposal, including decommissioning of commercial nuclear power plants. It will continue to work with DOE on waste disposal, including at its Bear Creek, Tenn., radioactive waste processing facility.

The sale is expected to close in early 2016.

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Group calls for stop to vit plant work

BY ANNETTE CARY
 acary@tricityherald.com

Hanford Challenge is calling for a halt to work on the Hanford vitrification plant after the Department of Energy proposed a new court-enforced deadline that would not require all parts of the plant to be operating simultaneously until 2039.

The deadline agreed to five years ago for full operation of the plant was in 2022, making DOE's proposal a 17-year delay. The state of Washington, the regulator on the project, has proposed a new deadline of September 2034.

"Hanford Challenge wants Hanford's highly radioactive tank waste immobilized in glass, but this path is not going to get us there," said Tom Carpenter, Hanford Challenge executive director, in a statement.

Hanford Challenge is a Seattle-based watchdog group.

The vitrification plant is being built to turn up to 56 million gallons of radioactive waste into a stable glass form for disposal. The waste is left from the past production of plutonium at the Hanford nuclear reservation for the nation's nuclear weapons program.

Hanford Challenge wants DOE to immediately start building 12 new storage tanks to add to the 27 usable double-shell tanks that now hold some of Hanford's waste waiting for vitrification. The waste is being emptied from leak-prone single-shell tanks into the sturdier double-shell tanks until it can be treated for disposal.

An independent organization should be established to design a new path forward

for treating the waste and to determine if the vitrification plant can be salvaged, Hanford Challenge said.

The vitrification plant "has seen nothing but delay and more delay," Carpenter said. "By 2039, much of the plant equipment will be obsolete, equipment and pipes corroded and unreliable. It will be a safety nightmare."

DOE already has spent \$19 billion toward projects to treat the waste held in underground tanks, he said, quoting a Government Accountability Office report. There have been seven previous projects attempted since 1989, including a proposed \$4.6 billion pilot plant, before work started on the current vitrification plant project.

DOE has resisted calls to build more tanks, saying they would cost \$85 million to

\$125 million each. Money would be better spent on emptying leak-prone tanks and working toward treatment of the waste, it has said.

"DOE remains committed to the successful completion and operation of the (vitrification plant) as a method for processing tank waste stored in underground tanks at Hanford, thereby reducing risks to the environment," DOE said in a statement Monday.

It pointed out that it is working toward a sequenced approach to completing the plant, with some low-activity radioactive waste vitrified as soon as 2022. That would have the added benefit of freeing up double-shell tank space to allow more single-shell tanks to be emptied, it said.

Starting treatment of low-activity waste as soon as possible, while continuing to work on resolution of technical issues related to high level radioactive waste, would be the "appropriate, practical and safest solution," DOE said.

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 @HanfordNews

Faulty vit plant purchases costly for DOE

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**Inspector General audit finds
Bechtel may take years to spot
purchases that don't meet
specifications**
.....

.....
**Only a portion of costs for faulty
work is recovered from vendors**
.....

.....
**DOE says problems identified in
audit were previously discovered
by DOE or Bechtel**
.....

BY ANNETTE CARY

acary@tricityherald.com

The Hanford vitrification plant contractor, Bechtel National, has been slow to spot problems with items it purchases for the huge plant and has not been aggressive enough about recovering the costs, according to a new audit by the Department of Energy Office of Inspector General.

In one example, Bechtel did not identify piping for high-level radioactive waste that had a bend 90 degrees off from specifications until September 2013, more than nine years after it was delivered to Hanford, the audit said.

In another example, Bechtel recovered only \$29,100 of the \$138,822 cost of rework for duct support welds at the plant's High Level Waste Facility, the audit said.

DOE officials told the Office of Inspector General they are "encouraged" that all findings in the audit had been previously identified either by DOE or Bechtel.

The Office of Inspector General countered that it took the audit to point out the magnitude of the issue, DOE's ineffective oversight and Bechtel's problems resolving the causes.

Low-activity waste facility almost 80 percent finished

Construction, even early start up activities continue on parts of plant that will not deal with worst of radioactive materials

Technical issues on remainder of plant to be resolved in 2019

BY ANNETTE CARY
acary@tricityherald.com

Progress is being made on the portions of the Hanford vitrification plant that do not have to contend with the worst of the radioactive waste that will be sent to the plant.

At least 80 percent of the design, purchasing and construction has been completed on the buildings at the vitrification plant other than its two largest facilities, the Pretreatment Facility and the High Level Waste Facility.

Construction on the Pretreatment Facility and part of the High Level Waste Facility has stopped until technical issues related to high level waste are resolved.

But work continues on the plant's 65-acre campus on the Hanford nuclear reservation, with work being done at its two other major facilities, the Low Activity Waste Facility and the Analytical Laboratory. Work also continues on about 20 smaller support facilities on the campus.

Start-up activities for

those buildings that will not handle high-level radioactive waste is about 7 percent complete.

DOE has proposed a plan to start operating those facilities to glassify low-activity radioactive waste as soon as 2022.

Design, procurement and construction on the Low Activity Waste Facility, where melters will turn low-activity waste into a stable glass form for disposal at Hanford, is at least 75 percent complete, according to the Department of Energy. The building will measure 330 feet by 240 feet and stand 90 feet tall.

The 115,000 feet of piping for the building started to arrive at the plant in late 2003. Earlier this year the last of the bulk piping for the building arrived at Hanford.

More than 110,000 feet of piping has been installed, or nearly 21 miles, with the final installations expected to be completed in 2017. Piping ranges from one-half inch in diameter to 24 inches in diameter.

Other recent work at the building has included placing a cement-like material, called castable refractory, into the lid of one of the two radioactive waste glass melters.

It resembles wet contract when mixed, and it hardens to provide heat resistance for the glass melters. Each glass melter lid contains almost 200 cubic feet of refractory and weighs 25.5 tons, according to Bechtel

75

percent of design, procurement and construction completed at Low Activity Waste Facility

21

miles of piping installed in Low Activity Waste Facility

95

feet is planned height of High Level Waste Facility

National.

The completed melters will weigh 300 tons each and will be the largest waste glass melters in the world, according to Bechtel.

Construction work on the Analytical Laboratory, which will measure 320 feet by 180 feet, is considered at least 96 percent complete. The state of Washington, the regulator on the project, agreed in court documents that construction of the lab is substantially completed.

Because DOE and the state have agreed that the best course of action is to start treating low-activity waste while technical issues related to high-level waste are resolved, the lab is not being outfitted now with the hot cells and other analytical equipment that would be used for high-level radioactive waste. Technical issues include a small

chance of an unplanned nuclear reaction and corrosion of equipment in the plant.

The lab will be used to ensure that all the waste-containing glass produced at the vitrification plant meets regulatory requirements and standards. Each year, the lab will analyze about 10,000 waste samples, according to Bechtel.

Samples initially will be used to confirm that the correct recipe of glass-forming material is used to produce the glass. Samples also will be taken throughout the vitrification process to ensure a high-quality glass product.

The smaller support facilities, including the steam plant and other buildings that comprise the infrastructure to support processing at the plant, are at least 80 percent constructed.

Some construction continues on the High Level Waste Facility as technical issues are resolved.

Work has been done on the 58-foot elevation — the fifth of six levels of the plant that will stand 95 feet high.

DOE expects that the major technical issues that affect high-level radioactive waste at the Pretreatment Facility and the High Level Waste Facility will be resolved by September 2019. Design changes could follow.

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13 DEC 13

Opening doors to compensation

applied for compensation under the Energy Employees Occupational Illness Compensation Program, they were denied.

A government agency, the National Institute of Occupational Safety and Health, estimated their father's exposure to radiation using historical records and concluded that the chance of Hanford radiation exposure causing his colon cancer was just 41 percent.

The program pays \$150,000 in compensation to workers or their survivors if the government determines that there is at least a 50 percent chance that exposure from nuclear weapons work caused the cancer.

The program began accepting claims in 2001 for workers who developed cancer. By 2005, the government had a record of denying more than three times as many claims as it accepted at Hanford, finding that the worker had not been exposed to enough

SEE COMPENSATION, 11A

Daughters of former Hanford worker advocate for easing payment rules

60 percent of claims for Hanford workers in Part B have been approved

Total amount paid at Hanford and PNNL for all exposures and medical coverage comes to \$1.4 billion.

BY ANNETTE CARY
acary@tricityherald.com

Rosemary Hoyt was 10 years old when her father, a former Hanford worker, died at the age of 47 of colon cancer.

He did construction and maintenance work at the nuclear reservation from the site's earliest years in World War II until 1961, when his cancer made him too ill to pass a physical, Hoyt said.

When he died, he left two young daughters, a widow who struggled to find employment that would support the family and the med-



Courtesy Department of Energy

Small trailers housed 3,600 people in 1944 at the Hanford camp.

ical bills from five major surgeries with no insurance.

Decades later when Hoyt, with her sister, Mary Ann Carrico,

15 DEC 15

Leaking Hanford tank to be emptied within 3 months

Concerns raised about keeping radioactive sludge from overheating

Estimated 60 gallons of waste has leaked

State wants DOE to start emptying tank by March 4

BY ANNETTE CARY
acary@tricityherald.com

Workers should begin emptying waste from the Hanford double-shell tank with a leak from its inner shell in fewer than three months, according to the Department of Energy and the state of Washington.

The leak within the oldest of Hanford's double-shell

waste storage tanks, Tank AY-102, was discovered in 2012. But the state agreed to allow DOE until March 4 of next year to start emptying the tank after concerns were raised about keeping its radioactive sludge from overheating.

DOE said last year that the spring 2016 deadline would provide enough time to have equipment in place to retrieve

not only the liquid portion of the waste in the tank but also the radioactive sludge that sits beneath it. The liquid helps cool the sludge, which generates heat.

The engineering work for the project has been completed and construction and installation of equipment is 85 percent complete for the waste retrieval work, said Reggie Eakins, the technical program manager of the project for DOE, at a recent committee meeting of the Hanford Advisory Board.

DOE has spent about \$58 million on the project and expects to spend \$25 million more to complete waste retrieval.

60

gallons of waste is believed to have leaked into the space between the tank's shells

\$58 MILLION

Amount DOE has spent on project

\$25 MILLION

Additional amount DOE expects to spend to complete it

Plans call for starting retrieval with a set of sluicing systems inserted into the top of the enclosed tank. The systems, which have been used for more than a decade at Hanford to empty single-shell waste tanks, use a jet of recycled liquid to dissolve and move waste

SEE LEAKING, 4A

10 Dec 15

Contractor notified of concerns after accident

Worker cut hand on wire cable, requiring 25 stitches

Enforcement letter says contractor didn't detail all issues needed to prevent recurrences; no fine issued

BY ANNETTE CARY

acary@tricityherald.com

The Department of Energy Office of Enforcement has concerns about Hanford contractor Mission Support Alliance's handling of an accident in May, but has elected not to issue a fine.

On May 1, a wire cable on a 135-ton crane was being rewound onto a spool as a rigger stood on a platform facing a spool winch drum. The ironworker was wearing gloves and had one hand on the crane's cable guard. The cable anchor caught the worker's hand as the drum turned, causing cuts that required 25 stitches.

MSA investigated the incident and prepared a report analyzing the cause and outlining actions to prevent similar accidents.

However, the Office of Enforcement found the report did not detail all of the issues needed to prevent a recurrence, director Steven Simonson stated in an enforcement letter to MSA.

The report's shortcomings included failing to recognize that inadequate communication among workers was a factor in the accident, Simonson said. The report also did not recognize that DOE safety regulations prohibit overreliance on safety rules and procedures rather than structural features that could prevent accidents.

MSA relied solely on rules

and procedures to protect the worker, even though physical safety features were identified after the accident occurred, Simonson said.

A list of hazards had been prepared, but the automated analysis wasn't specific to the type of crane involved in the accident. Of 21 cranes used by MSA at Hanford, the crane involved was one of two with the drum in a position that created a hazard, Simonson said.

MSA also failed to ensure there was adequate communication among the rigger, spotter, signalman, work leader and crane operator for the spooling and for a quick response to an accident, Simonson said.

The drum continued to rotate as the injured worker climbed down from his platform near the front of the crane and reported his injury to the work leader at the rear of the crane.

Quick action by the operator could have prevented serious injury or a fatality because of multiple places where the worker or loose clothing could have been caught in a pinch point, Simonson said.

MSA resumed spooling the cable three hours later without identifying and addressing the conditions that led to the accident, Simonson said. Other workers were exposed to a now-recognized hazard, and evidence that could have been used to analyse the accident cause was not preserved.

MSA is working with Hanford DOE officials to address concerns raised by the letter.

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16 DEC 15

State, DOE spar over deadlines, spending

Federal judge to meet with technical experts in February or March

State objects to automatic deadline extensions, among other issues

DOE resents state, court intrusions into technical matters

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy is attempting to rewrite the Hanford consent decree to minimize DOE's accountability and the federal court's ability to enforce the decree, according to the state of Washington.

"The state is profoundly disappointed," wrote the state's attorneys in the latest

round of court filings on amending the 2010 consent decree.

The decree sets deadlines for building and operating the Hanford vitrification plant and for emptying certain leak-prone single-shell tanks of radioactive waste at the nuclear reservation.

DOE is no happier with the state's latest proposal. It would intrude into areas that are, by law, the exclu-

sive authority of the federal government, dramatically expand the scope of the decree and hinder progress, DOE said.

The latest round of court filings could be the last before U.S. Judge Rosanna Malouf Peterson sets new deadlines, according to the state. She is *considering* new deadlines after it became clear that DOE cannot meet the current deadlines.

The judge has notified a panel of technical experts that she plans to meet with them to discuss the filings in February or March, but has not indicated when a ruling may be expected.

DOE has proposed having the vitrification plant fully

New agreement comes in at \$2.3B

“ THIS WAS A POSITIVE SIGNAL AND A NICE CHRISTMAS PRESENT.

Gary Petersen, TRIDEC

Budget is \$78.7 million more than administration request

Vit plant, tank money would increase \$200 million from current budget

Some money added to administration's request would be used for cleanup along the river

BY ANNETTE CARY
acary@tricityherald.com

A Hanford budget of \$2.3 billion for the fiscal year that began in October has been proposed as part of the bipartisan appropriations bill worked out by congressional leaders overnight Tuesday.

It is \$78.7 million more than requested by the Obama administration for fiscal 2016 and higher

than the current Hanford budget.

“This was a positive signal and a nice Christmas present,” said Gary Petersen, Tri-City Development Council vice president of Hanford programs. “Thank you, Patty and Dan.”

Rep. Dan Newhouse, R-Wash., got some money that had been planned to be cut put back into the House version of the Hanford budget earlier this year. Then

Murray “did the yeoman’s lift” to get the proposed budget to its current level, Petersen said.

“The federal government has a legal and moral obligation to clean up Hanford, which is why I fight year in and year out to make sure that commitment is maintained

MORE INSIDE

Spending package has many benefits for the Mid-Columbia. **Page 9A**

SEE HANFORD, 9A

Potentially contaminated equipment sent off site

Radioactive contamination found on air coolers in trunk of Kennewick car

State says levels found do not present public safety risk

No contamination found in coolers sent to Ohio, Pennsylvania

BY ANNETTE CARY
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The Department of Energy has checked for radiation contamination in three states after potentially contaminated equipment left the Hanford nuclear reservation.

Contamination was found at Hanford this past week in cooling

systems used within protective suits worn by workers at parts of the Plutonium Finishing Plant that have high levels of airborne radioactive contaminants.

This week, Hanford officials discovered that another 11 of the cooling systems had been sent outside of Hanford for mechanical work in October. They were

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THERE IS NO SAFETY OR HEALTH RISK TO WORKERS, THE PUBLIC OR THE ENVIRONMENT FROM THESE PIECES OF EQUIPMENT.

Erik Olds, Department of Energy

tracked to Kennewick, Cincinnati and Pittsburgh, DOE said.

Two of the systems that left the site were discovered to have radioactive contamination at such low levels that they were not

SEE SITE, 9A

3 JAN 16

One more Hanford waste tank considered emptied

2015 ends with DOE checking radioactive waste Tank C-102 off list

Two more C Farm tanks not emptied 15 months after deadline

Vacuum demonstration for suspected leaker tanks not expected to resume



Courtesy DOE

A sluicer, wrapped in plastic to prevent the spread of radioactive contamination, was removed from Tank C-102 partway through waste retrieval and replaced.

heimer, a tank engineer with the state Department of Ecology, a regulator on the project. Hanford needs a way to empty tanks that are in danger of leaking.

The vacuum system adds small volumes of liquid and quickly vacuums it up. The more commonly used sluicers use a larger volume of liquids to break up waste and move it toward a central pump.

The tally of single-shell tanks emptied to regulatory standards now stands at 15 of 149. All but one are in the C Tank Farm.

The waste is transferred to newer double-shell tanks, where it will be stored until the vitrification plant is ready to start treating the waste for permanent disposal.

The most recent tank to be emptied, C-102, had nearly 300,000 gallons of waste removed. It amounts to 95 percent of waste retrieved, although the goal is

to retrieve an average of 99 percent of the waste from all single-shell tanks.

About 15,500 gallons of waste remains in Tank C-102, or about 2,100 cubic feet. The target was to get down to 360 cubic feet of waste, or the equivalent of about 1 inch of waste if it were evenly spread over the bottom of the 530,000-gallon-capacity tank.

However, the state can agree to consider a tank empty to regulatory standards when the limits of technology are reached.

What remains in the enclosed, underground tank is rock hard, Alzheimer said. Some of it is sandy and some is in concrete-like chunks. The bottom of the tank is fairly clear, but there are mounds of waste on the side of the tank that have been difficult to retrieve.

Retrieval was done with an enhanced-réach sluicer starting in April 2014. The tool was lowered into the

tank and then extended to get a nozzle to spray liquid as close as possible to the waste. The liquid was used to break up the waste and move it toward a pump for removal. A high-pressure water system also was used.

When possible, recycled liquid waste was used, rather than water, for the retrieval work to prevent the creation of more waste.

"There was substantial effort from the workers to plan, prepare and retrieve this radioactive waste," said Chris Kemp, deputy DOE project director for the tank farms, in a statement.

Work is ongoing to empty Tank C-111, with about 29 percent of the waste retrieved.

"Work is going fairly quickly," Alzheimer said. As much as 2 percent of the waste has been retrieved on some days, although cold weather slows progress because of condensation issues in the ventilation system that result in false positive sensor readings.

The tank had 35,000 gallons of waste when pumping was last done in November 2010.

Caustic was added to the tank in November to soften the waste, speeding up retrieval in December.

"It's been a very effective way to get going," Alzheimer said.

Retrieval of waste from Tank C-105, which began in summer 2014, has been problematic.

Waste has been emptied with a Mobile Arm Retrieval System, or MARS, the largest and most robust system used to retrieve waste in Hanford's underground tanks.

For the first time, MARS has been used with vacuum attachments, because Tank

BY ANNETTE CARY

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The Department of Energy ended 2015 able to claim another one of Hanford's leak-prone single shell tanks emptied of waste to regulatory standards.

That leaves two more tanks in the group called C Tank Farm yet to be emptied of their mixtures of radioactive and hazardous chemical waste left from the past production of plutonium.

The court-enforced consent decree required that all 16 C Farm tanks, which were built during World War II, be emptied 15 months ago. A federal judge is expected to set new deadlines.

The most recently emptied tank, the only one completed in 2015, is Tank C-102. Rapid progress is being made on Tank C-111. But Tank C-105 remains a problem.

Work has stalled there to demonstrate a robotic vacuum system that can be used on tanks suspected of leaking in the past. Work with the system is not expected to resume.

"It's going to be an important issue," said Jim Al-

8 JAN 16

Deep borehole test could help Hanford

DOE prepares to drill test borehole in crystalline rock formation

Hanford cesium, strontium capsules are candidates for borehole disposal

Capsules were to go to Yucca Mountain, Nev.

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy is preparing to drill a test borehole more than 3 miles deep in a North Dakota rock formation to study a disposal method that could be used for some of Hanford's radioactive waste.

A team led by Battelle Memo-

rial Institute in Columbus, Ohio, has been chosen to drill the test borehole near Rugby, N.D.

"This is an important first step to increasing our scientific understanding of the the potential uses for crystalline rock formations, including the feasibility of boreholes as an option for long-term nuclear waste disposal," said Energy Secretary Ernest Moniz in a statement.

He previously has discussed deep boreholes as a promising option for disposal of 1,936 radioactive cesium and strontium capsules stored underwater in central Hanford.

The material was removed from high-level waste tanks at Hanford in 1972 to reduce the temperature of the waste inside those tanks. The waste is left from the past processing of irradiated fuel to remove plutonium for the nation's nuclear weapons program.

DOE plans a \$35 million, five-year project to test the boreholes on about 20 acres of state-owned land in North Dakota.

The field test will look at science and engineering challenges, including drilling techniques,

SEE TEST, 11A

Public comments invited on Hanford national park

Open house planned Feb. 4

Biggest change this year
to be more school visits

Japanese mayors offer
artifacts to show damage
wrought by atomic bombs

BY ANNETTE CARY
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Tri-City area residents can provide early input on plans for the new Manhattan Project National Historical Park when Department of Energy and National Park Service officials meet in the Tri-Cities in February.

The public is invited to an open house from 5:30 to 7:30 p.m. Feb. 4, at the Richland Library to comment on the park, which will include Hanford's historic B Reactor and other historic areas of the nuclear reservation.

The park service is interested in what locals want included in the park, the stories that should be told, what challenges the park may face and what experiences visitors should have.

This will be the public's first chance to provide input

since the park was dedicated in November, but there will be many other opportunities in the next few years, said Tracy Atkins, project manager for the park. Manhattan Project sites at Oak Ridge, Tenn., and Los Alamos, N.M., in addition to Hanford will tell the story of the development of the atomic bomb during World War II.

Information is being collected for an initial planning document, called a Foundation Document, being written to describe the purpose of the park, its significance to the nation, the resources it should preserve and protect, and broad themes for the information that should be presented to visitors.

The park service plans a deliberate process with thoughtful planning as the park is created during the next three to five years, Atkins said.

Visitors may not initially see many changes to Hanford access. The main change this year will be a new focus on school class visits to B Reactor, the world's first full-scale nuclear reactor, now that age restrictions have been dropped. Last year, visitors had

to be at least 12 years old.

Tours of Hanford sites that tell the story of life before the land was turned into a nuclear reservation also may be expanded in the coming year. The pre-Manhattan Project sites include the White Bluffs Bank and Hanford High School that residents left behind when forced to evacuate to make room for a secret military project during WWII.

One of the park service's first steps after the Energy and Interior departments signed a joint agreement officially launching the park was to gather experts in history, archaeology and other topics to brainstorm potential themes to address as exhibits are prepared.

A newly released report from the session lists potential themes, from illustrating the impact of secrecy and displacement on families during the war, to explaining basic physics central to the project, to exploring questions of how to support peace in a nuclear age.

The gathering of 19 scholars included two from Japan.

"The Manhattan Project has a complex and controversial place in American

and world history," wrote Cynthia Kelly, of the Atomic Heritage Foundation, in a document prepared for the session.

Many people agree with President Harry Truman's statement that the atomic bomb "was the greatest achievement of organized science in history." They agree that it brought an end to WWII and has deterred another global war for more than 70 years, Kelly wrote.

Others consider the bombing of Japan morally wrong, and believe the Cold War proliferation of nuclear materials has imperiled the world, she said.

The new park should promote critical reflection, she said.

The mayors of Hiroshima and Nagasaki, Japan, also sent a letter to the forum.

"It is necessary to fully describe what happened to the people under the mushroom clouds," including women, children and the elderly, they wrote. The cities have offered to provide A-bomb artifacts and photos for the park to demonstrate the damage wrought by the bombs.

Although the mayors have reservations about the park, they said it might contribute to the realization of a world free from nuclear weapons.

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Strong evaluation for Hanford medical services provider

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Kennewick company rated 'excellent' in category of worker health, well-being
.....

BY ANNETTE CARY
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The occupational medical services provider at Hanford received almost 90 percent of the incentive pay possible from the Department of Energy for its work in the fiscal year that ended in September.

HPM Corp. of Kennewick will be paid \$287,680 out of the \$320,000 possible.

"The contractor exceeded the majority of performance goals and objectives for the performance period," DOE said in a summary released Friday.

DOE rated HPM "excellent" in the area of worker health and well-being, which accounts for 25 percent of the possible pay.

The measure considers an independent annual assessment and the contractor's

response to worker concerns brought to its attention.

It received ratings of "very good" for operational effectiveness, which accounts for 40 percent of the pay available, and for customer satisfaction, which accounts for 35 percent of the pay available.

Customer satisfaction is based on surveys, including patient satisfaction surveys. Operational effectiveness is based on HPM's communication with parties ranging from other DOE contractors

to the Hanford Advisory Board and on the quality of service it provided to the Hanford program to protect workers from the metal beryllium, which can cause lung disease.

No significant deficiencies were listed in the summary of the pay determination DOE made public.

Among the contractor's significant achievements was its superior work in the beryllium program, the summary said.

It also praised HPM for

continuing to provide "superior worker health and well-being support" for Hanford. Customer satisfaction for patients and other site contractors improved last year, it said.

HPM's performance in fiscal 2015 was comparable to fiscal 2014. Then it received almost 91 percent of possible incentive pay.

DOE awarded HPM a contract in 2012 estimated to be worth \$99 million over a period of six years, to provide occupational medical services to employees of DOE and environmental cleanup contractors at Hanford.

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DEATHS

GWEN C. BRAY

Gwen Charlotte Bray, 80, of Richland, died Jan. 9 in Richland.

She was born in Kalamazoo, Mich., and lived in the Tri-Cities for 68 years.

She was a retired registered nurse.

Einan's at Sunset, Richland, is in charge of arrangements.

DOROTHY HAMBLEN

Dorothy Hamblen, 88, of Kennewick, died Jan. 8 in Richland.

She was born in Sacramento and lived in the Tri-Cities for 10 years.

She was a homemaker. Mueller's Tri-Cities Funeral Home, Kennewick, is in charge of arrangements.

4 JAN 16

SPEED LIMIT COULD RISE ON 2 HANFORD ROADS

The speed limit on two stretches of road on the Hanford nuclear reservation could be increased from 55 mph to 60 mph after the Tuesday meeting of the Benton County commissioners.

Commissioners are expected to approve raising the speed limit on the stretch of Route 11A from near the Yakima Barricade east to milepost 6, which is about a mile east of the Route 4 North intersection, and on the stretch of Route 10 from its intersection with Highway 240 north to near the Wye Barricade.

COMMENT PERIOD 20 JAN 16 **EXTENDED ON CENTRAL HANFORD DEADLINES**

The public comment period for extensive changes to deadlines for environmental cleanup work in central

Hanford has been extended until Feb. 12.

This is the second extension to the comment period, which began Oct. 26. It was requested by Seattle-based Hanford Challenge.

Some of the proposed new deadlines would be pushed out by almost a decade, and some requirements to set deadlines would be delayed until more information is available.

The deadlines would cover much of the remaining cleanup work in central Hanford, other than work related to Hanford's underground waste tanks. They also would cover some key work yet to be finished near the Columbia River.

Details are posted at www.hanford.gov on the event calendar on each day of the public comment period.

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JAN 16

2015 WAS WARMEST YEAR ON RECORD AT HANFORD

The year just past was the warmest at Hanford since records began being kept during World War II, according to the Hanford Meteorology Service.

Temperatures averaged 57.5 degrees, which was 3.6 degrees above normal. It easily beat the record of 56.4 degrees, which was the average for 1992 and 1998.

The hottest temperature in 2015, as recorded at the Hanford Meteorological Station, was 111 degrees on June 28. The coldest was 11 degrees on the first day of the year.

The coldest year on record was 1985, when temperatures averaged 49.6 degrees.

— TRI-CITY HERALD

13 JAN 16

HANFORD GUARDS TO VOTE ON TENTATIVE LABOR AGREEMENT

Hanford security guards will vote on a new contract Jan. 26 after a tentative agreement was reached late Monday night.

"There was good bargaining by both sides," said Ed Pacheco, president of the Hanford Guard Union. Union officials are recommending a "yes" vote.

Guards will be working under a third contract extension through Jan. 26, after the current contract extension expires later this week. The contract with Mission Support Alliance initially had been set to expire at the end of October.

23 JAN 16

Department of Labor says nuclear facilities are much safer since 1995

Workers and advocates worry it will be more difficult to prove their claims

A fight is under way to get new policy repealed in order to protect sick employees

BY LINDSAY WISE, ROB HOTAKAINEN AND FRANK MATT

McClatchy Washington Bureau

WASHINGTON

Abelardo Garza was working near tanks full of toxic sludge at the Hanford Site last Aug. 14

when one of his co-workers noticed a strange smell.

Within minutes, Garza's nose started bleeding. The next morning, he awoke gasping for breath.

It was the fourth time in five years that Garza would end up in the hospital after suspected exposure to chemical vapors at

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ALL OF SUDDEN THERE WAS SOMETHING IN THE AIR THAT JUST MADE ME SHAKE MY HEAD.

John Swain, tank farm worker

Hanford.

Now Garza, 65, worries that a new federal directive the government says was intended to speed up compensation claims by sick and dying nuclear workers could harm his chances of qualifying for benefits if his health worsens in the future.

The directive, which became effective in December 2014, orders claims examiners to conclude that workers at Department of Energy nuclear facilities have not had any significant exposure to toxins since 1995 “in the absence

SEE CASES, 12A

LIGO

17 JAN 16

Run ends amid alleged success

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Observatory completes first run since overhaul to improve detection capability
.....

Officials not commenting on Twitter rumor that gravity wave was detected
.....

Extensive data from run still being analyzed
.....

BY ANNETTE CARY
acary@tricityherald.com

Results are being analyzed after the initial run of a gravitational-wave observatory near Richland following a major upgrade and revamp of the scientific facility and its twin in Louisiana.

The run, which started in September, was completed Tuesday.

The Laser Interferometer Gravitational-wave Observatory, or LIGO, located on Hanford land, operated from 2002-10 without detecting a gravitational wave from outer space. But extensive improvements to the scientific facility before a restart in 2015 increased the sensitivity of detection instruments by a factor of 10.

The day before the latest run ended, a rumor circulated on Twitter, started by theoretical physicist Lawrence Krauss of Arizona State University, that the improved scientific facilities may have detected a gravitational wave.

Science Magazine reacted with skepticism, saying there are reasons to doubt the rumor will hold up. False signals are injected into data to test sensitivity of analysis techniques, it said.

"We are really not going to say much," said Fred Raab, head of the Hanford LIGO.

Scientists still are vetting the early data from the run produced by complicated instruments with hundreds of thousands of data chains, he said.

Results will be announced in papers published in scientific journals, as is done after each LIGO run. Publication is likely at least a month away.

However, some data that could indicate events of note are shared with astronomy groups, Raab said.

Until data is analyzed, it is unknown whether the data represents real events.

At the Hanford LIGO, end-of-run measurements were taken this past week, and tests were conducted to assess environmental influences, like noise, on the delicate equipment of the detector.

HANFORD

Tank farm contractor rated 'very good'

Washington River Protection Solutions received 88 percent incentive pay for year

Needs to work on equipment reliability

Praised for implementing vapor protection recommendations

BY ANNETTE CARY
acary@tricityherald.com

A Hanford tank farm contractor will receive 88 percent of the incentive pay possible for fiscal 2015, according to the Department of Energy.

The pay of \$13.7 million out of a possible \$15.6 million is in addition to the performance pay that Washington River Protection Solutions earned for the fiscal year that ended Sept. 30. It earned 100 percent of \$14.4 million available for completion or progress on specific projects, such as emptying waste from leak-prone single shell tanks and evaporating liquid waste to create more space in double-shell tanks.

The \$13.7 million award is for subjective ratings by DOE about how well its contractor managed work, kept costs down and maintained safety, among other goals.

"We appreciate the Department of Energy's recognition of our strong fiscal year 2015 performance," said Mark Lindholm, Washington River Protection Solutions president.

Its performance was rated better than in fiscal 2014. Then it received 83 percent of the incentive award available, or \$10.5 million out of a possible \$12.6 million.

In fiscal 2015, the contractor "exceeded many of the significant award fee criteria and has met overall cost, schedule and technical performance requirements," DOE said.

Washington River Protection Solutions was rated in eight areas, receiving an overall rating at the top of the range considered "very good." It received ratings of very good in all categories, except two that were rated as "excellent." They were management of the tank system, worth up to \$2.7 million, and nuclear safety, worth up to \$1.2 million.

The largest portion of the possible award, \$4.5 million, was available for cost performance, with the contractor ranked in the "very good" range. DOE released only a one-page fee determination scorecard on the pay award, which did not include the amount awarded for each category.

DOE listed three key areas for improvement on the score card, all of which were ongoing issues identified before fiscal 2015. There were "challenges with work integration, command and control of nuclear operations, and ongoing equipment failures," the scorecard said.

Safety issues reportedly have involved procedures to make sure electrical service is locked off before work proceeds on equipment. No injuries resulted in fiscal 2015.

The contractor also has struggled with equipment performance in the harsh environment within underground tanks holding a mix of hazardous chemical and high-level radioactive waste. The custom equipment has to withstand high heat, radiation and chemical corrosion, sometimes throughout heavy use.

A year ago work had stopped with the Mobile



Courtesy DOE

A pump is lifted from double-shell Tank AP-02 to replace it with a more efficient pump for work to accept waste from the Hanford double-shell tank with a leak between its shells. In fiscal 2015, Washington River Protection Solutions "exceeded many of the significant award fee criteria and has met overall cost, schedule and technical performance requirements," DOE said.

Arm Retrieval System, or MARS, the contractor's largest and most robust system for retrieving waste from underground tanks, because progress was so slow using a vacuum attachment.

Although MARS was restarted, work with the system has stopped again because hoses failed because of heavy use.

DOE said the key successes for the year were the contractor's leadership in taking over responsibilities for the Effluent Treatment Facility and implementing recommendations from an independent study to better protect workers from chemical vapors. DOE also praised efforts to integrate work among the tank farms, the vitrification plant being built to treat the waste and Pacific Northwest National

ment, as well as vapors issues and equipment reliability," Lindholm said. "We're committed to improving our performance in fiscal 2016."

Successes in fiscal 2015 included completing the retrieval of waste from a 14th leak-prone single-shell tank in Hanford's C Tank Farm, he said.

Washington River Protection Solutions restarted the Hanford evaporation plant after upgrades were completed to create more space in 27 double-shell tanks being used to hold waste emptied from leak-prone single-shell tank. Four evaporation campaigns have freed up space for almost 2 million gallons of waste.

Work has started to prepare the AX and A Farm tanks for waste retrieval when the remaining two tanks at the C Tank Farm are emptied. Preparations also were under way to start emptying Tank AY-102, a double-shell tank with a leak between its shells, within two months.

The contractor finished conceptual designs for a new project, the Low-Activity Waste Pretreatment Facility, which is proposed to pretreat some waste to allow the Hanford vitrification plant to start glassifying some waste for disposal while technical issues delay operation of parts of the plant handling high-level radioactive waste.

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Laboratories and other national labs conducting research on tank waste treatment.

The Effluent Treatment Facility and related waste water facilities were transferred from CH2M Hill Plateau Remediation Co. to Washington River Protection Solutions because they will be needed when treatment of tank waste starts. The tank farm contractor also plans to use it to support some tank farm work.

The independent study coordinated by Savannah River National Laboratory resulted in a phased plan to better protect workers from vapors with better monitoring, new technologies and investigations of long-term health effects.

"Moving forward, we are actively addressing our opportunities for improve-

HANFORD FIRE DEPARTMENT

22 JAN 16

Worker tests positive for radioactive contamination

Worker handled coolers used by Plutonium Finishing Plant workers

BY ANNETTE CARY
acary@tricityherald.com

Eight workers test negative with 101 results pending

Safety procedures improved at the plant

A worker at the Hanford Fire Station has tested positive for internal radioactive contamination at a very low level.

The exposure occurred after breathing equipment used at the

nuclear reservation's Plutonium Finishing Plant was sent to the station for storage, according to the Department of Energy.

Of 150 workers at the Hanford Fire Department, 104 have requested tests of their bodily fluid to determine if they also may have

110 WORKERS REQUEST TESTING — 8 NEGATIVE RESULTS, 1 POSITIVE, 101 PENDING.

SEE POSITIVE, 13A

Hanford's Mission Support Alliance to transfer to Leidos

\$5B deal would expand Leidos government IT, technical service business

Minimal impact expected on Hanford daily operations

BY ANNETTE CARY
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Lockheed Martin has reached a \$5 billion agreement to transfer its government information technology and technical services business, including Hanford contractor Mission Support Alliance, to Leidos. Lockheed Martin is the primary owner of Mission Support Alliance, which provides sitewide services at the Hanford nuclear reservation under a Department of Energy contract. Mission Support Alliance has 1,800 employees.

"Once the transaction closes, the new business will immediately become a larger and even stronger competitor in government IT and technical services," said Bill Johnson, Mission Support Alliance president, in a message to employees Tuesday. "The new company will be better positioned to deliver a broader and more affordable portfolio of capabilities and services to customers."

Johnson said the change should have minimal impact on daily operations at Hanford.

Lockheed Martin said its non-Hanford business in Richland also would be affected by the agreement, but no details were available Tuesday.

The transaction with Leidos is expected to close during the last half of this year. It includes Lockheed Martin Information Systems and Global Solutions, which employs about 16,000 employees worldwide.

Lockheed Martin would receive a one-time payment of \$1.8 billion as part of the proposed \$5 billion deal. The company's shareholders will receive about 77 million Leidos shares with an esti-

ated value of \$3.2 billion, or a 50.5 percent stake in Leidos common stock.

The deal would allow Lockheed Martin to focus on its remaining aerospace and defense business.

Leidos has 19,000 employees and is based in Reston, Va. For its last fiscal year, which ended Jan. 30, 2015, it had revenue of about \$5 billion.

It was founded 46 years ago and specializes in data analytics, systems engineering and cybersecurity.

Lockheed Martin also serves as a subcontractor to Mission Support Alliance, providing information technology services. The subcontract was put out to bid in the fall as part of the normal business cycle, said Rae Moss, MSA spokeswoman. A subcontractor has not been named.

Mission Support Alliance holds the DOE contract until 2019 to provide services at Hanford that include information technology, utilities, security, fire protection, management of the HAMMER training center, road maintenance and portfolio management for DOE, including providing data to help DOE plan for and meet deadlines.

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Hanford guards approve contract with signing bonus

BY ANNETTE CARY
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The Hanford Guards Union voted Tuesday to accept a proposed new contract with Mission Support Alliance after three contract extensions during negotiations.

"We have a long-standing relationship with the guards and greatly value the critical function they have here at Hanford," said Rae Moss, spokeswoman for Mission

Support Alliance. "The positive ratification of this new labor agreement is a result of good faith collective bargaining by both parties."

Mission Support Alliance holds the Department of Energy contract for support services at Hanford, including for security.

The new contract includes a signing bonus of \$1,000, according to information posted by the union on its website. Wage increases will be 2 percent for 2016 retroactive to Oct. 25, 2 percent

for 2017 and 1 percent for 2018.

There is no wage increase negotiated for the final two years of the contract. However, discussions on wages can be re-opened in 2019 with no risk of wages going down.

Time-and-a-half will be paid for work over 12 hours a day or 40 hours in a week, with double time for work in excess of 52 hours.

Union officials had recommended a "yes" vote after a tentative labor agree-

ment was reach Jan. 11. Issues discussed during negotiations had included details related to disability retirement benefits and a company proposal to change the guards' work schedule, according to union officials.

The new contract agreement increases employee contributions to the guard's income protection plan at 0.5 percent per year to a maximum 4 percent in 2019. The plan provides supplemental income protection for guards who may not be able to continue to meet job requirements as a result of failing to meet a required medical standard or physical qualification.

The shift rotation will move to an eight, seven and 11-week duration.

The number of guards under contract is not made public for security reasons.

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HANFORD'S LOW ACTIVITY WASTE PLANT

DOE: Raft of issues is fixable

DOE technical review finds design vulnerabilities for vit plant Low Activity Waste Facility

Issues to be addressed without halt to construction required elsewhere at plant

Contractor Bechtel National given 10-step plan to fix issues, many of them previously identified

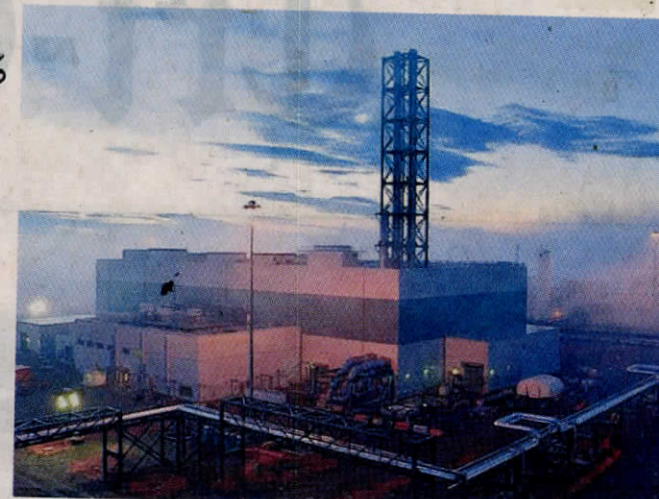
BY ANNETTE CARY
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Each of 529 "vulnerabilities" identified for the Hanford vitrification plant's Low Activity Waste Facility in a newly released report can be fixed, according to the Department of Energy.

Friday, DOE released a report prepared by teams of

outside experts instructed to identify any potential problems or need for improvement with the design of the facility. They found 362, as reported when a draft of the report was leaked in August.

Bill Hamel, the DOE project director for the plant, called it a "find and fix" project report that is a planned part of good engineering and management



Courtesy Bechtel National

Early morning fog envelops the Low Activity Waste Facility at the Hanford vitrification plant.

practices on a complex project.

DOE, also on Friday, released a technical review it prepared internally to address the findings of the report. The review expanded the 362 findings identified by outside experts to include additional items pulled from the text of the report or added after a review of the report for a total of 529 vulnerabilities to address, Hamel said.

"I'm confident that given where we are at and what we found, we can fix these and achieve our goal," Ha-

mel said. "This review gives me confidence in the issues out there and how we are going to manage them."

The massive vitrification plant is being built to treat up to 56 million gallons of radioactive waste left from the past Hanford production of plutonium for the nation's weapon program, turning it into a stable glass form for disposal. It's the first vitrification plant of its size and complexity to be built, because of the diverse nature and volume of Hanford

26 JAN 16

First Hanford downwinder claim could be last to settle

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Claim filed in 1988 saying radiation damaged health was followed by thousands more
.....

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Last of claims were thought to be settled by late 2015
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BY ANNETTE CARY
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Just as it looked as though all claims in the Hanford downwinder lawsuit had been resolved, an Oregon attorney says the first claim filed 28 years ago has yet to

be settled.

The estate of Frieda Seaman filed a claim in early 1988 in federal court in Oregon, which was consolidated with other claims in federal court in Eastern Washington in 1991.

More than 3,000 people would file claims in the consolidated

federal case, arguing that radioactive emissions from Hanford had been carried downwind to harm their health in the 1940s and 1950s.

Most of the cases that advanced to settlement were for thyroid disease. The radioactive iodine that was released from Hanford in its early years concentrates in the thyroid.

Seaman's sons said that she lived on Pasco property next to the Hanford nuclear reservation from 1944-55. She developed thyroid cancer in 1958 and was diagnosed

SEE DOWNWINDER, 7A

Judge ends Hanford downwinder case

JUST SIX CASES WENT TO TRIAL, WITH A JURY AWARDING A COMBINED \$550,000 IN TWO THYROID CANCER CASES.

Judge orders case closed, dismissing remaining claim filed in 1988

Anyone now seeking compensation will have to find attorney, file new lawsuit

Case once included 3,550 to 5,000 claims

BY ANNETTE CARY
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The 25-year-old Hanford downwinder case filed in federal court was dismissed last week after all claims were settled, dropped or removed.

Judge William Fremming Nielsen issued the order, despite a request that the first claim filed in the case still be settled or brought to trial. The attorney for the case came forward after other claims had concluded.

Anyone still wishing to file a claim that releases from the Hanford nuclear reservation damaged their health will need to bring a new lawsuit. Finding an attorney to take the case could be a challenge. Attorneys in the consolidated case were for the most part dissatisfied with the compensation their clients received.

Neither plaintiffs nor attorneys for the defendants — all early Hanford contractors — have revealed settlement terms. The settlements ultimately are expected to be paid by the federal gov-

ernment, which indemnified the contractors.

About 15 years ago, as many as 5,000 people were claiming their health was harmed by past radioactive releases from Hanford, according to attorneys for the Hanford contractors who were sued. Plaintiff attorneys put the number of cases at closer to 3,550.

Only a handful of claims went to trial.

Nielsen ordered that 12 claims be heard more than a decade ago to give attorneys guidance to work out settlement agreements in the case. The six claims picked by defense attorneys were either dropped before trial or dismissed by Nielsen as too weak to proceed.

Just two of the six cases picked by plaintiff attorneys that went to trial resulted in judgments. A jury awarded about \$550,000 combined in 2005 to two plaintiffs with relatively high estimated exposures to radioactive iodine as children. They

later developed thyroid cancer.

In Hanford's earliest years, radioactive iodine was released from stacks to drift downwind, with the largest releases in the 1940s. The contamination settled out on crops and pastures, with the primary route of exposure believed to be milk from cows that grazed on freshly contaminated grass. Iodine concentrates in the thyroid.

The last major group of plaintiffs reached a settlement agreement with defendants in fall 2015, and Nielsen called for any remaining defendants to come forward as he prepared to close the case.

Just one stepped up, the estate of Frieda Seaman, who lived next to Hanford as an adult from 1944-55. She later developed thyroid cancer and died from leukemia in 1976.

The defense has argued that even plaintiffs' experts have said that risk was largely confined to people exposed as children.

The case had been filed in Oregon in 1988 and later ordered consolidated with the 1991 lawsuit in federal court in Eastern Washington.

Attorney Michael Bloom of Lake Oswego, Ore., argued that the case was just about ready to go to trial when it was consolidated with what would become

thousands of subsequently filed claims. There was little for him to do in recent years but wait, he said.

However, Nielsen found that although the claim was pursued diligently before 2002, the estate's attorneys did not appear at a single one of more than 50 status conferences in the case over the past decade.

Dismissal of the claim is appropriate given the public interest in resolving the case, the judge said in a court order.

"The case has been languishing for decades without resolution," he said. "The cost alone is staggering. Over the last decade, the court created trial tracks to speed along resolution, but Seaman did not take advantage of any opportunity to be added to a trial track or pursue litigation of the claims."

The court considered financial or other less drastic sanctions against counsel for the Seaman estate. But Nielsen concluded "that dismissal is the most appropriate measure in light of the duration of delay and resolution of all other related claims."

Bloom did not respond to a Herald request for comment.

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3 FEB 16

Rep. Newhouse asks Obama for solid funding for cleanup

Obama to send federal fiscal 2017 budget request to Congress Feb. 9

Last year Obama administration proposed funding cut for some Hanford work

Newhouse says 2017 budget cut could put legally required work at risk

BY ANNETTE CARY
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A reduction in nationwide spending for Department of Energy environmental cleanup would be a problem for Hanford, Rep. Dan Newhouse told President Obama as the administration prepares to ask Congress for fiscal 2017 funding.

The federal budget request to Congress is scheduled to be released Feb. 9.

Newhouse wants to avoid a repeat of last year.

For fiscal 2016, the Obama administration proposed a \$93 million cut for the Richland Operations Office, which is in charge of all Hanford environmental cleanup except the tank farms and the vitrification plant being built to treat the tank waste,



Newhouse

Newhouse, R-Wash., pointed out.

The cut would have caused cleanup delays, missed legal deadlines for

cleanup along the Columbia River and increased total project costs, he said.

It largely was not implemented, thanks to the work of Sen. Patty Murray, D-Wash., with help from Newhouse. Congress approved an overall Hanford nuclear reservation appropriation for fiscal 2016, which started Oct. 1, of \$2.3 billion, which was \$79 million more than the Obama request.

Cleanup of Hanford along the Columbia River is near completion and "truly among the brightest success stories" of the nationwide

DOE defense site cleanup program, Newhouse said.

"There are no technical reasons why work must stop within the river corridor at cleanup sites like the 324 Building and the 618-10 Burial Ground," Newhouse said in the letter.

A reduction in funding for fiscal 2017 would be "extremely detrimental to cleanup progress and would diminish the ability of DOE to meet the legal commitments that govern the Richland Operations Office," Newhouse said.

Formulating a workable budget for the Office of River Protection by next week could be challenging, given technical issues that must be resolved at the vitrification plant and a federal lawsuit about deadlines for emptying certain leak-prone tanks and building and start-

ing operations at the vit plant, Newhouse acknowledged.

However, at a minimum, the budget request should include stable funding for the vitrification plant and money for a pretreatment system that could allow the plant to start treating low-activity radioactive waste by 2022, Newhouse said. All parts of the plant may not be treating waste until 2039, according to a DOE projection.

The tank farm budget should include money for ongoing work to empty leak-prone tanks, make improvements to better protect workers from potentially harmful chemical vapors, and empty waste from a double-shell tank with waste leaking between its shells, Newhouse said.

Newhouse said he is committed to securing adequate budgets not just for Hanford environmental cleanup, but also for cleanup at DOE's other defense sites across the nation.

"While many activities of the federal government are not legally required, cleanup of our nation's defense nuclear waste is not optional," Newhouse said in the letter.

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HANFORD

5 FEB 16

Planning begins for national park

BY ANNETTE CARY
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Officials from the National Park Service were in Richland on Thursday to kick off

ideas for the park and asked questions at the open house. Here's what's known so far:

Q: Is the new park open?

A: Yes. And no. It officially opened when Department of Energy and National Park

Q: What do the tours cover?

A: Two sets of Hanford historical tours will be offered this year. One tour will go to B Reactor, which looks much as it did when it start-

zenship requirements. A third set of tours looking at environmental cleanup work across the Hanford nuclear reservation is open only to U.S. citizens at least 18 years old. There's no word yet on how the Real ID law may affect what identification visitors may be required to show to board tour buses bound for the site.

Q: Is it safe?

A: The Department of Energy says it has gone to great lengths to ensure that the tour is safe and that any

Hanford board: Spend money on cleanup, not study

8 FEB 16

Hanford Advisory Board recommends ending risk evaluation study early

Board says \$4 million cost of study should have been spent on cleanup

Board does not want study to circumvent decision process with public input

BY ANNETTE CARY
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No more money should be diverted from Hanford environmental cleanup to pay for a \$4 million study evaluating risk at the nuclear reservation, according to the Hanford Advisory Board.

The board agreed Thursday at a meeting in Richland that there is insufficient value in continuing the study. Preliminary results, covering about half of the Hanford areas and facilities requiring cleanup, were released Aug. 31 by the Consortium for Risk Evaluation with Stakeholder Participation. CRESP is an independent, multi-university group providing research and assessment to DOE on cleanup work.

“Regardless of why the CRESP report was commissioned, we are concerned

that its findings may be used to help justify doing less cleanup at Hanford,” said the letter sent by the board to Monica Regalbuto, the DOE assistant secretary for environmental management.

CRESP officials have said that the review’s identification and characterization of potential risks at Hanford is intended to provide information that will help guide decisions about the order in which remaining cleanup work should be done.

“It’s important to take a step back periodically to assess what is remaining and how to think about the challenges ahead,” said David Kosson, the review’s principal investigator, in a previous discussion about it. Remaining Hanford cleanup is expected to take 50 more years and cost more than \$100 billion.

Among observations in

the initial draft released was that cleanup of soil contaminated with highly radioactive cesium and strontium beneath the 324 Building near the Columbia River could be delayed because the spill does not appear to be migrating.

The preliminary analysis looked at contaminated groundwater, underground tanks holding 56 million gallons of radioactive waste and high-risk facilities like the Plutonium and Uranium Extraction facility, better known as PUREX. The second phase of the study, if funded, would include a look at more of the huge chemical processing plants in central Hanford and some waste sites where large amounts of contaminated liquids were dumped into the ground.

“Risks have been known for a long time,” said advisory board member Susan Leckband. She called the study an academic exercise that should not be extended, given its cost.

Members said that good processes already are in place to provide a blueprint for cleanup, including the Tri-Party Agreement and a system of studies followed by “records of decisions.”

They are based on extensive scientific analysis, including risk analysis, and public review and input, according to the board.

“Because of the involvement from the state of Washington and Oregon, tribal nations, the Hanford Advisory Board and other stakeholders, we believe the risks related to Hanford cleanup processes are being properly considered in current policies and procedures,” the letter said.

The process should not be circumvented, said board member Pam Larsen.

If all of the \$4 million cost of the study had been available for environmental cleanup, significant progress could have been made, the board said.

The portion of the report written so far covers the most challenging cleanup work remaining at Hanford. The information produced so far is interesting, but it appears unlikely that continuing the study will provide meaningful insights, the board said.

“We do not see a value in spending cleanup dollars to complete this study,” the board told Regalbuto. “The board strongly recommends that you not proceed with the remainder of the project.”

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TRI-CITY LEADERS WRITE GOV. INSLEE

Choose new state Hanford head wisely

Leader of Washington Nuclear Waste Program key to Hanford success

No successor to Jane Hedges named, interim manager likely

BY ANNETTE CARY
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Tri-City leaders are asking Gov. Jay Inslee to choose wisely when he names the next person in charge of regulating the Hanford nuclear reservation.

"Now is not a time for a lapse in state leadership when it comes to Hanford," the mayors of the Tri-Cities and West Richland and the chairmen of the Benton and Franklin county commissions said in a letter sent this week to the governor.

Jane Hedges, the manager of the Washington Department of Ecology's Nuclear Waste Program, gave four months notice at the first of November that she planned to retire. The state, along with the Environmental Protection Agency, oversees the Department of Energy's nuclear reservation.

This week, she told the Hanford Advisory Board a replacement has yet to be selected. An interim manager likely will be appointed to serve for a couple of months until a permanent manager is named, she said.

"It is important for us to have as seamless of a transition to a new leadership as possible, as this is a critical time in the life of Hanford site cleanup," said the letter to Inslee.

Local leaders said all parties — DOE, its contractors, state and federal regulators, tribes, local governments and citizens — need to work as a team "to keep the cleanup train on the tracks and headed toward the desired station."

The state has two lawsuits pending against DOE, one over missed deadlines and another over worker protection from tank vapors.

Any weakness in a united front by the state and local communities could allow a loss of needed federal money for cleanup and more delays, the letter said.

Community leaders are concerned about the progress and direction of cleanup at Hanford, particularly the Hanford vitrification plant being built to turn up to 56 million gallons of radioactive waste into a stable glass form for disposal. The waste is left from the past production of plutonium for

the nation's nuclear weapons program.

"It remains a project under construction with no certain completion or start-up date," the letter said. The state should take the lead to make sure it begins operating in a way that is technically sound and economically feasible, it said.

As other DOE weapons sites are cleaned up, convincing senators from other states to pay for Hanford becomes more difficult, the letter said. Progress in Hanford cleanup must continue to be demonstrated.

"We hear the crescendo of cynical chatter from other sites about how Hanford gets the lion's share of the funding, but doesn't seem to be making progress commensurate with that oversized funding," the letter said.

Those concerns are compounded by the November national elections and what the results could mean for Hanford, it said.

Inslee should name a new program manager who is a mature leader with strong management skills and the ability to "navigate stormy political waters," it said.

The letter praised Hedges' leadership of the local oversight office since the start of 2006.

The position of nuclear waste program manager is advertised as paying an annual salary of \$75,452 to \$110,000 annually.

The Nuclear Waste Program has an operating budget of about \$21 million and a staff of about 90 workers. Education and experience in a scientific or technical field plus a master's degree are among desired qualifications to manage the program.

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**DOE: \$190 million cut proposed
for Richland Operations Office**
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**More money would be spent at
tank farms, DOE says**
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**Washington senators plan to
question DOE officials**
.....

10 FEB 16

BY ANNETTE CARY

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The Obama administration is proposing spending less money on Hanford cleanup next year.

The White House sent Congress its federal budget request for fiscal 2017 on Tuesday, calling for an overall decrease in money spent nationwide for cleanup of defense sites like Hanford.

Sen. Patty Murray, D-Wash., called the proposed Hanford budget "inadequate" and "shortsighted."

Sen. Maria Cantwell, D-Wash., wants funding to remain at least at current levels, according to her staff.

Rep. Dan Newhouse, R-Wash., also was critical of the proposal.

"The administration's proposed FY 2017 budget cut for Hanford funding, and specifically the Richland Operations Office, would result in cleanup delays, increased total project costs and missed legal milestones within the River Corridor," Newhouse said.

There was some disagreement about how deep the cuts at Hanford would be under the budget proposal. Murray's office used documents from the White House to come up with a figure of \$287 million, almost all of it for the Department of Energy's Richland Operations Office projects.

The Office of River Protection is responsible for underground tanks holding waste from the past production of weapons plutonium and the vitrification plant being built to treat the waste.

The Richland Operations Office is responsible for all other work, including cleanup of groundwater, digging up waste sites, decommissioning and demolishing contaminated buildings, and site-wide services.

Monica Regalbuto, the DOE

SEE CUTS, 10A

DOE VIT PLANT AUDIT

Correction program in need of correction

Improvements are under way in the program to correct technical problems

But skeptical inspector general auditors say previous efforts have not succeeded

Hanford officials agree there is room for improvement

BY ANNETTE CARY
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The program to correct technical problems at the Hanford vitrification plant still may be falling short, according to a Department of Energy Office of Inspector General audit released Thursday.

DOE and its contractor Bechtel National took action in late 2013 through 2014 to improve its program to respond to, track and correct potential technical problems.

They were important steps to improve processes, but it is too soon to judge their success, the audit re-

port said. The audit was conducted from September 2014 to now.

"We remain concerned about the corrective action program because of its importance and Bechtel's past history of ineffective improvement plans," the report said.

A prior Bechtel improvement initiative was updated several times from 2008-10, but was discontinued in October 2010, the audit report said. Focus on the issue began again in September 2014 with some actions still to be completed.

Another initiative looking at a concern related to how long it took to complete certain work related to cor-

rective actions was begun in 2011, but not implemented.

DOE wrote in its response to the Office of Inspector General before the report was made public that "additional actions to improve the (vitrification plant) corrective action program are prudent."

The audit report noted that Bechtel identified weaknesses in the vitrification plant project's safety culture in 2014, including problems following its own procedures, weaknesses in training and concerns about management not valuing a rigorous corrective action program.

"Furthermore, the department did not ensure that all technical issues and issues identified through self-assessments were entered into the corrective action program," the audit report said. It criticized DOE for not ensuring that previous Bechtel initiatives to address problems were fully implemented or sustained.

Bechtel has not met any of its goals for timeliness in its corrective action program, the audit report said. Backlogs of condition reports grew between August 2013-14. The average age of all condition reports the audit considered was 315 days, which was more than three times the target.

In some instances, issues were not managed and tracked in the corrective action program, as required, the audit report said. They include the design of the mixing system to prevent an unplanned nuclear reaction, explosions of flammable gases and equipment failures, an issue that has been the subject of news stories and controversy for more than five years.

In addition, an issue related to erosion within mixing tanks was closed out in 2008, but it continues to be addressed, the report said.

Hanford management said that although the issues were originally managed under an alternative, routine issue action tracking system, they now are managed under the corrective action program.

The Office of Inspector General audit findings were consistent with a DOE 2013 audit that found similar issues and concluded that the vitrification plant project's corrective action pro-

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WE REMAIN CONCERNED ABOUT THE CORRECTIVE ACTION PROGRAM BECAUSE OF ITS IMPORTANCE AND BECHTEL'S PAST HISTORY OF INEFFECTIVE IMPROVEMENT PLANS.

IG report

gram was not meeting contract requirements.

DOE issued two Priority Level 1 findings, the most serious level. It also directed Bechtel to develop a comprehensive managed improvement plan. All work to address those has not been completed, DOE told auditors.

In August 2014, Bechtel began new initiatives related to its corrective action program, including replacing the program's tracking and control system.

"In addition, resources were increased to enable effective implementation of the corrective action program, and efforts were undertaken to improve training, work off the backlog of corrections actions and change the quality culture," the audit report said.

Bechtel's corrective action program had been under way for more than a year at the time of the audit, Bech-

tel said in a statement.

"(Bechtel) will continue to identify and implement activities to strengthen the corrective action program, as well as to address corrective actions in a safe and timely manner," it said.

The audit recommended additional improvements to DOE, including a stronger emphasis on timely responses and reducing the backlog of condition reports.

DOE agreed with recommendations, saying recommended actions have been initiated or are planned.

"(Bechtel) is committed to the safe construction and start up of the WTP (Waste Treatment Plant), and we continue to work closely with DOE's Office of River Protection to ensure we accomplish the mission," Bechtel said.

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five years at its Hanford office in the '90s, makes him a good choice to fill in and gives the state more time to find a permanent successor to Jane Hedges, who planned to retire this month as manager of the Nuclear Waste Program.

FEDERAL BUDGET PROPOSAL PROMISING FOR PNNL RESEARCH

The Obama administration's budget request for fiscal 2017 looks promising for research at Pacific Northwest National Laboratory, said officials at the national lab in Richland.

It supports nationwide funding for research in PNNL focus areas, including nonproliferation, grid modernization, energy efficient buildings, energy storage, cybersecurity and environmental remediation.

PNNL also may benefit from the administration's Mission Innovation initiative, said PNNL spokesman Greg Koller. The White House is recommending doubling clean energy research spending over five years to bring technologies that could transform the nation's energy systems and use from laboratories to the marketplace.

Next, the House and Senate will use the budget request for developing their own budget proposals for DOE and other federal departments. The adminis-

STATE NAMES INTERIM LEADER FOR HANFORD REGULATION

The director of the Washington State Department of Ecology's Office of Columbia River will temporarily step into the role of acting program manager in charge of the state's work as a Hanford regulator.

Starting March 1, Tom Tebb, a native of the Yakima Valley, will serve as acting manager of the Department of Ecology Nuclear Waste Program, Ecology Deputy Director Polly Zehm announced Wednesday.

Zehm said his extensive work at Ecology, including

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CANTWELL TELLS TREASURY TO PRIORITIZE HANFORD

12 FEB 16

A day after the Obama administration released a proposal for a reduced Hanford budget, Sen. Maria Cantwell, D-Wash., was raising the issue in a Senate Committee hearing.

"I want to put the administration on notice that this is something we need to

prioritize in the budget, and we need to work together on," she told Jack Lew, the treasury secretary, who testified Wednesday before the Finance Committee.

Hanford is the largest environmental cleanup project in the world and needs continued support and focus on its challenges, Cantwell said.

The administration has proposed a \$190 million budget cut for the Department of Energy Richland

Operations Office, which would be a 19 percent reduction. That office is responsible for groundwater cleanup, decommissioning and demolition of contaminated buildings, excavation of waste sites and sitewide operation of the nuclear reservation.

The budget proposal also included a proposed \$86 million increase for the DOE Office of River Protection. It is responsible for radioactive waste stored in

underground tanks and the vitrification plant being built to treat the waste.

HANFORD

Massive landfill to expand upward

Adding waste 20 feet above grade would save \$30 million for cleanup work

Landfill when closed would be 70 feet above grade at its peak

Another disposal cell still would need to be dug into the ground by about 2019

BY ANNETTE CARY
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Hanford officials are about to try something new in Hanford waste disposal.

Instead of digging another 70-foot-deep cell to hold more waste at the massive landfill in central Hanford, they plan to try piling it higher.

The plan has almost no cost but will allow about as much waste to be disposed of as could be held in one of the landfill's double cells, called supercells, said Dave Einan, an Environmental Protection Agency engineer.

EPA, a Hanford regulator, has signed off on the plan.

The Environmental Restoration Disposal Facility has been built in stages, with more 70-foot-deep disposal cells added as needed and filled cells temporarily covered.

"We are just about to the point of filling those cells to a point where we need to add capacity to continue the cleanup work," said Stacy Charboneau, Department of Energy manager of the Richland Operations Office.

The landfill is at the heart of Hanford cleanup, with low-level radioactive or hazardous chemical waste

hauled to the massive, lined landfill away from the Columbia River for disposal.

Now its cells, which have about 18 million tons of capacity, have only about a half-ton of capacity left.

Building a new supercell would cost \$30 million and still would be required in the next few years.

But by piling waste layered with soil higher, one less supercell should need to be constructed, freeing up \$30 million to spend for cleanup work and delaying construction of the next one. A supercell, measuring 500 feet wide and 1,000 feet long, can hold up to 3.6 million tons of material.

"It was an innovative idea, a good idea by Washington Closure Hanford," said Mark French, the DOE project director responsible for cleanup along the Columbia River and the landfill. Washington Closure operates the landfill and has hauled in much of the waste

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BECAUSE OF THE SCALE OF (ENVIRONMENTAL RESTORATION DISPOSAL FACILITY), YOU ARE NOT GOING TO NOTICE A HUGE DIFFERENCE.

Mark French, DOE project director

it holds as it has torn down buildings and dug up burial grounds and contaminated soil near the river.

The row of cells at the landfill already are planned to be about 50 feet above grade at the center with a slight downward slope from there to allow water to run off rather than pooling over the landfill once it is closed, permanently capped and planted with vegetation.

The plan to expand upward will add an additional layer of waste material about 20 feet high, bringing the capped height at the

center to about 70 feet high. Much of the mound over the landfill will have a 2 percent grade with a 12 percent grade for the side slopes.

At a distance, the landfill's new profile is expected to blend in with the Hanford landscape.

"Because of the scale of ERDF, you are not going to notice a huge difference," French said.

DOE already is expected to have some waste disposal areas with a profile above grade. Plans call for cleaning out the site's massive processing facilities and

then collapsing their walls inward. The demolition debris would be covered with an earthen barrier rather than hauling the debris to a landfill for below ground disposal.

A temporary cover made of high-density polyethylene covered with soil already has been placed over part of the landfill that has been filled. Plans are being made to either cut holes in it, possibly by driving over it with a bulldozer, or to remove it entirely.

Removing or breaching the cap would allow any water, such as rainfall that falls on the landfill and could become contaminated, to be collected in a system above the liner at the bottom of the landfill. Studies provided to EPA have shown that the existing landfill liner and leachate collection system have sufficient strength for the additional waste.

DOE is expected to still work toward having another supercell ready for use in about 2019. The landfill now has the equivalent of six supercells.

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15 FEB 16

State officials dubious about test

Boreholes would take cesium and strontium capsules

State wants to help make decision after county complains

Associated Press and Tri-City Herald

LUBBOCK, TEXAS

A proposal to drill a borehole in North Dakota to test technology for disposal of some Hanford waste is meeting with opposition from state and local leaders who want more time to review whether the plan poses any public danger.

The federal government plans to spend \$80 million

assessing whether limited waste, such as Hanford's nearly 2,000 cesium and strontium capsules, could be disposed of in 3-mile-deep holes, a project that could provide a partial alternative strategy to the Yucca Mountain, Nev., repository plan that was halted in 2010.

The five-year borehole project was tentatively slated to start later this year on state-owned land in rural North Dakota.

"It should be a statewide decision," said Jeff Zent, spokesman for North Dakota Gov. Jack Dalrymple, adding that a resolution from state legislators is a possibility.

The Department of Energy wants to conduct its work just south of the Canadian border on 20 acres near Rugby, N.D. — in part because it's in a rural area not prone to earthquakes — but is prepared to look elsewhere if a deal can't be reached.

Project leaders say the research will require months of drilling deep into the earth but will not involve

any nuclear waste. Instead, dummy canisters without radioactive material would be used in the project's third and final phase.

"It's to confirm the viability and concept," said Robert J. MacKinnon, a technical manager on the project at DOE's Sandia National Laboratories in Albuquerque, N.M.

The research team will look at deep rock to check its water permeability, stability, geothermal characteristics and seismic activity — a central concern with burying radioactive waste deep underground.

If nearby earthquakes

occur, the crystalline rock could slip and allow for water and radioactive material to migrate away from the site, said Stephen Hickman, director of the U.S. Geological Survey's Earthquake Science Center.

State and local officials aren't gung-ho about the \$35 million borehole project's first phase being in their backyard.

Duane Johnston is on the Pierce County Commission. He said he doesn't entirely trust the government.

"Sure it's an experimental, we know that," Johnston said. "But it could be suitable for nuclear waste.

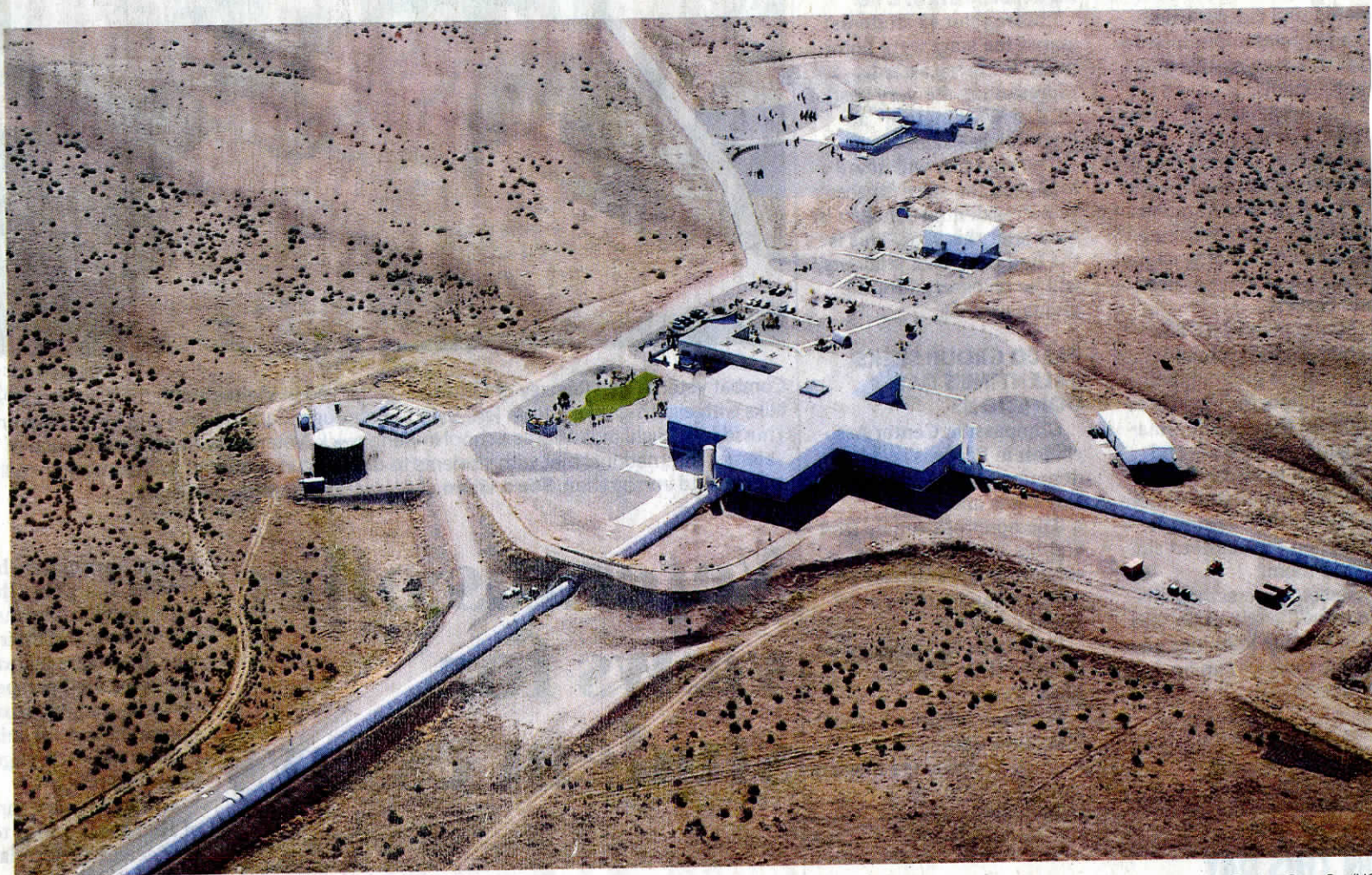
That's what bothers us. You never know about the government."

The administration says only communities that volunteer to be used for disposal of nuclear waste will be considered for actual disposal.

Earlier this month, Pierce County officials discussed the issue with the governor and state attorney general, with the county commission ultimately placing a moratorium on the project. The commission says it and the county's planning board must agree before the freeze is lifted.

The county is holding a public hearing Feb. 16 in Rugby, a community of about 3,000 people 15 miles north of the site.

DOE spokesman Bartlett Jackson said options for alternative locations would be explored if the Rugby site isn't available.



Courtesy Corey Gray/LIGO

An aerial view of the Laser Interferometer Gravitational-wave Observatory, or LIGO, north of Richland at Hanford.

THEORY OF RELATIVITY CONFIRMED

12 Feb 16

Gravitational waves detected at LIGO

“IT IS THE FIRST TIME THE UNIVERSE HAS SPOKEN TO US THROUGH GRAVITATIONAL WAVES.”

David Reitze, physicist

Einstein's 1916 theory proven after 100 years

LIGO observatory at Hanford detected the waves

Waves created when 2 black holes collided 1.3 billion years ago

BY ANNETTE CARY
acary@tricityherald.com

The existence of gravitational waves has been detected for the

first time, 100 years after Albert Einstein predicted their existence in 1916.

Two black holes that collided 1.3 billion years ago created the waves seen at a new type of space

observatory, one located at Hanford and the other in Louisiana, officials announced Thursday morning.

“Ladies and gentlemen, we have detected gravitational waves. We did it!” said David Reitze, a physicist and executive director of the LIGO Scientific Collaboration. “I am so pleased to be able to tell you that.”

Violent events in space, like the collision of black holes, the explosion of stars or changes in the

speed or direction of large objects create gravitational waves, or ripples through space and time.

The National Science Foundation has been working toward the detection of a gravitational wave for 40 years, spending about \$1 billion to date. It was a major

▶ VIDEO

Check it out at www.tricityherald.com

SEE DETECTED, 13A



ANNETTE CARY Tri-City Herald

Heng Dai takes a picture Saturday of Liulin Deng and Ao Tian, holding baby Ruigian Deng, all of Richland, in front of one of the vacuum tubes of the Laser Interferometer Gravitational-wave Observatory at Hanford. They were at the first public tour of LIGO since the announcement that it had detected gravitational waves.

Science superstar LIGO near Richland draws crowd

Hundreds show up for tour after gravitational waves detected, proving Einstein's theory of relativity

Public celebration, tours planned March 12 at LIGO

BY ANNETTE CARY
acary@tricityherald.com

For years, Fred Raab, the head of LIGO at Hanford, got the same question during tours of the observatory, which started searching for gravitational waves in 2002. "What have you seen?" The answer was always "nothing, yet."

VIDEO

Listen to the sound of two black holes colliding at www.tricityherald.com/video

Until Saturday. A couple hundred people showed up for the regular second Saturday tour of the Laser Interferometer Gravitational-wave Observatory north of Richland after news broke Thursday that grav-

itational waves had been detected for the first time. Albert Einstein predicted the existence of gravitational waves in his general theory of relativity in 1916, but none had been detected until Sept. 14. The Hanford LIGO detected them seven milliseconds after they traveled past a twin LIGO in Louisiana. Jason Jones of Seattle drove 200 miles to tour the observatory and hear about the detection of gravitational waves that passed through the Earth after the collision of two massive black holes 1.3 billion years ago. "I'm in awe of the science that happened in this place," he said. "It could fundamentally change our view of reality." Gravitational waves give scientists a new way to examine the very essence of space and time, Raab said. "What we have done for the first time is build a receiver that can receive and measure space quakes," he said. "Humanity now has a new way to explore the universe around us ... and discover things that are inconceivably different than the world we live in." Optical astronomy tells us there are only three dimensions, he said. But maybe there are more. "There are very, very deep mysteries we don't know," he said. You don't have to be a

18 FEB 16

Board: Hanford deadline extensions too extreme

Hanford Advisory Board says proposal is all 'gives' and no 'gets'

Extended deadlines do not account for environmental risk of delays

State of Oregon says 'to be determined' deadlines not fair to public

BY ANNETTE CARY
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The Hanford Advisory Board is leery of extending legal deadlines for much of the environmental cleanup work in central Hanford and along the Columbia River.

The Department of Energy has proposed changing 64 milestones, or deadlines, in the Tri-Party Agreement.

The board complained that none of the changes would speed up work, and some projects would be delayed almost a decade.

The new deadlines would provide "only losses in the form of delays and no benefits in the form of accelerated cleanup projects," the board said in a letter to DOE and its regulators.

Central Hanford has about 400 buildings and about 1,500 waste sites where contaminated material was dumped, spilled or leaked into the soil.

DOE, the Environmental Protection Agency and the state Department of Ecology have long known that focusing on cleanup at Hanford along the Columbia River in recent years would mean delays in cleanup work in central Hanford.

The three agencies negotiated an agreement with deadlines for the next phase of cleanup — excluding work to empty Hanford's storage tanks and treat the waste for disposal — that they believed was realistic based on slightly higher Hanford budgets.

They propose extending by almost a decade — to 2024 — the current 2016 deadline for completing investigations and screening possible cleanup methods for many of the central Hanford buildings and waste sites.

The date by which cleanup would be required to be completed is listed as "to be determined."

The deadline for DOE to say when three large processing plants — PUREX, REDOX and B Plant — would be required to be cleaned up would be extended from 2022 to mid-2026.

The board is not having it. "There is nothing impossible, nor impractical, about accomplishing remediation under the original TPA (Tri-Party Agreement) milestones, utilizing technology

that is currently available," the advisory board said in the letter.

Delays negotiated in the proposed new milestones "were too easily pushed out using insufficient funding as an excuse, rather than proposing more stringent cleanup deadlines to make the case for more funding," the board said.

The proposed new deadlines also do not reflect the urgency of cleanup, the board said. They seem to assume that contaminants in the ground and in groundwater will stay put during the proposed delays, rather than migrating and posing more risk.

It called for more stringent deadlines to demonstrate the priority of cleanup work to Congress and make Congress more likely to provide adequate funding to Hanford.

It objected to the "to be determined" dates, as did many people who attended public hearings on the proposed changes earlier this winter in Washington and Oregon.

"The goal should be to establish specific, achievable milestones within a process that allows for changing milestones, when necessary," the board said.

It also objected to delaying the cleanup deadline for the 324 Building near Richland and the highly radio-

active spill beneath it by three years.

"Extremely high radiation levels and proximity to the Columbia River and to the people living within the boundary of the city of Richland morally obligates near-term action," the letter from the board said.

The state of Oregon also has sent a letter to DOE, saying that the proposed delays have been anticipated, but the length of delays caught it by surprise.

Those deadlines listed as "to be determined" would likely slip by an additional two or three decades, the state of Oregon said.

The Tri-Party agencies should take their best shot at developing realistic deadlines, even if they will cause major concern, the state said. The public needs to understand the expected length of delays.

It also questioned whether DOE's plans to complete three major projects at the same time in 2021 are realistic. Plans call for demolishing U Plant, cleaning up the high-hazard 618-11 Burial Ground, and digging up the spill beneath the 324 Building and demolishing the building.

The public comment period on the proposed changes recently ended.

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\$107.7 billion needed to finish Hanford cleanup

5. 23 FEB 16

Estimate is for cleanup to be largely completed in 2060

Cost is down from estimated \$110.2 billion last year

Estimate does not include increases yet to be calculated for vit plant

BY ANNETTE CARY
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The latest price tag for the remaining environmental cleanup of the Hanford nuclear reservation comes to an estimated \$107.7 billion.

The estimate — released Monday by the Department of Energy with its regulators, the Environmental Protection Agency and the state of Washington — includes cleanup work planned to be largely completed by 2060, plus some post-cleanup oversight.

This is the sixth annual lifecycle report prepared by DOE since an annual requirement for the report was added to the legally binding Tri-Party Agreement in 2010.

The 2016 Hanford Lifecycle Scope, Schedule and Cost Report estimate is consistent with the 2015 report's estimated cost, according to the Tri-Party agencies. The 2015 estimate was \$110.2 billion.

In recent years, DOE has had a little over \$2 billion to spend on cleanup.

Costs for specific projects in the report also are adjusted up or down, based on latest estimates. This year's report is complicated by a change to how infrastructure and sitewide services charges are reported, making comparisons of estimated changes to project costs in the last year difficult.

The report is required to be based on completing cleanup work to meet all regulatory cleanup obligations and deadlines, which

can result in some unrealistic annual budget projections.

The 2016 lifecycle report has five years in which cleanup is estimated to require budgets of at least \$3 billion. But it has less dramatic spending peaks and valleys than the 2015 report, which showed one year with a budget of more than \$4 billion.

In the 2016 estimates, cleanup costs would remain above \$2 billion through 2047 and then drop to \$1 billion or less starting two years later.

However, the Hanford Advisory Board has noted that if budget figures remain at their current annual spending levels, cleanup could take 20 to 30 years longer than projected.

The report does not reflect changing plans for the Hanford vitrification plant, being built to treat up to 56 million gallons of radioactive waste for disposal. Until a new cost and schedule for the plant is developed, the report is based on plans to start treating waste in 2019 and have the plant

fully operating in 2022.

DOE now is proposing that court-enforced deadlines be extended because of technical issues at the vitrification plant. It is proposing that some waste treatment begin as early as 2022 but that that plant not reach full operation until 2039.

Most of the \$107.7 billion estimate in the lifecycle report is for cleanup work, with costs of oversight of the site through 2090 estimated at \$4.8 billion.

The report breaks down cost estimates separately for the Hanford Richland Operations Office and the Hanford Office of River Protection. The Office of River Protection is responsible for the 56 million gallons of waste stored in underground tanks and the vitrification plant, and the Richland Operations Office is responsible for all other cleanup and sitewide services, such as utilities and security.

The estimate for remaining costs for Richland Operations Office work is \$52.7 billion in the 2016 lifecycle report, down from \$53.6 billion in the 2015 report. The Office of River Protection estimate is \$55 billion in the 2016 report, down from \$56.6 billion in last year's report.

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16 FEB 16

More safety issues identified

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More radiologically contaminated equipment sent to fire department
.....

.....
Another worker tests positive for low level of internal contamination
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BY ANNETTE CARY
acary@tricityherald.com

A new management team has been assigned to Hanford's Plutonium Finishing Plant and work will be slowed there after continuing safety problems.

In January, another piece of

radioactively contaminated respiratory equipment was sent from the plant to a Hanford fire station. Four pieces of contaminated equipment had been sent there earlier this winter.

In another incident in late December, workers discovered radioactive contamination had spread into a control room. A

bioassay of one of the employees who had been in the control room was positive, indicating a very small amount of radioactive contamination in his body, according to CH2M Hill Plateau Remediation Co:

The recent incidents were in addition to at least seven incidents of skin or clothing contamination recorded at the plant between summer and November. It was subsequently discovered that contaminated equipment had been sent from the plant not only

SEE SAFETY, 5A

.....
**Contaminants blew across
Route 4 north of Richland**
.....

**Some contamination likely spread
by plants, animals**
.....

**EPA requires report from DOE in
April**
.....

22 FEB 16

BY ANNETTE CARY
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The Environmental Protection Agency has called the uncontrolled spread of small amounts of radioactive waste at Hanford "alarming" after a Nov. 17 wind-storm.

Surveys six miles north of Richland after the winds subsided found specks of contamination had spread beyond Route 4, the public highway from Richland out to the Wye Barricade secure entrance to Hanford.

The contamination had blown from the 618-10 Burial Ground, which is being cleaned up on the west side of the highway.

The search also turned up previously undiscovered specks of radioactive waste believed to have been spread by plants or animals outside known contaminated areas.

Hanford officials brought in a street sweeper to collect the sand and dirt from a stretch of highway near the burial ground. Tests of the sweepings plus a survey of the road turned up no contamination on the public highway. It is heavily traveled by Hanford and Columbia Generating Station employees driving to and from work.

The pieces of material found were small, just specks or grains, and the contamination level on them was very low, according to the Department of Energy.

HANFORD 26 FEB 16

Medical waste disposal to go elsewhere

Environmental study recommends New Mexico repository, possible commercial sites

Hanford not to be used for radioactive disposal until vit plant fully operating

BY ANNETTE CARY
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Hanford was not picked as a recommended site for the disposal of certain kinds of radioactive medical and nuclear reactor waste in a Department of Energy environmental study released Thursday.

Hanford was one of the sites considered in the study, an environmental impact statement, but the study recommended that the waste be disposed of at the Waste Isolation Pilot Plant in New Mexico or in possible, unspecified commercial facilities.

A draft study released in 2011 did not name a pre-

ferred alternative. But even then, it appeared that Hanford had a good chance of not being picked, and that became more certain in 2013.

DOE said in 2011 it would prefer not to bring the waste to Hanford until the vitrification plant is at full operation. Then the plant was expected to be fully operating in 2022. Now DOE has proposed that the plant start partial operation in 2022 and not be fully operating until 2039.

In 2013, DOE formalized its commitment not to dispose of most waste from other sites at Hanford for the time being. An environmental study showed that disposal at Hanford of

additional DOE waste from other sites would increase the risk to groundwater, according to the state of Washington.

DOE had considered federal sites in New Mexico, Hanford, Idaho, Nevada and South Carolina in its "Environmental Impact Statement for the Disposal of Greater-Than-Class C Low Level Radioactive Waste and GTCC-Like Waste." Options considered at Hanford included boreholes, trenches or above-ground vaults.

DOE has been looking for a place to dispose of at least 190,000 cubic feet of radioactive medical and other waste now being stored, plus as much as 230,000 cubic feet of waste expected to be generated in the 60 years after the study began. The waste could cover a football field about seven feet deep.

The waste includes concentrated radioactive materials previously used for medical use, such as diagnosing and treating cancer. It also includes radioactive metals from decommissioned commercial nuclear power reactors. Some of the radionuclides in the waste have half lives of more than 10,000 years — the time it would require half of their radioactivity to decay.

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26 FEB 16

High hazard glove boxes removed

Hanford workers finish one of toughest jobs at Plutonium Finishing Plant

Two more high hazard jobs there are yet to be completed

Demolition of the plant will start, if not be completed, by September

BY ANNETTE CARY
acary@tricityherald.com

Hanford workers have completed one of the three high-hazard projects left for last before the demolition of the nuclear reservation's Plutonium Finishing Plant.

Among the plant's 238 glove boxes were two oversized boxes that stood 12 feet high and were eight feet wide. During the Cold War, workers would reach their hands through attached gloves at three levels on the tall boxes to reach inside to process plutonium in a liquid solution into oxide powders or metal pucks for the nation's nuclear weapons program.

They were too large and too contaminated to be removed from the building in one piece.

Both of those glove boxes, the final ones in the main portion of the plant, have been disconnected, cut up and packaged into boxes that will be stored at Hanford until they can be sent for disposal at a national

repository in New Mexico.

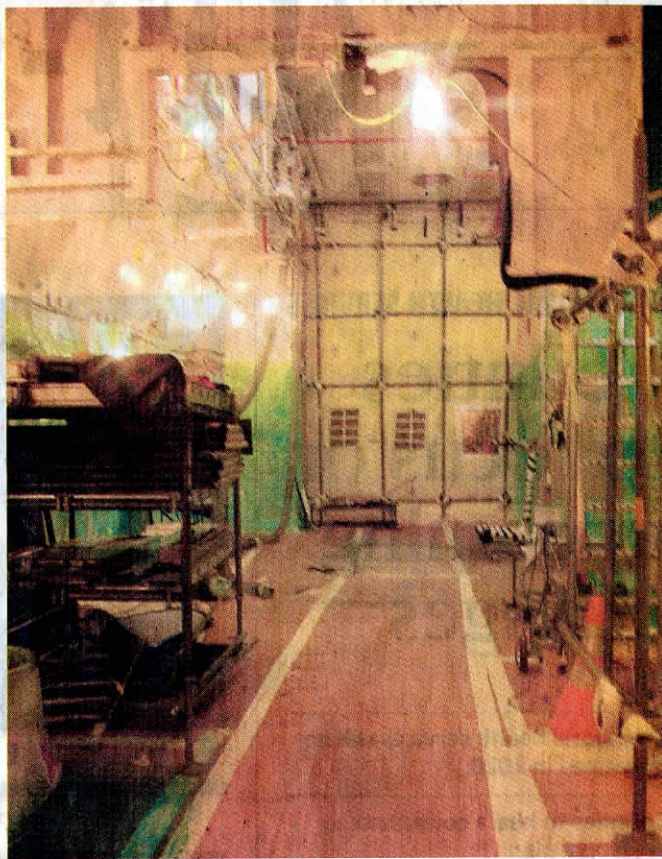
Plant workers have done "amazing work in an environment most of us cannot comprehend from a hazards perspective," said Tom Bratvold, CH2M Hill Plateau Remediation Co. acting vice president at the plant.

It's not only its size that made the work challenging, but the amount of plutonium contamination that remained inside them.

It was a particularly flighty form of radiation, and workers wore the type of protective gear saved for some of the most hazardous projects at the plant. The suits are filled with air to create higher pressure within the suits than outside them to protect workers from airborne contamination. They use supplied-air respirators.

Workers also had to contend with significant levels of radiation, Bratvold said. They used lead blankets as shields, reconfiguring their arrays of blankets almost daily to minimize radiation exposure.

"This is work that hasn't



COURTESY DOE

The HA-9A glove box has been removed from Hanford's Plutonium Finishing Plant.

ever been done before at Hanford," said Craig Krueger, a CH2M Hill nuclear chemical operator on the team that removed the two glove boxes, in a statement.

The work not only was some of the most hazardous performed at Hanford, but it is "right up there with the most hazardous work performed at any of the DOE nuclear weapons production sites," said Tom Teynor, the Department of Energy project director.

Work has been under way to clean out the plant since the 1990s, when efforts began to stabilize plutonium in a liquid solution left there at the end of the Cold War. In recent years, workers have been cleaning out and removing tanks and contaminated glove boxes.

Work started on the two

oversize glove boxes in June 2015. The first one was cut up and removed in early August, and the second one was completed this month.

Some hazardous work remains in the main portion of the Plutonium Finishing Plant, but it is not so hazardous as to require the air-filled suits.

Parts of a contaminated ventilation system and a vacuum system used to transfer plutonium-rich material between glove boxes still must be removed. The plant also has asbestos and other hazardous materials.

Not all glove boxes have been removed. The main plant includes 13 smaller glove boxes that are packaged and staged for removal

SEE GLOVE, 4A

VIT PLANT LAYS OFF ABOUT 100 CRAFT WORKERS

24 FEB 18

About 100 construction craft workers have been laid off at the Hanford vitrification plant since the first of the year, according to Bechtel National.

The mix of construction skills needed is changing as some of the focus of the work on the plant's High Level Waste Facility shifts to work on the Low Activity Waste Facility, the Analytical Laboratory and the support buildings and facilities for the plant. Preparations also are being made for construction of the plant's new Effluent Management Facility.

The Department of Energy has said it plans to start operating the Low Activity Waste Facility as soon as 2022. Construction is focused on that goal while technical issues delay some construction on the High Level Waste Facility and Pretreatment Facility.

Bechtel continues to employ about 2,900 workers, including subcontracted employees.

Exhibit chronicles hard life for blacks at WWII Hanford

28 FEB 16

Black workers came to Hanford seeking opportunities

Instead they found the same discrimination, or worse, that they thought they had left behind

Exhibit extended through May 22 at Seattle museum

BY ANNETTE CARY
acary@tricityherald.com

SEATTLE
Lula Mae Little left her close-knit community of black friends and family in East St. Louis during World War II, one of tens of thousands of people who came to work on a secret military project in the Eastern Washington desert.

Like so many recruited to Hanford during the Manhattan Project, she was seeking opportunity.

Recruiters were advertising free room and board, high wages and overtime pay.

Little took a job as a mess hall waitress. But she only stayed a few months.

Discrimination and racism were so bad that she often referred to Hanford as the "Mississippi of the North."

Her story is told in *The Atomic Frontier: Black Life at Hanford*, an exhibit at the Northwest African American Museum in Seattle that coincides with the creation of the Manhattan Project National Historical Park.

"Black women in particular got the short end of the stick," said Jackie Peterson, guest curator of the exhibit. The exhibit was mounted with the help of the African American Community Cultural and Educational Society in the Tri-Cities.

Retaining employees was difficult at Hanford. But added to the difficulties that all workers faced — isolation, boredom, brown-out dust storms and a project so secret they were not told what they were working on — black workers also faced segregation and discrimination on and off the job.

Before the war, there were 27 black residents in the Tri-Cities. DuPont, the Hanford contractor for the Manhattan Project, reported that there were 4,200 to 6,000 black workers at Hanford in its earliest years, although that estimate may be low because of high turnover on the project.

Fearing that Germany was building an atomic bomb, the United States raced to produce its own atomic weapon. Hanford, one of several Manhattan Project sites, had the world's first full-scale nuclear reactor, and produced the plutonium used for the world's first atomic explosion and the atomic bomb dropped on Nagasa-



An employee repairs an inner tube for a tire at Hanford during World War II. Most black workers were assigned to unskilled labor, despite skills they brought to the project.

ki, Japan, helping end WWII. Recruiting was done across the nation, but most of Hanford's black workers came from the South: Mississippi, Alabama, Georgia, South Carolina, Texas and Arkansas.

Even those who were used to discrimination, like Rosa Lee Byrd, were dismayed at the conditions they found in Hanford.

"Rosa Lee was hopeful that Hanford would offer a much different environment than what she left behind," according to the exhibit. "Yet in just a few months after her arrival, she had experienced the same kinds of deep racism and discrimination she had grown up with."

Before a year was up, like her friend Little, she left Hanford. She eventually moved to Seattle and went to work as a welder.

At Hanford, blacks were mostly assigned to general labor jobs,

CHRISTMAS 1944 SCHEDULE				
MON.	TUES.	WED.	THUR.	FRI.
11 WHITE 8:00PM-10:00PM STAGE SHOW 11A-REC HUTS-YOUTH CENTER UNIVERSITY OF GANDY-YOUTH CENTER COLORED 7:00PM-8:00PM AMATEUR AUD. 8:00PM-10:00PM WHIST & PROWL 9:30PM-11:00PM FREE MOVIE 5:30PM-11:00PM OPEN HOUSE-20-24	12 WHITE 8:00PM-10:00PM BARKER-KILLBOUR 2:00PM-4:00PM OPEN HOUSE 11A-REC HUTS-YOUTH CENTER COLORED 8:00PM-10:00PM WHIST & PROWL 8:30PM-10:30PM AMATEUR NITE 5:30PM-11:00PM OPEN HOUSE-20-24	13 WHITE 8:00PM-10:00PM BARKER-KILLBOUR 7:30PM-9:30PM OPEN HOUSE 11A-REC HUTS-YOUTH CENTER 9:30PM-11:00PM OPEN HOUSE-20-24 COLORED 8:00PM-10:00PM WHIST & PROWL 8:30PM-10:30PM AMATEUR NITE 5:30PM-11:00PM OPEN HOUSE-20-24	14 WHITE 8:00PM-10:00PM BARKER-KILLBOUR 7:30PM-9:30PM OPEN HOUSE 11A-REC HUTS-YOUTH CENTER 9:30PM-11:00PM OPEN HOUSE-20-24 COLORED 8:00PM-10:00PM WHIST & PROWL 8:30PM-10:30PM AMATEUR NITE 5:30PM-11:00PM OPEN HOUSE-20-24	15 WHITE 8:00PM-10:00PM BARKER-KILLBOUR 7:30PM-9:30PM OPEN HOUSE 11A-REC HUTS-YOUTH CENTER 9:30PM-11:00PM OPEN HOUSE-20-24 COLORED 8:00PM-10:00PM WHIST & PROWL 8:30PM-10:30PM AMATEUR NITE 5:30PM-11:00PM OPEN HOUSE-20-24
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A calendar of entertainment for Hanford workers and their families in 1944 shows separate and unequal activities.

despite their training and experience. They made up the majority of general unskilled labor, including carpentry, concrete pouring and finishing, trash collection

and truck driving, according to the exhibit. They also did domestic work — cooking, cleaning, serving — particularly as the initial building was completed and less con-

If you go

What: *The Atomic Frontier: Black Life at Hanford* exhibit

When: The exhibit has been extended through May 22. The museum is open from 11 a.m. to 5 p.m. Wednesday, Friday, Saturday and Sunday; and from 11 a.m. to 7 p.m. Thursday.

Where: Northwest African American Museum, 2300 S. Massachusetts St., Seattle

Cost: \$7 for adults and \$5 for students and seniors

For more information: www.naamnw.org

“WHILE SEGREGATION IN THE TOWNS BEYOND HANFORD DID NOT EXIST AS OVERTLY AS IT DID IN THE SOUTH, THIS NEW WAVE OF BLACK MIGRANTS WAS CERTAINLY NOT WELCOME.

Black Life at Hanford exhibit

struction labor was needed. "What a waste of resources," said Mwendo Campbell of Seattle, during a recent visit to the museum. Workers who could weld or had other construction expertise "pushed a mop around," she said.

It's puzzling that such an important project during a critical time in the nation's history would put so much effort into discrimination she said.

Perhaps it was because not only did black workers come from the South, but many of the white workers did too. They arrived with the expectation that the segregated lifestyle they experienced in the South would continue.

But in one way, life for black workers at Hanford was better than in the South.

A 1941 federal mandate barred federal contractors from paying lower wages based on race.

"I knew something about concrete work, and I became a cement finisher," the exhibit quotes Luzel Johnson as saying. "I made \$1.75 an hour, six days a week, eight hours."

New barracks and recreation facilities were built at Hanford for a work force that grew to as many

281213

The story of the secret project in the Eastern Washington desert to produce plutonium for the World War II Manhattan Project is a familiar one to many people in the Tri-Cities.

But a lesser-known part of the Hanford story is the role that black workers played.

Thousands of black men and women left the South to work at Hanford during the war, attracted by good wages. They faced the same difficult and often lonely life as other early workers at Hanford, but they also faced segregation and discrimination.

Some would stay in the Tri-Cities after WWII, forming the backbone of its present day black community.

"Many of us live here because our ancestors came out here for work," said Vanessa Moore, whose father-in-law, Thomas Moore, and a great uncle worked at Han-

ford during WWII. Her father, CJ Mitchell, would soon follow his uncle to Washington.

The African American Community Cultural and Educational Society, or AACCES, in the Tri-Cities has been collecting and recording the stories of Hanford's early black workers, with the hope that the information someday would be shared through a museum.

The Northwest African American Museum in Seattle has taken on the project with the exhibit *The Atomic Frontier: Black Life at Hanford*, coinciding with the interest in Hanford history generated by the new Manhattan Project National Park.

The exhibit runs through May 22. Then AACCES is hoping a venue can be found for the exhibit to be shown in the Tri-Cities.

For the full story, see Page 1B.

7 MAR 16

Cantwell presses Moniz on cut proposal

BY ANNETTE CARY
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The Hanford Department of Energy Richland Operations Office appears to be a victim of its own success, Sen. Maria Cantwell, D-Wash., said Thursday.

Cantwell questioned Energy Secretary Ernest Moniz about a proposed cut of more than \$190 million for the office in the budget request sent to Congress during a hearing before the Senate Committee on Energy and Natural Resources.

"The Energy Department's Richland Office has done an incredible job of decontaminating, demolishing, removing waste and remediating the river corridor," said Cantwell, the

ranking member of the committee.

A funding shortfall would endanger continued progress on projects managed by the office, she said. It is responsible for Hanford cleanup along the Columbia River, much of the cleanup work in central Hanford and cleanup of groundwater.

The office has been responsible for decontaminating and demolishing 324 of 332 buildings near the river and cleaning up 574 of 580 waste sites.

Cantwell acknowledged that some remaining work along the Columbia River is technically challenging, but emphasized the importance of remaining projects there. They include cleaning up the soil beneath the 324 Building, which is contam-

inated with highly radioactive waste.

Moniz said the 324 Building project is moving forward, but that capabilities need to be developed to clean up the waste, and physical realities have to be recognized.

DOE has known about the spill since 2010.

He committed to a discussion of budget constraints with Cantwell and Sen. Patty Murray, D-Wash. Several major priorities are covered in the Richland Operations Office budget, including finishing demolition of the Plutonium Finishing Plant, removing radioactive sludge from the K West Basin and continuing cleanup of central Hanford groundwater, he said.

Cantwell also questioned why there is no money in the DOE budget for the new Manhattan Project National Park, a joint project of DOE and the Department of the Interior.

Moniz said that although there was no specific money for the park in the budget,

the park would move forward. After fiscal 2017, there may need to be funds for maintaining and upgrading facilities at the park, he added.

Cantwell said that she would work with him to develop a long-term strategy for paying for the national park and ensuring an enduring partnership between DOE and the Department of the Interior.

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10 MAR 16

Murray questions DOE commitment

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WITH THOSE KINDS OF SIGNIFICANT CUTS, HOW WILL THE ADMINISTRATION MEET ITS LEGALLY BINDING COMMITMENTS TO THE TRI-CITIES COMMUNITY?

.....
Senator says DOE seems ready to declare victory with critical work unfinished

.....
Questions imbalance in budgets for DOE Hanford offices

.....
Energy secretary commits to work with Murray

BY ANNETTE CARY
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The Obama administration's proposed Hanford budget seems to foreshadow declaring a cleanup victory, leaving critical work unfinished, Sen. Patty Murray said Wednesday.

The Washington Democrat pressed Energy Secretary Ernest Moniz for information on the De-



See an exchange between Murray and Energy Secretary Ernest Moniz at tricityherald.com/video

partment of Energy's plans during a hearing of the Senate Appropriations Energy and Water Development Subcommittee.

The Obama administration has proposed a 2017 fiscal budget to Congress that would cut money

Sen. Patty Murray, D-Wash.

for work under DOE's Hanford Richland Operations Office by almost \$191 million to \$800 million.

The office is responsible for overall management of the Hanford nuclear reservation and all cleanup other than the 56 million

Whistleblower case starts this week

15 M J R 16

Department of Labor found millwright improperly laid off

Bechtel National disagreed, prompting hearing that gets under way today

Walt Ford had history of raising safety issues at Hanford

BY ANNETTE CARY
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The case of Hanford whistleblower Walt Ford will be heard this week after Bechtel National objected to a Department of Labor ruling in his favor.

The Department of Labor said in a ruling made public in August that Bechtel National should pay several months of back wages, attorney fees and \$25,000 to Ford, a millwright.

The federal investigation concluded that Ford's role as a whistleblower in his 35 years at Hanford contrib-

uted to a decision to lay him off in November 2011.

"In 2011 and 2012, Bechtel National laid off a significant percentage of the craft work force in a project-wide rolling layoff when construction was suspended on the Pretreatment Facility and most of the High Level Waste Facility," Bechtel said in a statement Monday. "Mr. Ford was among those laid off."

But the Department of Labor found that Ford "was scrutinized and treated more harshly than other employees." He was ranked 25th out of 26 millwrights the month before he lost his job.

The department's contested ruling would have required Bechtel to pay back wages of about \$4,500 a month from mid-November 2011 through March 2012, plus interest. Had he not lost his job in the November round of layoffs, he would have been laid off by the end of March, the department found.

The department did not require Bechtel to give Ford his job back, as Ford had requested, because he likely would have been laid off in the next few months.

The hearing, which starts today at the Benton County courthouse, will consider the case on its merits rather than relying on the initial ruling. It is expected to last four days.

"We are confident that a full review of the evidence will demonstrate that we carried out the layoff properly," Bechtel said in a state-

ment.

Ford, who worked at Hanford for more than 30 years, had a history of speaking up for safety, according to Hanford Challenge, which is helping represent him at the hearing.

He initially filed safety concerns when he was working for former Hanford contractor Fluor Hanford at the K Basin spent fuel project in the early 2000s.

He followed that by testifying on behalf of his Fluor supervisor in a Department of Labor investigation that found in favor of the supervisor. Richard Cecil had been laid off after he challenged a 2003 management decision to operate a crane moving radioactive spent fuel despite a warning its brakes might be faulty.

After Ford was hired by Bechtel in 2007, he reported safety concerns, including unsafe actions of fellow employees, according to the Department of Labor investigation. He was selected by Bechtel to start the Materials Handling Facility Safety Council and was picked as chairman by his coworkers.

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New facility under construction at vit plant

The Effluent Management Facility at Hanford needed to do some work of Pretreatment Facility

BY ANNETTE CARY
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Concrete work has started on a newly planned Effluent Management Facility at the Hanford vitrification plant to allow treatment of some waste to begin within a decade.

The new project is intended to take on some of the work of the vitrification plant's Pretreatment Facility, which is not required to commence operations until 2033 under the revised federal court consent decree issued last week.

The Department of Energy is moving forward with a work-around plan to allow

low-activity radioactive waste to be treated as soon as 2022 or 2023, because technical issues have delayed work on the parts of the vitrification plant that will handle high-level radioactive waste — the Pretreatment and High-Level Waste facilities.

One facility will need to be built for the front end of the operation — preparing a stream of low-activity waste from underground storage. A smaller waste preparation facility with limited capabilities is planned to be built in the tank farms.

A second facility — the one on which work has begun — is needed for the back end of operations. It

will condense secondary waste, or waste collected in the plant's off-gas system, until the Pretreatment Facility is up and running.

It will be needed by the end of 2022, when DOE is required under the newly amended consent decree to start cold commissioning, or test operations without using radioactive waste, of its Low-Activity Waste Facility at the vitrification plant.

DOE plans a "design-build" project with design work continuing to be done as construction progresses on the facility.

The design-build process being used for the main vitrification plant is a process no longer approved by DOE for large, complex construction projects. But it is acceptable for the EMF because it is using known technology

already developed for parts of the Pretreatment Facility not affected by technical issues, according to DOE.

Ground was broken on the EMF in December, with the design about 30 percent complete. Design is about 45 percent complete and concrete is being laid for the below-ground base of the building by Bechtel National, the plant contractor.

"Right now it's progressing well," said Jason Young, DOE project director for vitrification plant support facilities, in a statement. "Construction and design are on schedule, and we are looking for opportunities to improve schedule where possible."

The planned building will be about 18,400 square feet with sturdy concrete construction and steel tanks.

Work to purchase the tanks has started.

The Low-Activity Waste Facility will mix waste with glass-forming material and heat it to 2,100 degrees to create a stable glass waste product that will be buried at a Hanford landfill.

The low-activity waste captured in the off-gas system during processing will be sent to the new EMF for evaporation. Less-contaminated fluid will be sent to the Effluent Treatment Facility a mile north of Hanford for treatment with other Hanford waste.

The remaining, more contaminated concentrate will be sent back to the Low-Activity Waste Facility for vitrification.

The new facility also will have an 8,400-square-foot utility building to house

electrical cabinets, among other equipment.

DOE does not plan to release information about the cost of the new facility while it is in contract negotiations with Bechtel.

Before the walls of the main building can go up, DOE will need a state permit. It could be ready in November, although the state said it was too early to confirm that.

The state Department of Ecology is working with DOE and Bechtel to develop permit documents, which are part of the vitrification plant permits, Ecology said. DOE has only submitted draft documents so far.

The state has supported plans to start treating low-activity waste for disposal before the entire plant is fully operating, which is required by 2036.

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Courtesy Bechtel National

Fog rolls over the vitrification plant under construction at Hanford.

HANFORD

Judge sets new consent decree deadlines

13 MAR 16

Vitrification plant is required to be operating in 2036

Judge chides DOE for wasting time, money with 'litigation tactics'

Decision closes federal consent decree case

BY ANNETTE CARY
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A federal judge has set new Hanford deadlines, requiring that the Hanford vitrification plant be fully operating in 2036, a compromise between proposals from the Department of Energy and the state of Washington.

The ruling issued late Friday by U.S. Judge Rosanna Malouf Peterson closes the consent decree lawsuit.

"I am optimistic that, with this decision, the federal government's track record of hiding the ball is now behind us," said Bob Ferguson, the state attorney general, in a statement. "I hope today's ruling signals the beginning

➔ ONLINE

See the judge's ruling and other documents at www.tricityherald.com

of a more positive partnership and real progress on moving forward to clean up Hanford."

The judge set new deadlines for emptying the next group of leak-prone single shell tanks at Hanford, building and starting to operate the vitrification plant to treat the waste, and strengthening

SEE HANFORD, 11A

16 MAR 16

No big issues seen in ill worker program review

GAO audit looked at Part E program for toxic chemicals

Mistakes would not have affected compensation decisions

Workers need to watch for updates that could affect their case

BY ANNETTE CARY
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The Department of Labor is generally following correct procedures to decide claims to compensate ill Hanford and other workers for exposures to toxic chemicals, according to a Government Accountability Office audit report.

However, workers who have had illnesses that could be caused by radioactive or non-radioactive chemicals need to keep checking a federal website for new information that could benefit their case.

The database at sem.dol.gov has grown from 300 to more than 3,000 possible links between toxins and illnesses since 2006, with information based on medical research regularly added. Workers or their families can search the site to see if health conditions may have been caused by chemicals they were exposed to on the job and the facilities where the chemicals were used.

If the Department of Labor concludes that exposure to a chemical at Hanford or Pacific Northwest National Laboratory likely caused diseases or health conditions, workers or their survivors may be eligible for up to \$250,000 in compensa-

tion for wage loss and impairment plus coverage of medical expenses. The compensation is in addition to the \$150,000 some workers may be eligible for if they have cancer that could have been caused by radiation.

"Workers were often unaware of the extreme personal hazards they faced while serving their nation and many became fully aware only when they were later stricken by illness," the report said. "It is imperative their claims for compensation be given the due attention and care they deserve."

The GAO audit looked at a sampling of 200 claims in Part E, the part of the program that covers all toxic chemicals, that were filed between January 2010 and December 2014. Half the cases were picked because they were for three of the most difficult types of medical conditions for the Department of Labor to adjudicate — hearing loss, chronic beryllium disease and Parkinson's disease.

The audit found issues in the handling of about 10 percent of the cases.

However, in the vast majority of occurrences, the inconsistencies identified would not have been likely to affect the decision on the claim, the report said.

Issues included carelessness in letters sent to claim-



Courtesy DOE

An unidentified employee works in the 325 Building chemist laboratory in a photo dated 1969.

ants, including incorrect dates, an incorrect address to send additional information, incomplete or contradictory information, and listing the wrong disease.

GAO auditors also were concerned that there was no consistent way for those deciding the claims to indicate they had used the most up-to-date information from the database, called the site exposure matrices, listing chemicals and as it has rapidly expanded.

From fiscal 2006-15, the Department of Labor issued 10 notices for specific new links between chemicals and illnesses. They mostly focused on instances when a relatively large number of claims could potentially be affected.

For instance, in fiscal 2015, it notified claims examiners and posted on its public internet site that trichloroethylene, a solvent used at Hanford, had been linked to kidney cancer.

Claims examiners were instructed to reopen claims that could involve the chemical and disease.

The Department of Labor already had found some concerns with claims development and accuracy of letters, but said it made improvements after discovering issues in claims processing from 2010 through 2012.

GAO recommended that program supervisors review letters to claimants about recommended and final decisions. It also recommended that a requirement be added to document that the database be checked for updates just prior to recommending a decision to deny a claim.

The Department of Labor agreed with the recommendations.

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EAT ALL ABOUT IT
BY TY BEAVER

Dupus Boomer's to open soon in Richland

Restaurant named after character
that worked at Hanford in a 1940s
comic

Number of design elements in
building harken to nuclear reactor



Owners of the new Dupus Boomer's Downtown restaurant are on the cusp of welcoming diners in Richland — nearly four years after closing their restaurant in Pullman.

Workers are putting in the finishing touches — installing granite countertops, staining concrete floors and arranging furniture — at the new two-story building on the corner of George Washington Way and Swift Boulevard. Staff training will follow, and owner Shane Markel insists he won't open until he's confident his employees are ready.

Markel said it should be just a few more weeks, and he's excited for the entire community to see what it will offer.

"We're going to have a real strong emphasis on trying to create an atmosphere that is family friendly," Markel said.

Markel and his father, Greg



Owner Shane Markel walks up the stairs to the restaurant's second floor. The unique staircase was built with rods to look like a nuclear reactor.

Markel, announced in late 2014 that they planned to open a Tri-City location of Dupus Boomer's, named after a character that worked on the Hanford site in a 1940s comic.

The comic made light of the sometimes miserable conditions encountered by the people brought to the Mid-Columbia to work at Hanford, including the desert winds, late-afternoon traffic jams leaving Hanford and the cheap prefabricated homes workers lived in.

Greg Markel, a businessman and former co-owner of several restaurants, including Tony Roma's, came to the Tri-Cities in 1956.

The restaurant is in one of three

buildings in a commercial redevelopment in central Richland, across from city hall.

Just across the parking lot is Shane Markel's newest Taco Time franchise that's already open and a new restaurant he's launching called Go Green Salads. It opens early next week.

Diners will be able to have a salad made exactly how they want it — to dine in or grab and go. They'll also offer soup.

Both will be open from 10 a.m. to 9 p.m. each day, and it joins a Jimmy John's that opened recently in the same building in leased space.

The Dupus Boomer's restaurant will have an industrial feel, with

exposed concrete floors and duct work on the ceiling. The staircase to the second-floor dining area is built from reclaimed lumber from a demolished nearby strip mall and takes its design from the look of a Hanford site reactor.

The special details added to the construction time, but also the restaurant's character, Shane Markel said.

The restaurant's bar will feature 44 taps, as well as a back bar stocked with liquor and about 50 different wines. The bar is on the ground floor along with the soup and salad bar and some dining space. The main dining area is on the top floor, along with a large deck that can seat about 75 to 80.

Shane Markel said putting the dining area upstairs was by design. The intent is to cater to families with young children by a special menu, prizes and having kid programs on some of the TVs — to give kids something to be immersed in so their parents can enjoy a meal at the same time.

"I want kids to come in here and love it," he said.

The menu, which will span breakfast, lunch and dinner, will be classic American and broad: Bison burgers. Lettuce wraps. Avocado rolls. Various types of pasta. Prime rib will be available all day.

Prices will range from \$8 to \$15 for entrees.

Once Dupus Boomer's is up and running, Shane Markel said he will offer catering, as well as reserving the dining area for meetings. Really, he's just excited to get customers in the door and start serving a part of town that is coming into its own.

"The hustle and bustle of (George Washington) Way is what it's about," he said.

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HANFORD

DOE says no layoffs

Top DOE official tells Congress she
does not anticipate layoffs

Governor says important work
would be stopped

DOE assistant secretary confirms
vit plant costs to rise substantially

BY ANNETTE CARY
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No layoffs are anticipated at Hanford despite a sharp decrease in some funding proposed for the next fiscal year, the Department of Energy's top environmental cleanup official said.

That's welcome news for Hanford workers. However, Washington Gov. Jay Inslee remains "extremely concerned" about what a drastically reduced budget would mean for crucial cleanup work at Hanford, he said.

The fiscal 2017 budget proposed by the Obama administration would cut spending for the DOE Hanford Richland Operations Office from \$991 million this fiscal year to \$800 million in fiscal 2017.

"The work conducted by (the Richland Operations Office) protects the Columbia River, a resource of incalculable value to the residents of the Pacific Northwest," Inslee wrote in a letter to leaders of the House Energy and Water Development Appropriations Subcommittee.

Monica Regalbuto, the DOE assistant secretary for environmental cleanup, answered questions at a hearing of the congressional subcommittee this week.

Some carryover from the current fiscal year would help fill in some

1 APR 16
More tours of B Reactor and
historic sites offered this year

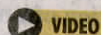
No age, citizenship restrictions

New videos and vintage Disney
film help explain science

BY ANNETTE CARY
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Registration opens Monday for 14,000 seats on this year's tours of the Manhattan Project National Historical Park at Hanford.

An expanded number of bus tours will be offered Monday through Saturday from April 18



Watch a 1953 video that explains nuclear fission to Hanford workers at www.tricityherald.com/video.

through Nov. 19 during what will be the first year of tours since the national park was established in

SEE TOURS, 10A

22 MAR 16

Registration opens April 5 for Hanford cleanup tours

DOE scaled back cleanup tours to just 15, down from 40 last year

Be at your computer at 9 a.m. April 5 to be sure to get a seat

B Reactor, historic Hanford tours yet to be announced.

BY ANNETTE CARY
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Online registration for all 2016 sitewide tours of Hanford will open at 9 a.m. April 5 at www.hanford.gov.

The sitewide bus tours will give visitors a look at the extensive environmental

cleanup program on the 586-square-mile nuclear reservation once used for plutonium production for the nation's nuclear weapons program.

Registration for two other sets of tours with a historic focus — B Reactor and the communities that were seized by the federal gov-

ernment for the secret Manhattan Project — have yet to be announced. There will be no stop at B Reactor for the sitewide tours this year.

The Department of Energy has scaled back cleanup tours to just 15, down from 40 tours last year and 60 in 2010.

DOE is concerned there may be less interest in the tours now that B Reactor has been removed from the cleanup tour after becoming part of the new Manhattan Project National Historical Park, with tours of park areas offered in collaboration with the National Park Service.

However, DOE points out

that the number of Hanford tours overall has continued to increase, when historic Hanford and B Reactor tours are included in the total.

DOE may consider adding more sitewide cleanup tours to the 2016 schedule if demand remains strong without a stop at B Reactor.

In past years, the cleanup tours have filled quickly. Those interested in the sitewide tours should be at their computers when registration opens to ensure a seat. Only online registration is offered.

The route for this year's tours has not been set, but it likely will include a last look at the Plutonium Finishing Plant, where plutonium in a liquid solution was made into metal pucks. The high-hazard work of cleaning out the plant is in its late stages

SEE REGISTRATION, 3A

More waste leaks within tank

18 Apr 76

Leak estimates surge from 70 gallons to 3,000-3,500 gallons

State, federal officials say no waste reached environment

Pumping could resume within two days

BY ANNETTE CARY
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Thousands of gallons of radioactive waste leaked from the inner shell of double-shell storage Tank AY-102 as Hanford workers pumped sludge from the tank during the weekend.

Workers were emptying the tank, Hanford's oldest double-shell tank, because it had waste leaking into the 2-foot-wide space between its shells — called the annulus — in three places.

About 70 gallons of waste had been estimated in recent years to have leaked, drying in three separate patches. The leak detected

this weekend added about 3,000 to 3,500 gallons.

Checks on Sunday and again Monday revealed that no waste breached the outer shell of the underground tank and none reached the surrounding environment, according to Department of Energy contractor Washington River Protection Solutions.

Work to retrieve sludge from the tank and move it to a sturdier double-shell tank stopped Sunday, and preparations were under way Monday to pump the leaked waste in the annulus back into the inner shell of the tank.

"Operations took a challenging, but not unanticipated turn," said Rob Gregory, chief operating officer for the tank farm contractor, in a message to employees Monday.

An alarm for a level detector in the annulus sounded about 3:30

SEE WASTE, 6A

INCENTIVE PAY AT HANFORD

Contractor awarded \$18.8M

12 APR 15
Mission Support Alliance receives praise, 89 percent of available pay

DOE raises concerns about costs charged to taxpayers

BY ANNETTE CARY
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Mission Support Alliance was paid \$18.8 million in incentive pay by the Department of Energy for providing sitewide services at Hanford in fiscal 2015, DOE announced Monday.

It earned 89 percent of the \$21 million in incentive pay possible for the fiscal year that ended September 2015. That was up from 87 percent for the previous year.

"Overall, I am pleased with the progress attained this past fiscal year," said Stacy Charboneau, manager of the DOE Richland Oper-

ations Office, in a letter to the contractor.

For meeting DOE targets for completed work, Mission Support Alliance received 94 percent of pay available, or almost \$13.9 million, and a rating of "excellent."

It was rated "very good" in subjective categories, receiving 78 percent of the pay available, or \$4.9 million.

The only negatives listed in a scorecard released by DOE were costs that DOE said were inappropriately charged to the federal government.

Last week, an Office of Investigator General audit report revealed that DOE had accused Mission Support Alliance of charging \$63.5 million in profit from 2010-14 for a subcontractor with which it shared ownership ties. Lockheed Martin is a principal owner of Mission Support Alliance, and Mission Support Alliance subcontracted information technologies to Lockheed Martin Services.

Mission Support Alliance was already receiving profit payments under its contract. The profit payments to Lockheed Martin Services amounted to double payments, DOE said.

The scorecard also listed a

SEE AWARD, 3A

Bechtel earns \$8.3 million

12 APR 16

DOE awards 66 percent of pay possible

Best showing since early 2009

Rates worst on nuclear safety, best on work integration

BY ANNETTE CARY
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Bechtel National had its best performance last year since early 2009, according to the Department of Energy pay scorecard released Monday.

The contractor, which is building the Hanford vitrification plant, received 66 percent of the incentive pay possible for 2015 in the first

year since returning to annual — rather than twice-annual — appraisals.

Bechtel was rated slightly better than in its most recent pay evaluation, when it earned 65 percent of the pay possible for the second half of 2014.

“This is our highest award out of the last 12 award periods,” said Peggy McCullough, Bechtel project director, in a message to employees Monday.

Bechtel was paid \$8.3 million out of a total \$12.6 million possible for calendar year 2015.

Its award for 2014, paid out after two six-month reviews, was about \$8.1 million. In 2013, its pay award fell below 50 percent of possible pay. In the second half of 2012 it voluntarily gave up its incentive pay after work ramped down on parts of the project plagued with technical issues.

“Over the last couple of years, we have made great strides in working safely, improving the quality of our work and documenting the quality of our work,” McCullough said in the employee message. “Let’s stay on this path of improving performance.”

DOE rated the performance overall as “good.”

Bechtel did best in 2015 in the category of “One System,” its efforts to integrate work at the vitrification plant with the tank farms holding the waste that will be treated for disposal at the vit plant. It received 100

percent of the One System pay available.

Its lowest rating, 46 percent, was in the category of “nuclear safety,” which is related to the future safe operation of the plant.

Bechtel submitted documents — design basis change packages — intended to make sure the appropriate levels of safety were incorporated into the design for the plant that did not meet DOE standards. They required rework, according to the DOE scorecard.

Bechtel also struggled with quality and quality assurance issues, receiving 49 percent of the pay possible, and resolution of technical issues, receiving 50 percent of the pay possible, according to the scorecard.

Analyses of quality issues were not being completed as soon as DOE would have liked, and Bechtel’s plan to improve quality assurance needs work, DOE said. Bechtel is not fully meeting requirements to make sure vendors selling material and

10 APR 16

NONPROFIT PLANS MEETINGS FOR ILL NUCLEAR WORKERS

Cold War Patriots plans meetings to help ill Hanford or Pacific Northwest National Laboratory workers understand compensation and free medical benefits that might be available to them or their survivors.

The meetings are at 10 a.m. and 6 p.m. April 12 at the Hampton Inn, 486 Bradley Blvd., Richland; and 10 a.m. and 6 p.m. April 14 at the Red Lion Hotel, 802 George Washington Way, Richland.

Cold War Patriots is a business-related nonprofit started by a home nursing care company.

The Department of Labor offers compensation and medical care reimbursement to nuclear workers made ill or injured by exposure to radiation or toxic chemicals.

14 APR 16

Proposed cut would partially be restored

Budget would restore \$40 million of proposed cut to Richland Operations

Would match \$86 million increase for the Office of River Protection

Senate Hanford budget expected out today

BY ANNETTE CARY
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The U.S. House's proposed budget for Hanford in fiscal 2017 would partially restore money cut in the Obama administration's budget request released in February.

The administration proposed an increase of about \$86 million to almost \$1.5 billion in fiscal 2017 for the Hanford Office of River Protection, which is responsible for 56 million gallons

of waste held in underground tanks and the vitrification plant being built to treat the waste.

But it proposed a cut from current spending of about \$190 million to \$800 million for the Richland Operations Office, which is responsible for all other environmental cleanup at Hanford after the site was used to produce plutonium for the nation's nuclear weapons program.

The House budget proposal would match the administration's increase for the

Office of River Protection and restore about \$40 million of the cut to the Richland Operations Office.

The House budget would bring Richland Operations Office spending up to about \$838 million.

The proposed increase comes as the overall environmental management budget for DOE is reduced.

The Richland Operations Office is responsible for projects such as cleaning out and tearing down the Plutonium Finishing Plant, removing radioactive sludge from underwater storage in the K West Basin near the Columbia River, and cleaning up a highly radioactive spill beneath the 324 Building near Richland and the Columbia River.

It also is responsible for cleaning up contaminated groundwater and cleanup of other contaminated buildings, waste sites and soil near the river and in central Hanford. Its budget also must cover sitewide services, from security to maintaining roads.

"The administration's proposed FY 2017 budget cut for Hanford funding, and specifically the Richland Operations Office, would result in cleanup delays, increased total project costs and missed legal milestones within the river corridor,"

said Rep. Dan Newhouse, R-Wash., when the proposal was released in February.

The U.S. Senate's proposed Hanford budget is expected to be released today.

Sen. Patty Murray, D-Wash., called the administration's budget proposal "inadequate" and "short-sighted" when it was released in February.

She pressed Energy Secretary Ernest Moniz for information on DOE's plans for cleanup under a reduced budget scenario in March as a senior member of the Senate Appropriations Committee.

"I find it unacceptable that the president's budget essentially robs Richland Operations to pay for the Office of River Protection's waste treatment mission," she said then.

Sen. Maria Cantwell, D-Wash., also grilled Moniz as ranking member of the Senate Committee on Energy and Natural Resources. A funding shortfall would endanger continued progress on projects managed by the Richland Operations Office, she said.

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20 APR 16

Waste leaked within Hanford tank holds steady Tuesday

Work continued to start pumping waste between the tank's double shells

Sen. Wyden of Oregon called for an independent panel to assess tank risk

BY ANNETTE CARY
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The level of waste between the shells of Hanford's oldest double-shell tank held steady Tuesday as preparations were made to start pumping it back into the inner shell.

The Department of Energy said Tuesday that it hoped to start pumping waste from the space between the shells soon and also to resume retrieving waste from the tank.

On Sunday, at least 3,000 gallons of waste leaked into the space between the shells as work was under way to empty the tank, which previously had leaked about 70 gallons of waste from its inner shell over several years.

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

Sen. Ron Wyden, D-Oregon, called on Energy Secretary Ernest Moniz on Tuesday to immediately convene an independent panel to look at double-shell tank conditions.

"I do not believe that these determinations can be left to the department and its site contractors," Wyden wrote in a letter to Moniz.

"Citizens in the Northwest need to be assured that there is no immediate danger from the conditions in Tank AY-102 and from any continuation of retrieval operations," he said.

DOE's double-shell tank program in the past and wants to reassess the risk of failures for Hanford's 27 other double-shell tanks.

"Previous analyses of this tank and other double-shell tanks have raised numerous design and construction concerns and the exact cause of the original AY-102 leaks has never been determined," he wrote in the letter.

After the leak from the inner shell of Tank AY-102 was confirmed, a DOE review of the tank's construction concluded that "construction difficulties and trial-and-error repairs left the primary tank bottom with residual stresses that could not be foreseen by the designers. These provided a fertile incubator for sustained corrosion to take place."

The combination of the waste stored in the tank also contributed, generating high levels of heat that made corrosion more likely.

The state of Washington is requiring DOE to empty

to learn more about the leak.

DOE also had a study conducted of the construction records of the other tanks, concluding that construction issues were not as serious as at Tank AY-102. But weld and other construction issues in some of the tanks leave some uncertainty about their long-term integrity.

Hanford has had a panel of independent experts focused on tank integrity — the Tank Integrity Expert Panel — since 2004. It includes experts from national laboratories, industry and academia who look at data collected by ultrasonic testing to detect thinning of metal, videotaped footage shot inside the tanks and waste sampling results.

In addition, a separate panel was assembled to focus just on Tank AY-102.

Annette Cary: 509-582-1533,
@HanfordNews

Proposal would restore \$114M of Obama cut

Administration had proposed cutting Richland Operations budget by \$191 million

Office of River Protection budget would increase \$86 million

BY ANNETTE CARY
acary@tricityherald.com

The U.S. Senate's proposed Hanford budget would restore \$114 million of a proposed Obama ad-

ministration cut of \$191 million to Hanford's Richland Operations Office in fiscal 2017.

"Once again Sen. (Patty) Murray has stepped in to help gain much needed funding for cleanup, particularly along the river corridor," said Gary Petersen, vice president of Hanford programs for the Tri-City Development Council.

The proposed Senate budget also would retain an \$86 million increase for DOE's other Hanford office, the Office of River Protection.

In total, it would put Hanford spending at \$2.4 billion in fiscal 2017.

"I'm proud to say the numbers today are a huge improvement from what the president proposed," Murray said in a statement. "I'm going to keep fighting along with Rep. (Dan) Newhouse to make sure these investments are carried through the entire process."

The House has proposed restoring \$40 million of the Richland Operations Office budget, and its budget also includes the increase for the Office of River Protection.

Should the House and Senate budgets be passed as proposed, the two versions would then be reconciled by a joint committee.

The Office of River Protection is responsible for 56 million gallons of waste held in underground tanks and the vitrification plant being built to treat the waste. The Richland Operations Office is responsible for the rest of environmental cleanup at Hanford and sitewide operations from security to road maintenance.

Much of the money proposed to be restored to the

Richland Operations budget would go for work along the Columbia River.

Cleanup of the highly radioactive spill beneath the 324 Building and and completion of waste retrieval at the high-risk 618-10 Burial Ground are underfunded, Murray told Energy Secretary Ernest Moniz in March. Both sites are near the river and within a few miles of the city of Richland.

The money that could be restored includes \$74 million for work along the Columbia River plus some unspecified central Hanford

work. The administration had proposed just \$70 million for that work.

The money also would be used for groundwater treatment, infrastructure improvements across Hanford, and work that falls within the community and regulatory support budget category, which typically covers regulator costs borne by the federal government, emergency preparedness, the Hanford Advisory Board and payments in lieu of taxes to local governments.

"It's so important for the federal government to provide the necessary resources to keep Hanford cleanup on schedule," Murray said.

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Proposal restores some cleanup funds

House bill would restore \$38M of \$191M cut for fiscal 2017

Would provide funds for Yucca Mountain repository

Senate to consider Hanford spending bill today

BY ANNETTE CARY
acary@tricityherald.com

The House Appropriations Committee has approved a proposed Hanford budget for fiscal 2017 that would restore some funding for groundwater treatment and to help finish environmental cleanup along the Columbia River.

The proposal budget would restore \$38 million of a \$191 million cut by the Obama administration to spending by the Department of Energy's Hanford Richland Operations Office.

"I was encouraged by the restoration of funds that that had been slated for cuts," said Rep. Dan Newhouse, R-Wash., in a statement.

"While the House request is an improvement over the administration's request

there is more work to be done," he said. "It is critical to continue to invest in cleanup efforts because in the long run stop-and-start cleanup would cause needless delays and end up costing the taxpayers even more."

Language accompanying the House budget specifies that \$17 million of the restored funds be used to treat uranium in the groundwater. The remaining money would be available to expedite cleanup along the Columbia River.

Although individual projects near the river were not listed, work remains to clean up a highly radioactive spill beneath the 324 Building just north of Richland near the Columbia River, and to finish cleanup of the high-hazard 618-10 Burial Ground near the river about six miles north of Richland.

The House would require information to be submitted to Congress after a planned independent review is completed on the removal of radioactive sludge from underwater storage in the K West Basin. The sludge would be moved to central Hanford for eventual treatment for disposal.

The House also would restrict some spending on a new facility to prepare some low-activity radioactive waste for treatment at the Hanford vitrification plant until an independent cost estimate is performed. The new facility would do some limited pretreatment to allow waste vitrification to start as soon as 2022 while technical issues at the vitrification plant's full-scale Pretreatment Facility are resolved.

The House proposed budget would match the administration's proposed budget for the Hanford Office of River Protection. Nearly \$1.5 billion would be available to spend at the tank farms, where 56 million gallons of radioactive waste are held in underground tanks, and on

the vitrification plant being built to treat the waste.

The Senate will continue to consider its version of the Hanford budget today.

Sen. Patty Murray, D-Wash., succeeded in getting \$114 million of the proposed cut to the Richland Operations Office restored in the Senate's proposed Hanford budget. It would match the administration's proposal for the Office of Richland Operations for a total budget of \$2.4 billion.

The House budget would include \$150 million to support the proposed Yucca Mountain, Nev., repository, which had been planned to receive Hanford's high-level radioactive waste and used nuclear fuel until the Obama administration shut down the project.

The House budget also would provide \$20 million for continued work by the Nuclear Regulatory Commission on the Yucca Mountain license application. No money could be spent to close the Yucca Mountain license application or take actions that would irrevocably remove Yucca Mountain as an option for a national repository.

The Senate appropriation bill proposes no money for Yucca Mountain.

If both House and Senate bills are approved, a joint committee would reconcile differences.

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WORK TO EMPTY LEAKING TANK AT HANFORD

29 APR 16

12 checked for vapor exposure

Some smelled suspicious odors
Thursday afternoon

Work halted to empty waste from
tank with an interior leak

Leaked waste between the tank's
shells will be pumped as needed

BY ANNETTE CARY
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Work to empty a Hanford tank with an interior leak has been stopped after several workers reported suspicious odors Thursday that may have been from chemical vapors.

A total of 12 workers were taken for on-site medical evaluations, according to information available Thursday evening.

The first two workers had been wearing respirators with supplied oxygen because they were in an area designated as a vapor control zone. Work was being done that could increase the risk of chemical

➔ ONLINE

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vapors in the air.

After leaving the vapor control zone early Thursday afternoon, they took off their respirators and smelled odors. They also reported

having headaches.

Work was under way Thursday to remove waste from double-shell tank AY-102, which is leaking waste from its interior shell into the space between its shells. The waste was being transferred to a nearby group of tanks, the AP Tank Farm, to be stored in a sturdier double-shell tank.

The workers who smelled the odors were in the AP Tank Farm. They were sent to the Hanford on-site medical provider for

SEE VAPOR, 10A

5 MAY 16

42 HANFORD WORKERS EVALUATED FOR CHEMICAL EXPOSURE

The number of workers receiving medical evaluations for possible exposure to chemical vapors over the last week at Hanford reached 42 Wednesday.

Five Hanford workers were sent for evaluations as a precautionary measure because of reported odors or symptoms outside the tank farms Wednesday, according to Washington River Protection Solutions. Odors were reported at two different locations.

Four other workers received evaluations at the on-site medical clinic as a precaution because of odors or symptoms reported Tuesday.

Air samples taken Tuesday in two areas where odors were reported found chemical concentrations well below regulatory standards. Access to the areas has been restored.

3 MAY 16

6 more workers evaluated for chemical vapor exposure

Total of 26 workers have received medical evaluations in recent days

3 workers reported smelling suspicious odors on Monday

**ALL 26 WORKERS
HAVE BEEN
RELEASED TO
RETURN TO WORK
AFTER MEDICAL
CHECKS**

BY ANNETTE CARY
acary@tricityherald.com

Six more Hanford workers were evaluated for possible exposure to chemical vapors Monday, bringing the total since Thursday to 26.

On Monday, three workers in the AP Tank Farm, where sampling was being done, reported smelling suspicious odors. None was wearing a respirator because chemical vapor levels in the area have been consistently below levels considered unsafe, according to Washington River Protection Solutions.

Three other workers requested medical evaluations because of odors in Hanford tank farms last week.

In total, 19 workers reported symptoms that might indicate exposure to chemical vapors from waste held in underground tanks, and seven were checked as a precaution.

Symptoms can include shortness of breath, headaches, watery eyes and coughing. Workers are concerned that exposure to chemical vapors could lead to neurological or other serious health problems long term.

All 26 workers have been

released to return to work after medical checks.

The smells and symptoms reported last week were suspected of being connected to the transfer of radioactive waste from the AY Tank Farm to the AP Tank Farm. That work has stopped to allow new equipment to be installed in the AY-102 Tank, which is being emptied because of an interior leak.

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Attorney general, senator call for DOE accountability

BY ANNETTE CARY
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Sen. Ron Wyden, D-Ore., and Washington Attorney General Bob Ferguson say their patience is wearing thin waiting for Department of Energy results at Hanford.

Both visited Richland on Thursday, with Wyden also touring Hanford.

Ferguson is looking at options to accelerate a lawsuit he filed last year to protect Hanford workers against chemical vapors associated with radioactive waste held in underground tanks.

As of Thursday, 47 Hanford

workers had received medical evaluations for possible exposure to chemical vapors over the seven days that began April 28.

"How many Washingtonians need to be exposed to vapors before the federal government solves this problem?" Ferguson asked at a press conference.

The exposures in recent days illustrate why Ferguson felt the need to file a lawsuit in September against the Department of Energy and its tank farm contractor, he said.

The issue is not just the workers who have reported potential exposures in recent days, but the hundreds of workers who have been

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exposed over the past two decades as report after report is written about chemical vapors and worker protection, he said.

The lawsuit, which has been combined with one filed by Local Union 598, which represents Hanford pipefitters and welders, and Hanford Challenge, a Seattle-based advocacy group for Hanford workers, is not set to go to trial until next May.

It is a big case and complicated, Ferguson said, and he would like

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I CALL ON PRESIDENT OBAMA AND SECRETARY MONIZ TO BECOME PERSONALLY INVOLVED IN THIS ISSUE.

Washington state Attorney General Bob Ferguson

action to better protect workers before then.

He also has asked his staff to investigate possible legal avenues that the state could pursue in addition to the lawsuit.

Real people are behind the numbers tallied for possible exposures, he said, and he thinks about how he would feel if an exposed worker were a member of his family.

He has called on President Obama and Energy Secretary Ernest

SEE ACCOUNTABILITY, 8A

WASHINGTON CLOSURE HANFORD

Contractor preparing to lay off remaining workers

11 MAY 16

Washington Closure Hanford to lay off 435 workers starting in July

200 workers will transfer to other Hanford jobs

Contractor ramped down from about 1,200 workers several years ago

BY ANNETTE CARY
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Washington Closure Hanford will lay off its remaining 435

workers starting in July as its Department of Energy contract ends three months later.

It notified the state of Washington of the pending layoffs Tuesday, as required under the Worker



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Adjustment and Retraining Notification, or WARN, Act.

The contractor's peak employment was about 1,200 workers, including staff augmentation and corporate workers, before it began finishing projects under its contract and ramping down for the end of its work about five years

“

WE HAVE BEEN PREPARING FOR IT FOR A LONG TIME.

Faith Powers, Washington Closure Hanford human resources manager

ago, according to Washington Closure.

Washington Closure was assigned to complete most of the Hanford nuclear reservation cleanup along the Columbia River over the span of a decade.

It was Hanford's first “closure

SEE CONTRACTOR, 6A

CH2M Hill gets 'excellent' rating for Hanford

Earns \$10.6 million of \$10.9 million available for fiscal 2015

Praised for meeting Tri-Party Agreement deadlines

Pay for Plutonium Finishing Plant to wait until demolition

BY ANNETTE CARY
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The Department of Energy announced this week that it has rated the work of CH2M Hill Plateau Remediation Co. at Hanford as "excellent" for fiscal 2015.

The contractor, which is responsible for groundwater and central Hanford cleanup other than waste storage tanks, earned 95 percent of the incentive pay available for the year.

It is eligible to receive \$10.6 million of a possible \$10.9 million available, according to a summary released by DOE.

The pay was based both on performing specific work and on a subjective evaluation. It earned about 90 percent of the pay available for the subjective analysis, or all but about \$300,000.

The contractor removed a record amount of contaminants from groundwater, finished construction of a building to be used to move

radioactive sludge away from the Columbia River and removed significant hazards from the Plutonium Finishing Plant in fiscal 2015, said John Ciucci, CH2M Hill president.

DOE said in its summary that CH2M Hill was "very responsive" to the agency's needs.

CH2M Hill had missed none of DOE's legally enforceable Tri-Party Agreement milestones, the summary said.

The company completed work to meet 13 milestones, including drilling wells for groundwater treatment, certifying transuranic waste for shipment to a national repository and removing the last of the pencil tanks from the Plutonium Finishing Plant.

The plant's Plutonium Reclamation Facility had highly contaminated pencil-shaped tanks up to 22 feet long hanging vertically on steel racks. They had to be removed with an aging crane that had been put in service when the facility was used during the Cold War to recover plutonium from scrap material.

DOE praised CH2M Hill for accomplishing a number of DOE's key performance goals for cleanup.

It treated 2.1 billion gallons of contaminated groundwater at Hanford, injecting clean water back in the ground, CH2M Hill said.

It also removed the two high-hazard glove boxes

SEE HANFORD, 4A

1 2 MAY 16

NO APPEAL OF NEW HANFORD CONSENT DECREE DEADLINES

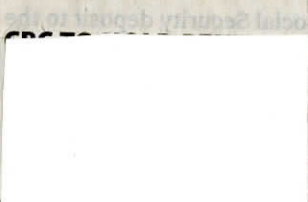
Neither Washington state nor the Department of Energy filed an appeal of the federal court ruling setting new consent decree milestones for Hanford work.

Deadline for appealing the decision passed at midnight Tuesday.

U.S. Judge Rosanna Malouf Peterson in April set new court-enforced deadlines that require DOE to start

treating some waste at the Hanford vitrification plant in 2023 and have all parts of the plant operating in 2036.

The previous deadline, which DOE cannot meet in part because of technical issues, required the plant to be fully operating in 2022.



MAY 16

POSSIBLE TANK VAPORS REPORTED IN DIFFERENT HANFORD AREA

Another potential chemical vapor incident was reported at Hanford on Tuesday, but this one was about seven miles away from where suspicious odors were previously reported.

Two workers inspecting generators outside the TX Tank Farm in the Hanford 200 West Area reported an odor. Neither had any symptoms and both declined a medical evaluation.

However, a nearby worker who smelled nothing reported symptoms and was taken for an evaluation at the on-site medical provider. Symptoms were not made public, but typically they include coughing and shortness of breath.

From late April to late last week, 47 Hanford workers received medical evaluations because of possible chemical vapors in the 200 East Area. Some had symptoms, some smelled an odor and some requested evaluations because they were in the area.

No work was being done Tuesday with the tank waste in the Hanford 200 West Area. Any work with the waste makes chemical vapors more likely to be released. Most of the work with tank waste now is being done in the 200 East Area.

8 MAY 16

New mission begins at Hanford's B Reactor

National Park Service takes on explaining how and why the United States built and used the deadliest weapons ever turned against mankind

Bus ride into restricted site takes about an hour; visitors spend about two hours at the reactor with a docent

BY CHRISTOPHER REYNOLDS
Los Angeles Times

MANHATTAN PROJECT
NATIONAL HISTORICAL PARK

On a spring morning in high, dry southern Washington, a bright yellow bus rumbled to a stop in a lot at the Hanford Site near the Columbia River. The fourth-graders of Orchard Elementary School in nearby Richland were about to see one of this nation's newest historical parks, surrounded by a valley filled with sagebrush, eagles and elk.

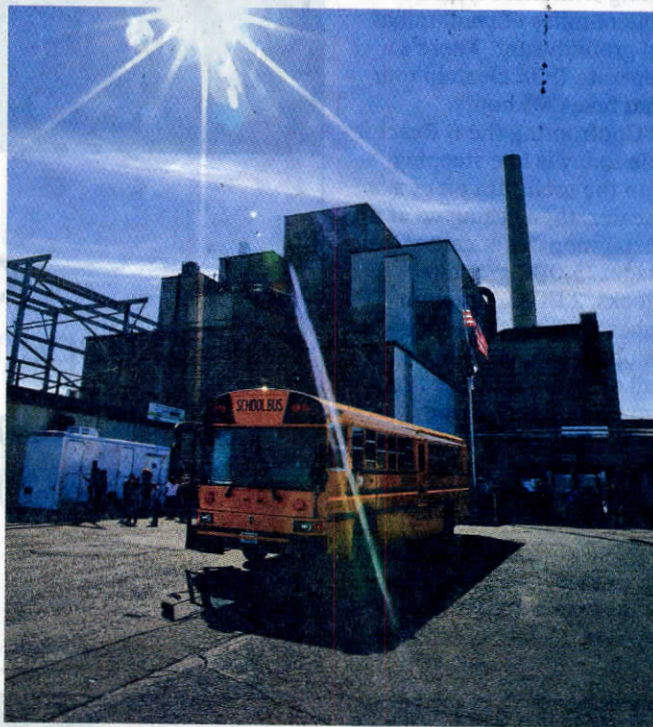
When the bus door opened, the kids rushed straight into a metal-and-concrete box of a building, almost 100 feet tall, neighbored by a 200-foot exhaust stack topped by a wind-

whipped American flag. Inside, looming like a Borg ship in *Star Trek*, stood a massive cube of graphite bricks and aluminum tubes.

"Welcome to the B Reactor," docent David Marsh said. Then he explained how in this room American scientists made "the nuclear weapon that was used to end World War II."

"Fat Man," the atomic bomb that detonated Aug. 9, 1945, over Nagasaki, Japan, originated here. The National Park Service, best known for its stewardship of peaks and valleys, is taking on the job of explaining how and why the U.S. built and used the deadliest weapons ever turned against mankind.

The Manhattan Project National Historical Park, established in November, is a joint effort by the park service and the Department



Schoolchildren finish their tour of the decommissioned B Reactor.

of Energy. Besides the Hanford Site it includes Oak Ridge, Tenn. (where the enriched uranium that fueled the Hiroshima bomb was produced), and Los Alamos, N.M. (where bombs

and components were designed and assembled).

Congress voted in 2014 to create this park, and park service leaders describe it as a chance to explore history that not only shaped the end

“
YOU GUYS KNOW
‘THE SIMPSONS’ ON
TV? YOU KNOW
HOW HOMER
SIMPSON OPERATES
HIS NUCLEAR
REACTOR FROM
HIS SEAT? THIS IS
THE SEAT HE
WOULD BE IN.

David Marsh, docent

of World War II but also the advance of science and at least a half-century of geopolitics.

"It changed the world," said Anne Vargas, a DOE docent whose father worked at Hanford.

The B Reactor is the park's focal point in Hanford and the only structure most visitors will enter. The

SEE PARK, 2B

20 MAY 16

2 HANFORD WORKERS CHECKED FOR VAPOR EXPOSURE

Two more Hanford workers received medical evaluations for possible exposure to chemical vapors, Washington River Protection Solutions said Thursday.

Two Hanford workers reported suspicious odors outside the AY Tank Farm on Wednesday, experienced no symptoms and went to the on-site medical clinic as a precaution, according to the Hanford tank farm contractor.

It brings the total of workers receiving medical evaluations for possible exposure to chemical vapors this spring to 49, by the Herald's count. Workers are concerned that exposure could cause serious health problems long term.

RICHLAND

Middle school boundaries to be discussed May 24

Tri-City Herald

Richland residents wanting to weigh in on the district's shifting middle school boundaries may attend the Richland School Board's next meeting on May 24.

The board is close to making a final decision on the new boundaries, the district said, and will review the

latest proposed lines during the 6:30 p.m. meeting at the district offices at 615 Snow Ave.

Richland's unnamed fourth middle school is under construction near the intersection of Belmont Boulevard and Keene Road in West Richland, less than two miles from Enterprise Middle School. District officials and an appointed

boundary revision committee have worked for more than a year on how to adjust attendance areas for the new school.

Under a current proposal, each middle school would be affected, with Chief Joseph Middle School taking students living in Horn Rapids and many between Highway 240 and the Yakima River. Carmichael Middle

School would lose some of its south Richland students but see its attendance area creep further north in central Richland to include those living near the Queensgate Drive shopping area.

Enterprise would be affected the most. All the students it currently serves south of Keene Road would head to the new school, as would about half of the families served by Wiley Elementary north of Keene Road.

Those unable to attend the May 24 meeting can give feedback at the district's website www.rsd.edu.

13 MAY 16

DOE nominee grilled by senators

Sens. Maria Cantwell and Ron Wyden question DOE inspector general nominee about vapors, whistleblowers

Nominee Susan Beard heads DOE ethics program

BY ANNETTE CARY
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Answers to questions about Hanford from a nominee for a key Department of Energy position failed to impress Sen. Ron Wyden, D-Ore., at a committee hearing Thursday.

He pressed for specifics about how Susan Beard, nominated to become the DOE inspector general, would improve safety and protect whistleblowers at Hanford. She appeared before the Senate Commit-

tee on Energy and Natural Resources.

Not satisfied with her answers, Wyden asked her to provide more information within 72 hours about specific actions she might take.

Wyden and Sen. Maria Cantwell, D-Wash., the ranking member of the committee, focused on possible worker exposure to chemical vapors at Hanford and protecting workers who raise issues from retaliation.

"The inspector general must be able to identify the department's failings, recommend corrective actions

and ensure progress is being made to correct problems," said Cantwell, ranking member of the committee.

She brought up Hanford's history of leaking nuclear waste tanks, missed environmental cleanup deadlines and workers exposed to chemical vapors. About four dozen workers have had medical evaluations in recent weeks for possible exposure to vapors.

Worker safety issues have been raised in as many as 16 DOE Office of Inspector General reports, Cantwell said. Yet a culture to address them has not been created, she said.

"Issuing all the reports in the world does not make a difference if action is not taken on them," agreed Beard, who has managed

the DOE's ethics program for almost two decades. For the past 13 years, she also has provided legal advice on DOE workforce issues.

If confirmed, she would conduct a more robust follow-up of whether DOE is implementing recommendations in Office of Inspector General reports, she said. Progress would be tracked, and Congress and the energy secretary would know if DOE fell short.

Wyden he said he had heard that before. If Beard said she would set up a timetable to implement recommendations after a report was issued, that might sound like something would change, he said.

He said he had real ques-

DOE employees moving out of Federal Building

Employees told the move would start this summer. Workers will go to the Stevens Center complex

Past estimates put cost of moving at \$3,000 per employee

BY ANNETTE CARY
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The Department of Energy is planning to start moving its employees from the government-owned Federal Building to privately owned buildings on Stevens Center Place in north Richland.

DOE has had employees at the Federal Building across

Jadwin Avenue from John Dam Plaza since the building opened 50 years ago.

About 250 to 300 employees of the DOE Richland Operations Office and some contracted employees that support them now work in the Federal Building.

In 1998 Congress split DOE's work at Hanford into two offices, and employees of the second office, the

Office of River Protection, are based at a building in the Stevens Center complex.

Richland Operations Office employees were told of the plans at a staff meeting Tuesday morning, and Doug Shoop, the deputy manager of the Richland Operations Office, followed up with a memo later in the day.

He said that the Richland Operations Office would begin relocating its offices to the 2420 Building in the Stevens Center business complex this summer. The building is used for employees of Hanford contractor CH2M Hill Plateau Remediation

Co.

Some Richland Operations Office employees also will relocate to the 2430 Building, which is used by another Hanford contractor, Mission Support Alliance.

The Richland Operations Office move should improve communications, coordination and collaboration between the two DOE Hanford offices, Shoop said in the memo. It also could improve sharing of resources.

Much of the environmental cleanup work along the Columbia River has been

28 MAY 16

No more evidence of leaking

Latest radiation readings back to normal for AY-101

Visual checks, detection pit continue to show no leaks

BY ANNETTE CARY

acary@tricityherald.com

Evidence continues to mount that Hanford's second oldest double-shell tank holding radioactive waste is not leaking, according to Hanford officials.

An unusual, elevated radiation reading in April triggered an investigation to see if Tank AY-101 was leaking waste into the space between its shells, just like Hanford's oldest double-shell tank.

"It appears the elevated levels detected earlier can be linked to historical contamination of the annulus," Mark Lindholm, project manager for Washington

River Protection Solutions, the Hanford tank farm contractor, said in a message to employees as they left for the holiday weekend. The annulus is the 30-inch-wide space between the tank's shells.

Concerns had been raised when filter paper in the ventilation system for that space showed radiation levels above the normal level.

Weekly checks of the filter paper collected from the system show radiological readings have returned to the historical level, Lindholm said.

The filter paper will continue to be checked weekly and another video inspection of the space is planned

in July. Initial inspections since the elevated radiation reading have found no waste in the annulus. The video shows the space looking just as it has in other inspections in other recent years.

In addition, no waste has been found in the tank's leak detection pit.

The tank had radioactive contamination in its annulus as long ago as 1976, according to Hanford officials. The tank holds 995,000 gallons of radioactive waste.

At Hanford's oldest double-shell tank, Tank AY-102, the level of waste in the 30-foot-tall annulus has stabilized at 4 to 5 inches deep, Lindholm said.

The tank had been known to have waste slowly leaking into its annulus and drying there in patches for several years, but the rate of leakage increased dramatically in April as radioactive

sludge was being removed from the tank.

Workers had to keep pumping waste from the annulus back into the inner tank as work to empty the tank continued. The waste can be pumped when it reaches a little more than 5 inches deep.

Under a settlement agreement with the state of Washington, the Department of Energy and its tank farm contractor must have the tank emptied to determine the cause of the leak by next spring.

Work to remove sludge is paused now — allowing the waste level in the annulus to stabilize — as a more efficient waste retrieval system is installed.

An enhanced sluicing system will allow retrieval of hard-to-reach waste, including waste built up on the sides of the tank.

9 JUN 16

DOE Hanford leader to leave, Shoop to be new manager

Stacy Charboneau to be promoted, move to D.C.

Deputy manager Doug Shoop would replace her

BY ANNETTE CARY
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One of Hanford's two top local Department of Energy leaders is expected to leave to take a job at DOE headquarters in Washington, D.C.

Stacy Charboneau, manager of the Richland Operations Office since the end of 2014, would be replaced at Hanford by Doug Shoop, currently deputy manager of the office.

The move depends on a proposed reorganization of the DOE Office of Environmental Management, which oversees work at Hanford and DOE's other environmental cleanup work across the nation. Charboneau would serve in a proposed new position, overseeing field operations as an associate principal deputy assistant secretary.

No date for the change in leadership at the local Hanford office has been set, with the headquarters' reor-

ganization pending.

The reorganization would not affect the leadership of Hanford's other DOE office, the Office of River Protection, led by Kevin Smith.

Shoop served as acting manager of the Richland Operations Office for about six months in 2014 until Charboneau was named as manager. He has been deputy manager of the office since 2008.

Before that he was assistant manager for safety and engineering for the Richland Operations Office.

In his 30 years of management and technical experience, he also has worked for Fluor Hanford, Westinghouse Hanford Co. and the

Idaho National Environmental Engineering Laboratory.



Shoop

He previously worked in academia, conducting clinical research. His master's degree is in industrial

hygiene/environmental engineering.

Charboneau announced her proposed new position at the Hanford Advisory Board meeting in Richland on Wednesday, joking about how widespread the rumor was already that she was

SEE HANFORD, 3A

HANFORD

Website will have chemical vapor monitoring data

Website helps meet study recommendation for better communication

It shows monitoring data after potential chemical vapor releases

No readings for results posted to date are over "action level"

BY ANNETTE CARY
acary@tricityherald.com

The Hanford tank farm contractor has begun posting data on a public website to increase communication with workers and the public about chemical vapors.

"This page is intended to be a

landing spot for critical sampling data to facilitate discussion and help alleviate concerns tied to chemicals we encounter while conducting the important work we do at Hanford's tank farm," said Mark Lindholm, president of Washington River Protection Solutions, in a message on the page.

The initial data posted at wrpstoc.com under "industrial hygiene" shows monitoring checks from April 28 through May 10 after workers reported suspicious odors or symptoms that might be caused by breathing vapors. Symptoms can include

SEE WEBSITE, 7A

DOE short \$7M for schools, roads, payments

Department of Energy pays local governments for taxes it would collect if Hanford land was privately owned

Money goes to 'kids, hospitals, books and veterans'

Richland School District receives most — \$2.6M last year

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy may be able to pay as little as 20 percent of the \$9.5 million it is being billed this year for payments in lieu of taxes that go to local governments.

To have the money available for the full payment will take action by Congress, which is not assured.

"This goes to kids, hospitals, books and veterans," said Adam Fyall, sustainable development manager for Benton County.

Benton, Franklin and Grant counties — the three counties with land that is part of the Hanford nuclear reservation — receive the money, commonly called PILT. They divvy it up to school, library and other taxing districts and also retain some money for road and other work.

Taxes have not been paid on more than 500 square miles of Hanford land since the federal government took it over in 1943, producing plutonium for nuclear weapons during World War II and through the Cold War.

In 1996, DOE reached an agreement with the three counties to make good on what they would otherwise have received in taxes if the land was in private ownership. However, the agree-

ment said the money was not an entitlement, and payments would depend on whether federal money is available.

DOE resources have been stretched thin in recent years to make the payment, with the department spending down carryover money while it lasted to provide the money to the counties and other taxing districts.

Some of the land seized by the federal government in 1943, with residents forced to leave, was irrigated farmland. If it were not in the possession of the federal government, land from the Vernita Bridge to Richland likely would be used for irrigated vineyards and orchards today, Fyall said.

Such property is increasing in value, which is reflected in the PILT bill to DOE.

DOE's bill, based on assessed value if the land were in private hands, has increased from \$6 million in 2012 to \$9.5 million in 2016.

But the Hanford account dedicated to paying PILT and other regulatory and community support costs has remained relatively flat. The administration proposes a budget that Congress uses as a starting point to appropriate money for Hanford, setting firm amounts for categories such as regulatory and community support.

This year, Hanford has

just under \$20 million in the account, thanks to the Washington congressional delegation, which fought for more money than the approximately \$15 million proposed by the Obama administration.

The majority of programs that DOE pays for from its regulatory and community support program budget are mandatory.

It includes \$11 million, based on 2015 numbers, for the Washington State Department of Ecology regulatory oversight of Hanford. In addition, DOE must pay for county emergency preparedness because of the risks posed by Hanford and for the state Department of Health to perform air and radiological monitoring to ensure there are no harmful releases.

Because Oregon depends on the Columbia River, which a successful Hanford environmental cleanup would protect, it receives money each year estimated between \$600,000 to \$700,000 for its ongoing involvement with cleanup.

The regulatory and community support budget also pays for the Hanford Advisory Board. Federal law requires the advisory board for large Superfund sites like Hanford, but does not set a required funding level. Its funding has dropped substantially through the years to about \$450,000 last year.

PILT funding is left as one of the few items in the account that is not mandatory, leaving it vulnerable if there is a shortfall.

DOE Hanford officials are developing a Congressional reprogramming request to move \$7 million from Hanford environmental cleanup

\$1.5 MILLION
amount DOE may pay of nearly \$7.4 million billed by Benton County

\$184,900
amount DOE may pay of \$924,498 billed by Franklin County

\$236,352
amount DOE may pay of the nearly \$1.2 million billed by Grant County

projects to the regulatory and community support budget, which would allow it to pay the full PILT bill.

The request must be approved by DOE headquarters in Washington, D.C., then sent to the Office of Management and Budget at the White House for approval.

If it passes both hurdles, it will be sent to Congress to see if the Washington delegation can get support for it. At the same time, Sen. Patty Murray, D-Wash., is fighting to boost the budget to allow cleanup of the high-hazard 618-10 Burial Ground and the highly radioactive spill under the 324 Building — both near Richland and the Columbia River — plus retain a proposed increase for the Hanford tank farms.

DOE has notified Benton County, the only county that

sends PILT bills every six months to DOE, that it can only pay \$736,500 of the \$3.7 million billed this spring. Total payment for the year would be about less than \$1.5 million of an anticipated nearly \$7.4 million.

"We need to figure out how we all can help DOE meet its obligations," Fyall said, after a meeting with officials from the three counties and DOE last week.

County officials may need to talk with DOE officials at all levels, work with the Congressional delegation and join forces with local governments at other DOE sites that rely on similar PILT payments and could also see shortfalls, he said.

The largest share of the Benton County PILT payment last year, about \$2.6 million, went to the Richland School District. A separate fund called the state school fund split \$1.3 million among multiple school districts in Benton County, including the Kennewick School District. The Prosser School District received a separate payment of \$92,000, and \$36,000 went to the Kiona-Benton School District.

Benton County retained \$1.6 million of the money, spending it on roads, capital projects, human services and indigent veterans. Additional money totaling more than \$440,000 went to rural libraries, the Port of Benton and the Prosser Hospital District, which

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WE NEED TO FIGURE OUT HOW WE ALL CAN HELP DOE MEET ITS OBLIGATIONS.

Adam Fyall, Benton County sustainable development manager

received a small portion.

Franklin and Grant counties receive smaller amounts. DOE has told Franklin County that it may have only \$184,900 of the \$924,498 due in October. Grant County has been told it may receive just \$236,352 of the nearly \$1.2 million due in October.

Those counties use the money for a mix of uses, similar to Benton County.

DOE's estimate that it could pay 20 percent of PILT payments without Congressional reprogramming is conservative. The percentage could increase some — possibly to about 30 percent — as the year progresses and it knows more of the actual costs it must pay this year for regulatory and community support programs.

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REGISTRATION FOR ADDITIONAL HANFORD TOURS OPENS JUNE 1

Registration starts at 9 a.m. June 1 for more bus tours focused on environmental cleanup across the Hanford nuclear reservation.

Registration for the tours that were initially scheduled in 2016 filled most seats within a couple of hours, so a second round of free tours have been added.

The additional tours will be Aug. 2, 3, 10, 16, 17, 24, 30 and 31 and Sept. 7 and 8. Tours are offered only on weekdays to allow participants to see work being done.

Participants must be at least 18 years old and U.S. citizens. Registration is offered online only at www.hanford.gov. Participants will want to check the identification requirements online because Washington state driver's licenses are not Real ID compliant and a second form of government-issued identification may be required.

JUN 16

Leaders, stakeholders to discuss next steps for center

Museum has experienced successes and challenges in its first two years

Top challenge is balancing community's desire for education programming with the cost, leader says

Workshop is 6 p.m. today at the museum

BY SARA SCHILLING
sschilling@tricityherald.com

Community leaders will gather today to discuss the best path forward for the Reach museum, as the facility approaches its second anniversary and a period of transition.

The museum opened in the summer of 2014 after more than a decade of dreaming and planning.

It's seen plenty of successes in its first two years, from

drawing thousands of visitors, to a popular tour program, to a recent \$10,000 tourism grant from the Port of Seattle.

It's also faced financial challenges.

"The community has resoundingly communicated to us that a robust, inspiring, enriching and constantly evolving STEAM (science, technology, engineering, art and math) education program that is accessible to all must be our primary focus," wrote Lisa Toomey, CEO, in

a report for the workshop.

But that's expensive, and the cost "exceeds our ability to fund (it), even with current grants and donations."

The museum is running at a deficit, which isn't unusual for public buildings and museums. However, the financial position has led to some tough choices.

Reach leaders recently made about \$150,000 in cuts by reducing museum hours and laying off some staff.

With the workshop, "we're going to bring our partners into the room and say, 'these are the challenges we face as a start-up and a public institution,'" Toomey said. "(We'll ask, 'what is it that the community wants?' We'll see what they have to say.")

The workshop is at 6 p.m.

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IT'S IMPORTANT TO US TO HEAR WHAT THE COMMUNITY WANTS AND WHAT THEY HAVE TO SAY.

Lisa Toomey, Reach CEO

at the Reach, 1943 Columbia Park Trail. A wide range of community leaders and Reach stakeholders — including city of Richland officials, the Reach Foundation, Ice Age Floods Institute, local performing arts groups, school districts, and

SEE REACH, 6A

THURSDAY JUNE 16 2016

TRICITYHERALD.COM

16 JUN 16

2 HANFORD WORKERS CHECKED FOR VAPOR EXPOSURE

Two Hanford workers received precautionary medical evaluations Wednesday for symptoms potentially related to suspicious odors that could have indicated the presence of chemical vapors Tuesday near the C Tank Farm.

The odors were not reported until Wednesday, according to Washington River Protection Solutions. Both workers were later released to return to work.

The report brings the number of Hanford workers evaluated in recent months for possible exposure to chemical vapors to about 52.

10 JAN 16

Reach museum faces a 'defining moment'

About 50 people attend discussion about museum's future

Richland museum isn't about to close, but finances are tight

Officials to explore community suggestions

BY SARA SCHILLING
sschilling@tricityherald.com

About 50 people showed up to hear discussion on the future of the Reach museum, which is at "a defining moment" — in the words of its CEO — as its second anniversary approaches.

About half of those people spoke during the Wednesday meeting, sharing their thoughts on a path forward. "For me, the overwhelming feeling was people love the Reach and they want to help us come up with a solution that helps us continue to be a meaningful institution," said Lisa Toomey, CEO.

The museum isn't about to close its doors. But its

finances are tight, and officials recently made about \$150,000 in cuts that included closing on Sundays and laying off five full- and part-time staff.

The Reach is running at a deficit, which isn't unusual for public buildings and museums, especially start-ups, but it has meant difficult decisions.

The community has said that a "robust, inspiring, enriching and constantly evolving" education program that's accessible to all should be the primary focus, Toomey wrote in a report for Wednesday's meeting.

However, that's expensive and the cost "exceeds our ability to fund (the program), even with current grants and donations,"

she wrote.

A wide range of community leaders were invited to Wednesday's meeting, from Richland city officials to representatives from the Confederated Tribes of the Umatilla Indian Reservation and area school districts.

Debbie McClary, Kennebec School District's career and technical education director, was among those who spoke. She said she hopes the museum's dedication to education will continue.

It has coordinated education events, provided mentoring and more, she said.

"The programs have been extremely beneficial to our students and the community at large," McClary told the Herald. "I hope the board recognizes the value."

The Reach museum's path to completion spanned more than a decade. It originally was envisioned as a bigger facility in a different location — Columbia Point south.

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THERE WERE ENOUGH PEOPLE WHO MADE IT CLEAR THAT THE REACH WAS IMPORTANT TO THEM AND THEIR FAMILIES.

Steve Simmons, Reach board president

But problems with the site arose. Fundraising also slowed as the recession set in, and public confidence in the project dipped.

The museum project eventually was reinvigorated with a scaled-back vision and new leadership. It opened in July 2014.

Steve Simmons, Reach board president, said he left Wednesday's meeting feeling optimistic — "because there were enough people who made it clear that the Reach was important to them and their families."

He said it's also clear that Reach officials need to do

better at keeping the public informed about the museum's finances and position.

"There are lessons to be learned there," he said.

Toomey said that's a goal moving forward.

"(People) want to be part of the process and understand what the real costs are of running a museum and delivering enriching education, enriching exhibits, STEM (science, technology, engineering and math) activities, that sort of thing," she said. "They really want to understand what it takes to operate a museum that's

a cultural benefit to the community."

In the next couple months, she said, officials will explore the community suggestions and continue to drill down on the finances, refining scenarios and options for the future.

They'll also invite more public comment about the museum's future at the next board meeting, likely in July and have a discussion with Richland city officials.

"We are at kind of a defining moment," Toomey told the Herald. "We had one in 2012 when the board decided to start over. I think we're at another one, where we have to balance the cost of what the community wants with what we can afford and what the community can afford."

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HANFORD

17 JUN 16

Plant evacuated as precaution after alarm

Tri-City Herald

Workers quickly evacuated the Plutonium Finishing Plant at Hanford on Thursday after an alarm showed that a criticality, or uncontrolled chain nuclear reaction, might have occurred.

Ninety minutes after the alarm sounded at 10:30 a.m., officials confirmed that it was a false alarm. It sounded as maintenance was being done on the alarm system.

The criticality alarm is

supposed to sound when monitors detect a large amount of radiation. An investigation to determine why it sounded during maintenance work is continuing.

About 50 workers left the building as a precaution and were surveyed for radiation contamination, said Geoff Tyree, Department of Energy spokesman. The worker checks were completed about 1 p.m., with no contamination found on any workers.

"Workers responded appropriately and safely evacuated

the facility according to response plans," Tyree said.

Environmental cleanup workers preparing the plant for demolition were not expected to return to their jobs inside the plant Thursday.

The plant was being checked for radiation that could have been spread during the evacuation. Usually workers take off anticontamination protective gear as they exit areas of the plant known to have radioactive contamination to make sure it does not spread to areas of the plant without contamination.

Removal of the protective gear outside the plant slowed checks for worker contamination.

Protective suits are removed through a careful and

deliberate process to make sure that any contamination on the gear is not spread as the suits are removed.

The Plutonium Finishing Plant in the central part of the nuclear reservation is Hanford's most hazardous facility demolition project, according to DOE officials. Areas of the plant are highly contaminated with radioactive materials, including plutonium that easily disperses into the air.

The plant was used through the Cold War to turn plutonium in a liquid solution into buttons the size of hockey pucks for the nation's nuclear weapons program.

Demolition on the production portion of the facility is expected to start this summer.

10 JUN 16

Public influence seen in new Hanford cleanup deadlines

DOE listens to call for firm deadlines for central Hanford

Deadline for some cleanup extended to 2042

Tri-Party Agencies set deadlines based on realistic budget

BY ANNETTE CARY.
acary@tricityherald.com

The influence by the public can be seen in a major set of extensions to environmental cleanup deadlines newly approved by the Department of Energy and its regulators.

In fall 2015, the Tri-Party agencies — DOE, the state Department of Ecology and the Environmental Protection Agency — proposed extending deadlines for work in central Hanford and some of the last cleanup

work to be completed along the Columbia River.

Those deadlines have been adopted by the Tri-Party agencies, they announced Thursday. But some substantial changes to the package of deadlines were made based on public comments.

“The public was really clear in its values during the public comment period,” said John Price, the Tri-Party agreement section manager of the Department of Ecology. “We appreciated the feedback from the public and agree on the new mile-

stones DOE added.”

The same issues resonated from public meeting to public meeting, whether in the Tri-Cities or elsewhere in Washington and Oregon, said Dennis Faulk, Hanford program manager for the Environmental Protection Agency.

Many people attending public meetings on the proposed new deadlines said they were not comfortable with a decision to remove a deadline calling for most cleanup in central Hanford to be completed in fall 2024 and replace it with “to be determined.”

The new deadline for the work was to be determined after studies are completed on the extent of contamination and how it should be addressed.

In response to public concerns, a new deadline of

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THE PUBLIC WAS REALLY CLEAR IN ITS VALUES DURING THE PUBLIC COMMENT PERIOD.

John Price, Department of Ecology

2042 has been set. It would cover central Hanford cleanup other than the huge facilities that processed irradiated fuel to separate out plutonium for the nation's weapons program and the underground tanks storing radioactive waste from fuel processing.

SEE HANFORD, 4A

Board: Hanford contractors should give back more to local communities

Hanford Advisory Board weighs in on upcoming prime contract awards

Suggests longer contracts and fewer contractors

3 prime Hanford contracts soon to expire

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy should hold new Hanford contractors accountable to help the communities they join as three large Hanford contracts expire in the coming years, said the Hanford Advisory Board.

The board sent a letter to DOE after its Richland meeting concluded Thursday, making recommendations on selecting new contractors, who will influence the success of Hanford envi-

ronmental cleanup for at least the next decade and possibly longer.

The board's advice was driven by getting the best value for taxpayers, improving worker safety, reducing the stress on workers of contract changes, nurturing small business and supporting the community, said board member Mike Korrenko.

In the past, DOE's bid packages have asked prospective contractors how they would help the community they are joining, the letter said. But allowing

contractors to be reimbursed for community support fell out of favor because it reduced the money available for environmental cleanup.

Yet, the state and local communities have costs associated with the contractors, ranging from those related to the work force commute to higher education to prepare future workers for Hanford jobs, board members said.

Current contractors are not investing enough in the communities given their lucrative pay, the letter said.

The board suggested that offering a credit of just 3 percent to 5 percent for community commitment in the bid evaluation could help communities.

The Environmental Management Site Specific Advisory Board, which includes

representatives of advisory boards for cleanup sites across the nation, also proposes investment within the community to be considered in contract awards.

Draft advice by the national board says contractors should be encouraged "to become good stewards by investing resources back into the communities that serve them."

Investments ranging from scholarships to purchasing goods locally help foster healthy relationships between DOE and local communities, the draft says.

The Hanford Advisory Board struggled with a proposal that contractors be allowed to stay longer at Hanford.

Many of the prime contracts are awarded for an

RIPPLES THROUGH SPACE AND TIME

Hanford LIGO announces second detection of gravitational waves

Gravitational waves came from two colliding black holes

Waves were detected Christmas Day, announced Wednesday

More subtle than first waves observed in September

BY ANNETTE CARY
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LIGO Hanford has done it again. Gravitational waves — ripples through space and time — have been detected by the Laser Interferometer Gravitational-Wave Observatory north of Richland and its twin in Livingston, La., for the

1.4 BILLION

years since gravitational waves were created by merging black holes

second time in human history.

The National Science Foundation had been working toward the detection of a gravitational wave for 40 years when the LIGO obser-

vatories first succeeded in September.

Scientists announced Wednesday that a second gravitational wave had been discovered a little more than three months later on the evening of Christmas Day. The findings are published in Physical Review Letters.

Both times the waves were created as two black holes orbited

Tours planned

LIGO Hanford tours are offered twice a month with the next tours at 3 p.m. June 24 and 1:30 p.m. July 9. More information, including a link to driving directions, is posted at www.ligo.caltech.edu/WA/page/lho-tours. Directions also are available by calling 509-372-8106.

around each other, gradually getting closer until they collided to form a single, massive black hole.

A portion of a combined black holes' mass is converted to energy, which is emitted as a final,

SEE HANFORD, 10A

Hanford tank farm contractor says it is keeping workers safe

WRPS responds to union demands to increase chemical vapor protection

Says it has ensured that personnel are protected

BY ANNETTE CARY
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The Hanford tank farm contractor defended its protection of workers in a letter to the Hanford Atomic Metal Trades Council on Tuesday, a day after the union group issued a list of demands to better protect workers from chemical vapors.

"Throughout the WRPS contract period, we have ensured that personnel are protected," said the letter from tank farm contractor Washington River Protection Solutions.

However, the contractor will consider in good faith the actions outlined by the Hanford Atomic Metal Trades Council, or HAMTC, said Mark Lindholm, president of the tank farm contractor, in the letter. HAMTC is an umbrella group for 15 unions with workers at Hanford.

Chemical vapors associated with waste held in underground tanks at Hanford have been an issue for at least 20 years. With 53 workers receiving medical evaluations for possible exposure to vapors in recent months, HAMTC told the tank farm contractor Mon-

day that more aggressive action was needed immediately to protect workers.

HAMTC has the power to stop work if it does not believe workers are safe.

Lindholm said in the letter to HAMTC President Dave Molnaa that the tank farm contractor is continuing to improve working conditions that already exceed regulations and the requirements and expectations for industry.

The letter said the tank farm contractor has consistently maintained the air that workers breathe to meet occupational exposure limits used in the nuclear and petro-chemical industry.

"Our industrial hygiene and monitoring programs are fully compliant and state of the art, setting new standards for our industry," Lindholm said in the letter.

He acknowledged that despite increasingly better monitoring and protections related to chemical vapors "some workers continue to express concerns associated with odors."

Some workers report respiratory symptoms after smelling suspicious odors that may be linked to chemical vapors and fear that the chemical exposure could lead to serious health problems.

The contractor has made progress over the last 18 months in implementing recommendations made in an independent review of the chemical vapors issues.

The industrial hygiene

program, which protects workers from chemical hazards, has been expanded and improved to the rigor of Hanford's program for radiological controls, the letter said.

New technology is being tested to improve detection of chemical vapors, and a comprehensive vapor control strategy with much improved monitoring should be ready to implement by October, it said.

Implementing the comprehensive vapor control plan "represents the most meaningful and aggressive steps that can be taken to demonstrate and ensure the continued protection of HAMTC and all workers," the letter said.

HAMTC wants better monitoring and improved technology.

But it also has demanded more extensive use of supplied air respirators, including for all work within the tank farms and for some work within 200 feet of the tank farm boundaries. It wants all work that could increase the possibility of chemical vapor releases scheduled on evening, night and weekend shifts. Fewer workers would be on site at those times.

As WRPS considers the demands, it will consider whether changes are realistic to implement and will make a positive difference in worker health and safety, the letter said.

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DOE plans Richland meetings on beryllium rule changes

New rules planned to better protect Hanford workers

Public meetings June 28-30

Hanford group chairman concerned about changes

BY ANNETTE CARY
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The federal government is considering tightening regulations for beryllium at Department of Energy sites to require that action be taken to protect workers when beryllium is present at levels lower than the current action level.

However, Mark Fisher, chairman of the Beryllium Awareness Group, a Han-

ford advisory group, is concerned that some of the proposed new regulations could leave Hanford workers with less protection.

"I don't want any more affected workers," he said.

Meetings will be held at the HAMMER training center near Richland June 28-30 with sessions from 9 a.m. to 1 p.m. and 6 to 9 p.m. each day. HAMMER is at 2890 Horn Rapids Road.

Rather than presenting a formal program, federal officials are expected to listen to public comments and possibly ask questions.

DOE said in a notice filed in the Federal Register that proposed amendments would improve and strengthen current protections for employees of DOE

and its contractors. They would include not only Hanford employees, but also those at Pacific Northwest National Laboratory in Richland.

The federal regulations have not been updated since 1999, even though more is known about the effects of beryllium exposure 17 years later.

In contrast, Hanford rules to protect workers from beryllium were revised as recently as 2014.

The metal beryllium was included in an alloy that was machined until 1986 as part of producing caps for the uranium fuel irradiated at Hanford for weapons plutonium production. Workers may have been exposed during the Cold War or

more recently from beryllium that remains in dust, including in ventilation systems in older building.

Breathing in fine particles of the metal can cause chronic beryllium disease for people with an allergy-like sensitivity to the metal. The lung disease can be debilitating and fatal.

At Hanford, 34 employees have been diagnosed with chronic beryllium disease through 2013, according to information published with the proposed new regulations. In addition, 91 workers have been diagnosed as sensitized to beryllium, meaning they are genetically sensitive to beryllium, have been exposed to ber-

SEE BERYLLIUM, 3A

30 JUN 16

OFFICIALS DISCUSS HANFORD TANK VAPORS AT MEETING

Almost 200 people packed a town-hall style meeting Wednesday night in Pasco to share information about chemical vapors associated with waste held in Hanford's underground tanks.

Among those attending were James Hart, president of the AFL-CIO's metal trades department, state Attorney General Bob Ferguson, Hanford Challenge and union Local 598.

Ferguson has filed a lawsuit against the Department of Energy and its tank farm contractor.

"The only acceptable outcome is a safe work envi-

ronment at Hanford," Ferguson said.

In recent months, about 53 workers have received medical checks for possible exposure to chemical vapors. All have been released by Hanford's occupational medicine provider to return to work. Workers are concerned that exposure to chemicals could cause serious illnesses.

HANFORD TANK VAPOR WEBSITE EXPANDED

The Hanford website providing information on chemical vapors at the nuclear reservation's tank farms has been expanded and given its own Internet address, hanfordvapors.com.

The website has a list of frequently asked questions, maps of where suspected chemical vapors have been reported, and sampling data.

"Our goal is to help educate and inform those with concerns about the hazards we encounter as we continue our critical mission to safely and efficiently manage Hanford's tank waste," said Mark Lindholm, president of Washington River Protection Solutions, the Hanford tank farm contractor, in a message to employees.

The website was launched in early June as part of the contractor's web page and has been given an independent address to make it easier to find and to improve navigation on the site.

HANFORD EMERGENCY CALL WAS FOR LEAKING PROPANE TANK AT PFF

The Hanford Fire Department was called out to the Plutonium Finishing Plant on the nuclear reservation about 10:30 a.m. Wednesday for a leaking propane tank.

The tank was in a storage area several hundred feet from the main plant and workers were kept at a distance.

It is not uncommon for propane tanks to vent in hot weather, said Hanford officials.

— TRI-CITY HERALD

**LOOKING
AHEAD**

SATURDAY
**Places
for kids
to fish**



SUNDAY
**Dentist finds
secret to
happiness**



HANFORD

Workers report illnesses linked to chemical vapors

Workers doubt Hanford safety claims

They describe brain, lung disease at forum

National union official says he has their back

BY ANNETTE CARY
acary@tricityherald.com

Dave Klug walked out of a Hanford tank farm control room on a cold, calm night in January 2010 into air that took his breath away.

"Immediately, I had tightness in my chest. I lost feeling in my face. My heart rate was going crazy," he said.

Klug, a longtime Hanford tank farm worker, was one of several workers who talked about their experiences with chemical vapors at a forum Wednesday night in Pasco.

Klug was off work for 11 months after that night and now has 30 percent permanent, partial disability for reactive airway disease and occupational asthma, he said.

Those who talked at the

forum kept coming back to two types of illnesses they believe are caused by chemical vapors — breathing problems, as Klug described, and neurological issues, including a brain disease called toxic encephalopathy.

Toxic encephalopathy is what Barbara Sall said led to the dementia and death of her husband, a Hanford carpenter who died at the age of 57.

The forum — organized by Hanford Challenge, union Local 598 and state Attorney General Bob Ferguson — drew about 200 people. The two agencies and the state of Washington have filed a federal lawsuit seeking better protection from chemical vapors for Hanford workers.

The Department of Energy, the target of the lawsuit along with its tank farm contractor, has said that all air samples analyzed from the breathing zones of workers since 2005 have not found chemicals in concentrations above the occupational limits set to protect workers.

In recent months, about 53 workers have received medical checks for possible

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**OBVIOUSLY
PEOPLE ARE
HURTING, PEOPLE
ARE SICK AND
SOMETHING
NEEDS TO BE
DONE.**

*Mike Lawrence, former
DOE Hanford manager*

exposure to chemical vapors at Hanford, but all have been cleared to return to work when no symptoms were detected, according to DOE. Blood tests also have come back clear.

But such statements have been met with skepticism.

One worker at the meeting said it seemed that the tank farm contractor, Washington River Protection Solutions, did not care about sick workers when it recently pointed out that it had the second-best safety record in the nationwide DOE clean-up complex.

"They are going to eat

those words" when they lose the lawsuit, said James Hart, national president of the Metal Trades Department of the AFL-CIO.

Mike Lawrence, the DOE Hanford manager from 1984-90, said he has been following the issue closely.

A significant number of workers have experienced health effects or symptoms, Lawrence said. There could be a correlation between the illnesses and toxic fumes from chemicals in waste tanks.

But DOE says it cannot measure chemicals in vapors at levels that current occupational standards say would cause a problem.

"Obviously people are hurting, people are sick and something needs to be done," Lawrence said.

He proposed that an independent, experienced and qualified third party, chosen jointly by DOE and the state of Washington, collect data.

Although a team of experts led by the Savannah River National Laboratory prepared the latest report on Hanford tank vapors, the report has no credibility to

3 JUL 16

Officials trying to raise money to stave off cuts

Museum is looking to raise \$250,000 by end of the year

Officials have made \$150,000 in cuts, including some layoffs

Raising the money would help stop further reductions

BY SARA SCHILLING
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The Reach museum has welcomed more than 60,000 people since it opened almost exactly two years ago at the west end of Columbia Park.

And leaders are hoping some of those who've enjoyed its offerings — from its collection of permanent and rotating exhibits to its many events and education programs — will chip in to help stave off more cuts.

A fundraising campaign aimed at bringing in \$250,000 by the end of the year is under way.

Not everyone can make a large donation, but 2,500 people making \$100 donations would get the museum to its goal, said Lisa Toomey, CEO.

So far, the community response has been positive, said Ron Lerch, a leader of the Reach Foundation, which raises money for the Richland museum.

After a week, about \$5,300 has come in, with more pledged, he said.



LAURIE WILLIAMS Tri-City Herald

Artwork next to the Reach amphitheater lights up in the evening.

Museums and other facilities like the Reach can't support themselves solely on admissions, he said.

"They need fundraising, an endowment, which is something we're working on. We're no different than others," Lerch said, adding, "We thank people who've contributed and we look forward to hearing from more of our friends."

The museum, dedicated to telling stories of the region's history, people and natural resources, opened in July 2014.

It's experienced success-

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WHAT ARE WE WILLING TO DO TO MAKE SURE IT SURVIVES AND THRIVES?

CEO Lisa Toomey

es, from drawing thousands of visitors to starting popular tours and a robust education

program.

It's also faced challenges. "Since 2012, we have raised over \$3.2 million for exhibits and education programs, and received \$600,000 of in-kind contributions," Toomey wrote in a letter to Reach supporters.

However, "the annual cost of operations to continue to develop and deliver robust exhibits, hands-on education, field trips, spring break camps, family and community learning events, tours, field experiences,

SEE REACH, 4A

**LOOKING
AHEAD****THURSDAY**
**Growing
greens
indoors****FRIDAY**
**'Fiddler
on the
Roof'****HANFORD****Feds release plan for highly
radioactive building**

**Hanford 324 Building near
Richland sits above
radioactive spill**

**Contaminated soil would be
grouted in existing hot cells**

Expected to take 7 years

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy is proposing a seven-year plan to clean up a highly radioactive waste spill under a building at Hanford near Richland.

A public comment period on the plan, focused on the removal of the 324 Building, started this week and will continue through Sept. 9. A public meeting is planned at 5:30 p.m. Aug. 24 at the Richland Public Library.

"This is an important project," said Stephanie Schleif, the transition project manager for the Washington State Department of Ecology. "Ecology is pleased to see DOE moving forward on the 324 Building."

Washington Closure Hanford was working toward a legally binding deadline for DOE to have the building down in fall 2013.

2,000 TONS*Weight of one filled hot cell***1,000 FEET***Distance from Columbia River*

But as DOE's contractor worked toward that goal in 2010, it discovered a highly radioactive spill under the building from a hot cell leak that had gone undiscovered.

Hot cells were used to work with radioactive material, allowing workers to look through thick lead glass

windows and manipulate equipment inside the cells.

The building, just north of Richland, is 1,000 feet from the Columbia River. There is no evidence that the spill has migrated toward the river.

After the leak was discovered, a new plan was developed to install remotely operated equipment into the hot cell above the leak to clean up the spill, using the cell as radioactive shielding to protect workers.

As Washington Closure finishes out its DOE contract in less than three

SEE PLAN, 3A

12 JUL 16

Unions halt tank work over vapor protection

Work without supplied air respirators stopped

Hanford union says it's nonnegotiable

Tank farm contractor honors stop-work order

BY ANNETTE CARY
acary@tricityherald.com

The Hanford Atomic Metal Trades Council called a halt Monday to any work in the Hanford tank farms without supplied air respirators.

Dave Molnaa, president of HAMTC, said he would not lift the stop-work order until supplied air respirators are mandatory for all

work in Hanford tank farms.

"I am not backing off. At all. It is nonnegotiable," he told the Herald Monday afternoon.

HAMTC, an umbrella group for 15 unions doing work at the Hanford nuclear reservation, issued a demand for the requirement on June 20, among other demands to better protect workers from chemical vapors.

About 700 people staff each shift at the tank farms where waste is

stored until it can be turned into a stable glass form at the vitrification plant for disposal. It is left from the past production of plutonium for the nation's nuclear weapons program.

The Department of Energy's tank farm contractor, Washington River Protection Solutions, responded to the demands late last week, saying there is no data to support supplied

SEE VAPOR, 6

8 JUL 16

Hanford contractor counters union demands

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Work could be shifted to nights and weekends

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But no premium pay would be offered

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Declines expanded use of supplied air respirators

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BY ANNETTE CARY
acary@tricityherald.com

The Hanford tank farm contractor is asking unions to approve making nights and weekend work the standard shifts at the site's tank farms.

But it will not agree to mandating that workers wear supplied air respirators for routine work activities in the double-shell tank farms, where the contractor believes the risk of chemical vapors is low.

Washington River Protection Solutions responded Thursday to demands made June 20 by the Hanford Atomic Metal Trades Council (HAMTC) to better protect workers from chemical vapors

Vit plant planning layoffs, new hiring

Plant filling 300 new positions

45 to lose jobs as plant changes focus

BY ANNETTE CARY
acary@tricityherald.com



Courtesy Bechtel National

Bechtel National is working toward completing construction of the Low Activity Waste Facility at the Hanford vitrification plant.

Workers who will be laid off from late August to October include mostly employees in the engineering department, as some of the more complex work on the Low Activity Waste Facility, Analytical Laboratory and support facilities at the vit plant is completed.

In addition, some of the layoffs will be in project services — which includes workers not assigned to engineering, procurement or construction — to increase efficiency.

Workers losing their jobs will be notified next week. All will be non-manual em-

ployees.

Bechtel already has filled about 100 of the 300 new positions being created this year as it moves forward with testing the plant and its systems to prepare to start operating part of the plant.

Openings are posted at www.hanfordvitplant.com/job-opportunities.

The plant could be glassifying low-activity radioactive waste for disposal as soon as 2022, using the Low Activity Waste Facility, Analytical Laboratory and support facilities at the plant. Work will continue to resolve technical issues related to treatment of high-level radioactive waste elsewhere at the plant.

Bechtel National at Hanford will work with employees who face layoffs to look for potential new Bechtel jobs.

The plant is planned to turn up to 56 million gallons of radioactive waste into a solid glass form for disposal. The waste, now held in underground tanks if left from World War II and Cold War production of plutonium for the nation's nuclear weapons program.

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Whistleblowers recount retaliation by DOE

Department of Energy took little action against contractors, GAO says

'They are eventually going to terminate anyone who files a concern with DOE,' employee told investigators

Hanford didn't implement pilot program to boost whistleblower protections

BY LINDSAY WISE, SAMMY FRETWELL
AND ANNETTE CARY
McClatchy

WASHINGTON

Hanford has not bothered to implement a pilot project intended to provide more protection for whistleblowers going up against contractor lawyers paid for by the Department of Energy, Sen. Clair McCaskill of Missouri said Thursday.

It was one of many ways DOE has failed to hold its nuclear con-



Tamosaitis

tractors accountable, according to a highly critical Government Accountability Office report.

The report found only two violation notices have been issued against contractors in the past 20 years.

"All the words that the (Department of Energy) proclaims about wanting to have a strong safety culture, a safety-conscious work

environment and that it has zero tolerance for retaliation are a pretense," whistleblower Sandra Black said at a news conference on Capitol Hill, her voice shaking with emotion.

"It is impossible to explain how devastated I am," she said. "I did nothing wrong."

Black and Hanford whistleblower Walt Tamosaitis joined three Democratic senators at a news conference addressing the report.

SEE REPORT, 10A

22 JUL 16

State asks judge for immediate protection at Hanford

State attorney general, others request injunction

Documents detail worker illnesses

Ask court to mandate supplied air respirators

BY ANNETTE CARY
acary@tricityherald.com

Washington state's attorney general wants a federal judge to immediately protect Hanford workers from chemical vapors at

the nuclear reservation's tank farms.

The state alleges that safety measures at the tank farms have been reduced since it and others sued in September to better protect workers.

A request for a preliminary

injunction was filed by the state Thursday. It's part of the federal court lawsuit that Attorney General Bob Ferguson filed against the Department of Energy and its tank farm contractor, Washington River Protection Solutions.

Seattle-based Hanford Challenge and Union Local 598 followed with a similar request for preliminary injunction.

The matter is not scheduled to go to trial until May 2017, and Ferguson and other plaintiffs in the consolidated lawsuits want a judge to step in sooner to ensure

“ I'VE BEEN ASKING FOR MONTHS: HOW MANY SICK WASHINGTON WORKERS WILL IT TAKE BEFORE THE FEDERAL GOVERNMENT FIXES THIS PROBLEM?

Washington Attorney General Bob Ferguson

worker protection until the case is heard.

“We are acting today to protect the Hanford work force and end

SEE JUDGE, 6A

22 JUL 16

SHOOP TO TAKE OVER HANFORD MANAGEMENT JULY 24

Doug Shoop will officially become the new manager of the Department of Energy Hanford Richland Operations Office on July 24.

He replaces Stacy Charboneau, who will become associate principal deputy assistant secretary for field operations for DOE's Office of Environmental Management in Washington, D.C., the same day. It is a new position created as part of a reorganization of DOE headquarters staff assigned to environmental management.

The proposed reorganization was announced last month, but finalized this week.

Shoop will be one of two top DOE managers at Hanford. Kevin Smith will continue to lead the DOE Hanford Office of River Protection, responsible for Hanford tank farms and the vitrification plant being built to treat the waste.

Shoop will be in charge of overall management of Hanford and all other cleanup projects, including groundwater cleanup and protection, moving of radioactive sludge to central Hanford, transferring cesium and strontium capsules to dry storage, tearing down hundreds of obsolete or contaminated buildings and digging up hundreds of waste sites.

The Richland Operations Office budget is about \$1 billion annually.

Shoop has been deputy manager of the office since 2008 and has 30 years of management and technical experience with DOE, pri-

“
THE NUMBER OF CREWS PERFORMING THE HIGHEST HAZARD WORK SIMULTANEOUSLY WAS REDUCED SO THAT THE MOST EXPERIENCED AND SKILLED WORKERS COULD BE CONSOLIDATED TO FOCUS ON THIS WORK.

Stacy Charboneau, Richland Operations Office manager

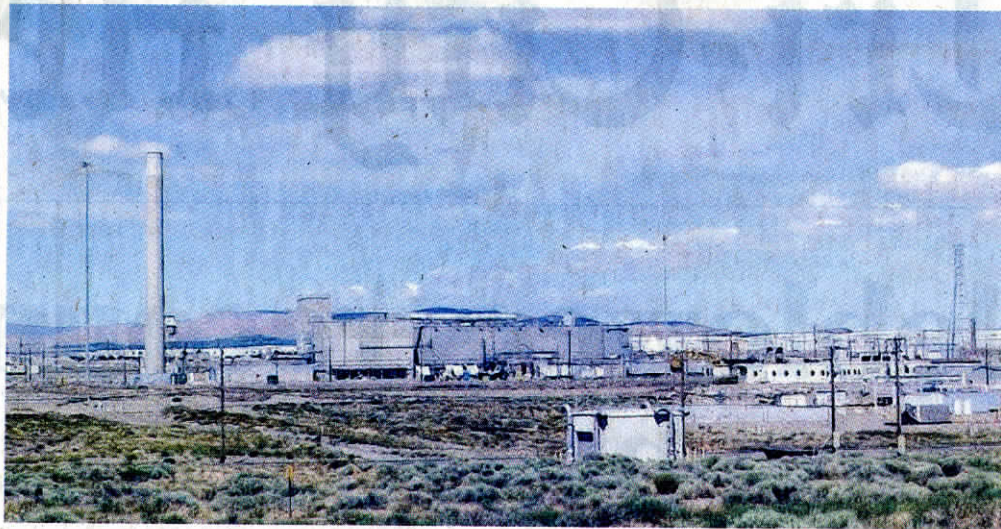
But preparing the plant for demolition proved more difficult than anticipated, because of the hazards it contains and its age.

The Plutonium Finishing Plant is the most hazardous building at the Hanford nuclear reservation, and the largest and most complex plutonium facility in the DOE complex, according to DOE.

The plant operated from 1948-89 to turn plutonium that came into the plant in a liquid solution into buttons the size of hockey pucks or a powder to be shipped to the nation's weapons production facilities. Nearly two-thirds of the nation's plutonium was prepared in the building.

Work has been under way to clean out the plant for 20 years, with stabilization of plutonium left in the plant in a liquid solution at the end of the Cold War. About 20 tons of plutonium-bearing material were stabilized, packaged and shipped off site.

SEE DEADLINE, 4A



ANNETTE CARY Tri-City Herald

The main facility of the Plutonium Finishing Plant could start to be torn down as soon as late August.

HANFORD

Plant demolition deadline extended

DOE gets another year on Plutonium Finishing Plant

Plant was to be down in September

Difficult work, old equipment slowed project

238 GLOVE BOXES

in PFP when clean out started

1 MILE

of contaminated vacuum system piping when clean out began

Sept. 30, 2017.

Finishing the project will remove a significant hazard to the Hanford work force, the public and the environment, said Stacy Charboneau, manager of the DOE Richland Operations Office, in a message to employees Thursday.

The new deadline has been agreed to by DOE and its regulators, the Washington State Department of Ecology and the Environmental Protection Agency.

Demolition had been planned to begin in spring of this year to meet the former deadline.

Now it could start as soon as late August, according to DOE. The start is dependent on a readiness assessment planned for August by DOE and its contractor, CH2M Hill Plateau Remediation Co. An independent team will assess whether the project is ready for the start of demolition.

The previous deadline to have the plant torn down to the ground was set in 2002.

BY ANNETTE CARY
 acary@tricityherald.com

The Department of Energy has been given an extra year to tear down the Hanford Plutonium Finishing Plant.

With demolition of the large central facility of the plant yet to begin, it is clear that DOE could not meet a legally binding deadline to have the plant torn down to slab on grade by the end of September.

The new Tri-Party Agreement deadline requires the plant to be demolished by

2 AUG 16



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SOMETIMES, YOU FIGHT
FIRE WITH FIRE.

Marc Hollen, incident
management team

GALLERY

View photos from the Prosser and Rattlesnake Mountain fire at www.tricityherald.com.

VIDEO

Watch a video of the Range 12 Fire at www.tricityherald.com/video.

A firefighting vehicle drives toward the wildfire as it burns toward the Hanford Reach National Monument on Sunday night.

Courtesy Scott Butner

2 AUG 16

Firefighters burn Rattlesnake Mountain

Backfire set to protect Hanford, Benton City

BY ANNETTE CARY
acary@tricityherald.com

A backfire was set and burned over the top of Rattlesnake Mountain on Sunday night, the only way fire officials could see to keep the

fire from spreading to the Hanford nuclear reservation and Benton City.

“It’s all black all the way to the top,” said John Janek, assistant fire management officer for the Mid-Columbia River National Wildlife Refuge Complex, about the north-

east slope of the mountain. The backfire worked as planned. At about 11:30 a.m. Monday, the fire set on the northeast side of Rattlesnake Mountain burned into the Range 12 Fire that had been moving toward Hanford between highways 240 and 241

since Sunday. “Sometimes, you fight fire with fire,” said Marc Hollen, spokesman for the incident management team that took over Monday. The fire covered an estimated 110 square miles, up from 94 square miles Sunday evening. It started Saturday at the Yakima Training Center and advanced into Benton County on Sunday. No cause had been determined Monday. After the fires merged and burned themselves out, firefighters continued to do mop up work. The section that burned is on the portion of the monument called the Arid Lands Ecology Reserve, which is closed to the public. It’s one of the largest intact shrub-steppe habitats in the Columbia Basin.

Patches of vegetation remain in the area the fire burned through that could ignite if the wind comes up or changes direction, Hollen said. But there is nothing left to burn to allow the fire to cross Rattlesnake Mountain to the contaminated area of the Hanford nuclear reservation.

Fire officials were concerned that there would be no way to control the fire if it spread over the top of the mountain and down the rugged and steep slopes of Rattlesnake Mountain, the highest point in the Mid-Columbia at 3,450 feet. It jumped several highways. Smoky air made visibility too

SEE RATTLESNAKE, 7A

Landfill reaches 20-year mark

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Waste disposal key to allowing cleanup
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.....
ERDF holds almost 18 million tons of waste
.....

.....
Most of the waste was near Columbia River
.....

BY ANNETTE CARY
acary@tricityherald.com

A huge hole in the ground at Hanford received accolades Wednesday.

The Environmental Restoration Disposal Facility, or ERDF, the massive landfill in central Hanford, turned 20 years old this month.

On its first day of operation, 20 tons of waste were disposed of, said Scott Sax, president of Washington Closure Hanford, the Department of Energy contractor for the project, at a celebration with employees. It was a single container.

Fifteen years later, on a record disposal day, 854 containers of waste — each holding 20 to 22 tons of waste — were dumped into the landfill.

“That’s in excess of 18,000 tons in one shift,” said Mike Casbon, ERDF resident engineer.

Casbon started on the project in 1993, when it was little more than a gleam in the eye of a Hanford official.

Now the landfill holds almost 18 million tons of contaminated soil and debris, including low-level radioactive and hazardous chemical waste.

SEE LANDFILL, 8A

26 JUL 16

OCCUPATIONAL SAFETY AGENCY TO VISIT HANFORD TANK FARMS

The National Institute for Occupational Safety and Health plans to interview Hanford tank farm employees during a visit to the nuclear reservation July 25-28.

The agency, called NIOSH, is a branch of the U.S. Centers for Disease Control focused on workplace safety and health.

NIOSH announced last month that it planned a short-term evaluation related to Hanford worker exposure to chemical vapors associated with waste held in underground tanks.

The investigators also plan to observe work practices in Hanford tank farms, review programs and speak with management and union leaders in addition to workers during the visit.

Employees of Washington River Protection Solutions have been forwarded a NIOSH memo that includes the times and locations that employees may voluntarily meet with investigators to discuss their concerns.

Despite a stop work order called by the Hanford Atomic Metal Trades Council, two more Hanford workers reported symptoms consistent with chemical vapor exposure last week.

They bring the number of workers receiving medical checks for possible chemical vapor exposure to about 55 in recent months. All were cleared to return to work, but workers are concerned that chemical exposures could result in serious respiratory or neurological illnesses.

Judge orders Hanford chemical vapor protections

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy and its tank farm contractor have been ordered to continue using supplied-air respirators and take other steps already proposed by DOE to protect Hanford workers from chemical vapors.

U.S. Judge Thomas Rice ordered DOE and its contractor at a hearing Tuesday to take the steps until he rules on immediate protections requested by the state of Washington and other plaintiffs in a motion for preliminary injunction they filed last month.

DOE had asked for reasonable time to prepare arguments and retain expert witnesses before Rice ruled on the preliminary injunction, but offered to take steps to protect workers until the ruling.

It said it would continue using supplied air respirators within all Hanford tank farms. It had already taken that action in response to demands made in June by the Hanford Atomic Metal Trades Council, an organization of Hanford unions.

DOE also offered not to do any work in the tank farms that disturbs waste, unless needed for safety reasons, until the judge rules on the state's request for immediate protection.

Disturbing waste increases the possibility that chemical vapors associated with waste in underground tanks could be released.

If work that disturbs waste must be done, plaintiffs would be notified and a new

mobile monitoring lab would be used to help protect workers, according to court documents.

In recent months, about 55 Hanford employees have received medical evaluations for possible exposure to chemical vapors.

The tank farm contractor said all have been cleared to return to work, but employees are concerned that exposure to chemical vapors could lead to serious respiratory or neurological problems.

The restriction would not prevent testing of new waste retrieval equipment being installed in Tank AY-102, a Hanford double-shell tank being emptied of waste because it has an interior leak, DOE said in court documents. The equipment would be tested with water and only personnel essential to the testing would be allowed in the area, DOE said in court documents.

By the third week of August, the tank farm contractor, Washington River Protection Solutions, will have a suite of new vapor monitoring and detection equipment being tested in one of the Hanford tank farms, DOE said.

The proposed measures would encompass the protections the state had asked for in its motion for a preliminary injunction, or make them unnecessary, DOE said in a court filing.

Hanford Challenge and Local 598, the pipefitters union, also had requested a preliminary injunction.

The judge set a hearing on the motion for preliminary injunction for Oct. 12 in Spokane.

3 AUG 16

2 HANFORD WORKERS CHECKED FOR VAPOR EXPOSURE

Two Hanford workers were taken for medical evaluations for possible exposure to tank vapors Wednesday — a day after U.S. Judge Thomas Rice ordered protections for Hanford workers.

The judge, acting on a suggestion made by the Department of Energy, ordered supplied air respirators be worn inside the tank farms and that no work be done to disturb waste unless necessary for safety reasons.

On Wednesday, three workers outside the AY-Tank Farm at Hanford reported smelling a suspicious odor about 8:45 a.m.

Because they were outside the tank farm, they were not required to be wearing supplied air respirators. No work was being done inside the tank farm that would

have disturbed waste, Hanford officials said.

Two of the workers had symptoms and received medical evaluations. They were later released to return to work. The symptoms were not made public, but respiratory symptoms are common in vapor incidents.

A third worker who smelled the odor declined a medical evaluation.

Wednesday's incident brings the number of workers receiving medical checks for possible vapor exposure this spring and summer to about 57.

FIRE THAT THREATENED HANFORD 60 PERCENT CONTAINED

Firefighters expect to have the Range 12 Fire that was moving toward the Hanford nuclear reservation contained by today.

Wednesday, it was 60 percent contained, up from

20 percent Tuesday.

Crews were starting to be released from the fire Wednesday after they kept the fire perimeter intact during a red flag weather warning issued Tuesday because of winds and low humidity.

There were about 228 firefighters and staff assigned to the 275-square-mile fire Wednesday, down from 404 earlier. One helicopter, one bulldozer and 27 fire engines also were at the fire.

Wednesday, firefighters were continuing to reinforce containment lines along the 117 mile perimeter of the fire.

A temporary flight restriction over the fire area has been lifted. The restriction was ordered after a drone interfered with firefighting efforts over the weekend.

The cause of the fire,

Work on the landfill, considered among Hanford's most hazardous, had been scheduled as one of the last environmental cleanup tasks along the Columbia River.

It's the final high-hazard project undertaken by Washington Closure before its DOE contract expires at the September's end after 11 years.

"Our goal this year has been to finish strong and finish with pride," said Scott Sax, president of Washington Closure.

Because the contractor didn't know exactly what the pipes might contain, the goal had been to finish augering just 28 of the buried pipes by the contract's end. Instead, it finished the work on all 80 pipes for which augering could be done.

The 618-10 Burial Ground was one of just two burial grounds at Hanford to use vertically buried pipes, called vertical pipe units, to dispose of radioactive and hazardous chemical waste.

Work on the other one, the 618-11 Burial Ground by the parking lot of Energy Northwest's nuclear power plant, has yet to start. But less waste is expected to be buried there.

From 1954-63, large cask trucks, heavily shielded to provide protection from radiation, carried highly radioactive laboratory waste to the 618-10 Burial Ground about six miles north of Richland along the main highway to the Hanford Wye Barricade.

which started Saturday on the Yakima Training Center, has not been determined. No one was injured in the fire.

DOE strengthening whistleblower protection at Hanford, other sites

■ A critical Governmental Accountability Office (GAO) report released in July found DOE rarely fined its contractors at nuclear sites for retaliating against whistleblowers that raised safety issues.

BY ANNETTE CARY
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The Department of Energy has taken the initial step to make clear that it has the authority to fine contractors or subcontractors at nuclear sites including Hanford if they retaliate against workers raising nuclear safety issues.

It made public the proposed rule Thursday, following a July Government Accountability Office report requested by U.S. senators, including Sen. Ron Wyden, D-Oregon, and Sen. Claire McCaskill, the ranking member of the Homeland Security and Governmental Affairs Subcommittee on Investigations.

The GAO report found that DOE's nuclear program seldom holds its contractors accountable for unlawful retaliation against whistleblowers.

Only two violations have been issued in the past 20 years, the report found.

DOE took enforcement action in 2005 and 2008, but then in 2013 concluded it had limited authority to hold contractors accountable for unlawful retaliation.

In May, more than a month after the GAO asked DOE to verify the accuracy of information in its report to Congress, DOE an-

nounced plans to amend its nuclear safety regulations, including making clear that retaliation against contractor workers who raised nuclear safety issues would be an enforceable nuclear safety violation, the report said.

"Given the potential for confusion regarding the enforceability of DOE's policy, it is incumbent on DOE to act as quickly as possible to codify this policy in regulatory language to ensure that the enforceability of the policy is clearly understood," the GAO report said.

Wyden was not impressed with the DOE proposed improvements.

"When you turn in your assignment late, you shouldn't get extra credit for it," he said in a statement. "That's what the Department of Energy is trying to do with this announcement."

He pointed out that DOE had known for three years that its regulations needed to be improved.

DOE also announced on Thursday new guidance for its employees responsible for issuing and administering contracts to make clear when DOE will reimburse legal costs in whistleblower cases.

A primary consideration will be whether a DOE contractor retaliated against a whistleblower, even if the whistleblower fails to win a legal action, said DOE general counsel Steven Croley in a blog post.

"Just because a company prevails in their defense does not necessarily mean they will be entitled to reim-

bursement costs," Croley said.

Croley also said in the blog post that DOE will strengthen its Employee Concerns Program to provide an alternative for employees to report issues.

"We will ensure that the Employee Concerns Program is independent and free from conflicts of interest," Croley said.

The GAO report said that, although DOE maintained separate employee concerns programs in addition to its contractors' employees concerns programs, DOE can refer or transfer the concerns brought to its program back to the contractor.

DOE said some DOE sites did not refer any issues brought to its Employee Concerns Program back to its contractors, but one site transferred or referred 40 percent of issues brought to it. The report did not provide information about practices at specific sites, such as Hanford.

The practice of transferring or referring issues back to contractors could discourage employees from raising concerns and negates the benefit of having a DOE program independent of contractor programs, the report said. Routing cases back to contractors could jeopardize employee anonymity and impair the independence of an investigation.

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WASHINGTON CLOSURE HANFORD FINISHES CONTRACT

'Like a hot knife through butter'

■ Washington Closure Hanford wraps up its contract by chewing through 80 waste-filled, vertically buried pipes at Hanford.

BY ANNETTE CARY
acary@tricityherald.com

Washington Closure Hanford has exceeded expectations, finishing its contract by chewing through 80 waste-filled, vertically buried pipes just north of Richland on the Hanford nuclear reservation.

"It was like a hot knife through butter," said Mark French, Department of Energy project director. "It could not have gone any better."

10 AUG 16

State fines DOE \$50,000 for mishandling waste

BY ANNETTE CARY
acary@tricityherald.com

The Department of Energy and one of its contractors are being fined \$50,000 for mishandling waste at Hanford's T Plant, according to the Washington State Department of Ecology, which issued the penalty.

"For everyone's safety, dangerous waste at this nuclear facility must be properly managed and stored," said Alex Smith, Ecology's nuclear waste program manager, in a statement Tuesday.

The Department of Ecology also ordered DOE and its contractor, CH2M Hill Plateau Remediation Co., to obtain detailed analysis of waste before storing it and to maintain records properly.

The waste included five containers holding leaking batteries, paint chips and concrete pieces, or grease. All the waste was generated at T Plant, and some of it came from floor scrapings that had the potential to include low levels of radioactive contamination.

T Plant was built during World War II to chemically

separate plutonium for weapons use from uranium fuel irradiated at Hanford reactors. It now is used to store and treat Hanford waste during environmental cleanup of the nuclear reservation.

"Our records show the contractor did identify and designate all of the waste in the five containers by November 2015, and we will be inquiring about the possibility of a miscommunication on at least one of the violations," said DOE spokesman Mark Heeter.

DOE and its contractor are

required to identify the waste before it is put into storage, rather than a few days after an inspection, and must have information available to inspectors within 24 hours of a request.

The state asked for records several times and based the violations on the records it received.

DOE has had trouble following the rules at T Plant in four previous inspections before the most recent inspection on Nov. 18, 2015, according to

SEE WASTE, 4A

29 AUG 16

CH2M Hill ready to dig in

■ CH2M Hill Plateau Remediation Co. will take on most of the remaining Columbia River corridor work at Hanford.

BY ANNETTE CARY
acary@tricityherald.com

About 300 Hanford workers become employees of CH2M Hill Plateau Remediation Co. or its subcontractors today.

After 11 years, Hanford Washington Closure is wrapping up its contract at the Hanford nuclear reservation at the end of September and has done its last

work in the field.

At its peak in 2012, with the help of economic stimulus money from the American Recovery and Reinvestment Act, Washington Closure employed about 1,200 workers. Today, its work force drops to just fewer than 100.

The number of employees is expected to decline through September to about 30 people; who will remain for several months in a contract closeout office working on audits, documenting complet-

ed projects and finishing up other paperwork.

All but about a dozen employees not joining the closeout office have other Hanford jobs lined up or plan to retire, with the last dozen still looking for work, said Peter Bengtson of Washington Closure.

Washington Closure has known since its contract was awarded that its goal was to complete most cleanup of Hanford in 220 square miles along the Columbia River, an area called the river corridor.

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WE'RE GIVING PRC
SOME GREAT WORKERS
WHO PERFORMED
REALLY WELL.

*Peter Bengtson, Washington
Closure spokesman*

SEE HANFORD, 5A

HANFORD TANK FARM

2 SEP 16

Tentative union agreement reached on stop work order

■ HAMTC ordered work stopped unless workers were using supplied air respirators to protect against chemical vapors. The agreement could allow workers to use air-purifying respirators.

BY ANNETTE CARY

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The Hanford Atomic Metal Trades Council has agreed that if certain conditions are met, it will lift an order prohibiting tank farm

work unless workers are protected from chemical vapors by supplied air respirators.

A memorandum of understanding was signed Wednesday by HAMTC and the tank farm contractor, Washington River Protection Solutions, after mediation.

The Department of Energy said in a statement that it was encouraged and will monitor efforts of HAMTC and the tank farm contractor to fulfill the conditions of the agreement.

SEE HANFORD, 11A

Hanford workers take cover after burial ground incident

BY WENDY CULVERWELL
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Workers at the Hanford Burial Ground were briefly ordered to take cover Wednesday morning, after a drum possibly containing radioactive waste began smoking after reacting with oxygen at the 618-10 area.

Jerry Holloway, spokesman for Washington Closure Hanford, confirmed there was an incident at the burial ground about six miles north of Richland. The take-cover order affected about 130 workers and lasted for about 90 minutes.

Holloway characterized the incident as a "reaction," rather than an explosion. The possibility of reactions is anticipated whenever a drum is opened, he said.

The affected drum had been removed from the ground early Wednesday and placed in a special containment area designed to prevent reactions in individual drums from spreading.

The reaction ended on its own, Holloway said.

Workers, including the Hanford Fire Department, covered the drum with soil and returned it to its trench for subsequent disposal.

Other drums in the storage area were also reburied as a precaution.

Initial surveys indicate no release of hazardous material, Holloway said. There will be additional surveys.

Washington Closure Hanford was praised just this week for its successful mission to process 80 waste-filled, vertically buried pipes at the 6.5-acre 618-10 Burial Ground.

Between 1954 and 1963, the area received radioactive laboratory waste, which was deposited in a series of vertical pipes about six miles north of Richland.

The contractor processed

80 of the 95 pipes exceeding the original goal of processing 28.

For the project, Washington Closure Hanford ringed the original pipes with larger diameter pipes, then augured through the contents. The mix of waste and soil is then removed for proper disposal.

The remaining 14 pipes will require a different disposal method because they are encased in thicker steel.

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3 [EP] 16
**HANFORD WORKER
ARRESTED FOR ALLEGED
DEATH THREATS**

A Hanford worker was arrested Friday after allegedly threatening to kill several people at his job.

A Tri-City regional SWAT team was sent to arrest Dominick Steven Furino, 57, of west Pasco, police said. He made several threats against other Hanford workers because of an ongoing medical dispute with his employer.

Furino may have been armed and dealt with "potential mental health issues," police said.

Furino was booked into the Benton County jail on suspicion of felony harassment.

6 SEP 16

Arc flash protector may help save lives

Tri-City Herald

Workers at the Hanford tank farms no longer have to choose between protection from potentially deadly arc flashes or from exposure to chemical vapors.

Washington River Protection Solutions helped develop a face shield to protect against an arc flash. The shield can be worn with full-face respirators, such as the supplied air respirators now worn at Hanford tank farms to protect workers from chemical vapors.

The new equipment earned the Hanford tank farm contractor the Innovation Award at the Voluntary Protection Program Participants' Association's recent national conference.

Arc flashes are a type of electrical explosion in which temperatures can reach 36,000 degrees. The explosion, which includes a blinding flash of light and a deafening noise, forces an enormous amount of energy from the electrical equipment, spreading hot gases and molten metal.

Arc flashes have been in the news in the Mid-Columbia. An arc flash last year at Grant PUD's Priest Rapids Dam upriver from Hanford caused six workers to be hospitalized with serious electrical burns, including one man who spent almost a month in intensive care at Harborview Medical Center in Seattle.

Tank farm workers questioned whether there was a way to guard against arc flashes at Hanford, leading to a product that can save lives there, said Mark Lindholm, president of Washington River Protection Solutions.

"In the past, workers had to weigh the hazards and



Courtesy WRPS

Tank farm workers can use a newly developed face shield to protect against an arc flash while they are wearing respirators to protect against chemical vapor exposure.

choose whether to wear respiratory protection or arc flash protection," said David Kuster, one of several Washington River Protection Solutions electricians who worked with a supplier and testing laboratories on the face shield and helped with a presentation on the shield at the national conference.

Not having to choose one protection or the other is a game changer, Kuster said.

In addition to electricians, Washington River Protection Solutions safety professionals, management and Department of Energy officials helped develop the face shield.

It is being used by all tank

farm electricians and at some other Hanford nuclear reservation projects. The face shield also is available for commercial use.

This is the second year in a row that the tank farm contractor has won the Innovation Award.

Last year, Washington

“
IN THE PAST,
WORKERS HAD TO
WEIGH THE
HAZARDS AND
CHOOSE WHETHER
TO WEAR
RESPIRATORY
PROTECTION OR
ARC FLASH
PROTECTION.”

David Kuster, Washington River Protection Solution electrician

River Protection Solutions was recognized for protecting workers with a tool its employees developed to safely take radiation readings.

The tool features lightweight piping with survey points built in to position electronic dosimeters, allowing radiation levels to be recorded by workers keeping a safe distance from long pieces of contaminated equipment removed from underground tanks holding radioactive waste. The tool is moved down the length of the equipment until the survey is completed.

Washington River Protection Solutions also was awarded the Voluntary Protection Program Star of Excellence Award for the second year in a row at the recent conference, for maintaining a recordable injury case rate 75 percent lower than the industry average.

The tank farm contractor has had workers exposed to possible chemical vapors, but most of those incidents are not classified as recordable injuries.

3 SEP 15

HANFORD TANK FARM CONTRACTOR WANTS LAWSUIT DISMISSED

Washington River Protection Solutions, the Hanford tank farm contractor, has joined the Department of Energy in asking a federal judge to dismiss Washington's lawsuit against DOE and its contractor seeking better protection for Hanford tank farm workers from exposure to chemical vapors.

DOE asked on Aug. 23 that the case be dismissed, arguing that the state has no legal standing in the case.

Its tank farm contractor has joined in two of the arguments DOE makes.

The state may not bring a lawsuit to vindicate the interest of a narrow subset of citizens, in this case Hanford workers, DOE and its

contractor agree. Workers could instead file their own lawsuits.

They also agree that the state has not demonstrated a specific harm, such as damage to its land or water from chemical vapors.

State Attorney General Bob Ferguson has said the state will strenuously oppose the motion to dismiss its lawsuit and expects to prevail.

Hanford worker allegedly created 'hit list' of co-workers, doctors

7 SEP 26

■ **Dominick S. Furino, 57, of Pasco, reportedly is a CH2M Hill Plateau Remediation Co. worker.**

BY KRISTIN M. KRAEMER
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A Hanford worker was ordered held without bail Tuesday after his arrest on allegations that he threatened to kill co-workers, doctors and state Department of Labor & Industries employees over his medical treatment and denied claims.

Dominick S. Furino, 57, allegedly created a "hit list" with 20 names.

An unnamed girlfriend also is on the list, court documents show.

"The specific threat is that he plans to track the people

listed down and 'blow their heads off,'" documents said.

Furino reportedly works for CH2M Hill Plateau Remediation Co.

He was arrested Friday afternoon. The Tri-City regional SWAT team was sent to his west Pasco home out of concern that he might have been armed or had "potential mental health issues," according to police.

Furino is in the Benton County jail on suspicion of felony harassment with threats to kill. He appeared before Judge Steve Osborne in Benton County District Court.

Richland police were tipped off to the alleged hit list by a man who thinks his name is on the list and believes Furino "100 percent" intends to carry out the threats, court documents

said.

A document filled out by Detective Athena Clark said Furino suffers from mercury poisoning, which has resulted in multiple medical issues.

"He is angry at the people on the list for dissatisfaction of treatment and denial of medical claims," Clark wrote.

Furino allegedly told the tipster that he will not commit suicide after killing everyone on the list "because he wants to stand in front of a judge and tell him why he did what he did," the court document said.

Prosecutors have until Thursday to charge Furino or release him from jail.

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21 SEP 16

Hanford deadlines might be at risk

■ The Department of Energy is evaluating a report that says extending tank farm boundaries could lead to layoffs, add up to \$769 million in costs and delay work to empty leak-prone single shell tanks at Hanford.

BY ANNETTE CARY
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Newly set deadlines for emptying some Hanford waste tanks might not be met if DOE takes certain steps to better protect workers from chemical vapors, according to a preliminary report.

The Department of Energy requested that its tank farm contractor look at the potential impact of a union demand that supplied air respirators be used not only within the boundaries of Hanford tank farms but in an expanded area of 200 feet beyond tank farm fences.

Contractor Washington River Protection Solutions concluded that rather than having five leak-prone tanks from a set of 12 emptied by the end of 2020, the work might not be completed until April 20, 2021.

In addition, nine tanks in the

SEE DEADLINES, 8A

11 SEP 16

Hanford Collection finds new home

■ History project at Washington State University Tri-Cities has a contract to curate and care for artifacts and archival material.

BY SARA SCHILLING
 sschilling@tricityherald.com

A wooden telephone booth sat in the middle of one of the rows. It was so old it had hand-

crank phones inside. Another phone booth, a little newer and more updated — but still decades old — was nearby. It was green, and it looked weathered from the years. The phone inside had a switch. That meant, “you

had two choices: Line 1 or Line 2,” Michael Mays said. He’s director of the Hanford History Project. Hosted by Washington State University Tri-Cities, the project is a physical and online archive of Hanford history. The physical side is getting a big boost — in the form of other items.

Thousands of unique artifacts, documents and other archival material from the Hanford site — starting in the early 1940s through the Cold War era — are being moved to a facility in north Richland. Hanford History Project has a contract to curate and care for the items, which belong to the Department of Energy. About 40 percent of the “Hanford Collection” already has been moved off the Hanford site, with the rest scheduled to be moved by the end the September. “We’re right on schedule,” Mays said, noting an open house is scheduled from 9

SEE HANFORD, 7A



SARAH GORDON Tri-City Herald

Jillian Gardner-Andrews, Hanford History Project coordinator, looks on as Alex Cuello from Mission Support Alliance, moves containers o artifacts. Thousands of Hanford artifacts are being moved into Richland where they can be put on public display. See a video at tricityherald.com/video.

Obama administration considers arming Syrian Kurds against ISIS

■ **President caught in the middle trying to balance the territorial and political ambitions of two warring U.S. allies that Washington needs to combat the Islamic insurgency: Turkey and the Syrian Kurds.**

New York Times News Service

WASHINGTON

The Obama administration is weighing a military plan to directly arm Syrian Kurdish fighters combating the Islamic State, a major policy shift that could speed up the offensive against the terrorist group but also sharply esca-

late tensions between Turkey and the United States.

The plan has been under discussion by the National Security Council staff at a moment when President Obama has directed aides to examine all proposals that could accelerate the fight against the Islamic State, also known as ISIS, or ISIL. Obama has told aides that he wants an

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TOP STORIES
STAY CONNECTED

LOCAL

Helicopter helps search
for missing Richland man

PAGE 2A

LOCAL

Investigators think fire at
Pasco warehouse may be arson

PAGE 4A

LOCAL

Heritage Days in Pasco to
celebrate Lewis and Clark

PAGE 6A

20 SEP 16

■ Two Hanford whistleblowers were awarded compensation after being suspended from their jobs by Computer Sciences Corp.

BY ANNETTE CARY

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Two Hanford whistleblowers have been awarded \$216,000 in back pay and compensation, plus interest and attorney fees, after being suspended from their jobs by Computer Sciences Corp.

The decision by a U.S. Department of Labor administrative law judge followed a six-day trial in Kennewick that began in November after the company appealed an earlier decision.

The whistleblowers were represented by Hanford Challenge, a Seattle-based worker advocacy group for the nuclear reservation, and an additional attorney.

Kirtley Clem and Matthew Spencer worked as computer specialists for Computer Sciences Corp., or CSC, in 2012 when the company held the occupational medicine contract for Hanford.

The two workers were

SEE JUDGE, 5A

18 SEP 16 Reach museum leaders continue to mull future

BY SARA SCHILLING

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Leaders of the Reach museum in Richland continue to mull the best path forward for the facility.

The chief executive officer said the Reach is “at a crossroads,” with the choice of scaling back and focusing on sustainability or continuing to fulfill its educational mission.

“What it’s going to come down to is, what do we really want as a community?” said Lisa Toomey, CEO.

Reach officials plan to make a presentation to the Richland City Council during the first week of October. The session will be open to the public, and Toomey said she hopes to see many community members there.

The Richland Public Facil-

ities District board, which oversees the Reach, has its next meeting at 4 p.m. Sept. 23 at the museum.

The Reach has seen successes since it opened in 2014, from welcoming thousands of visitors to implementing robust tour and education programs.

But it’s also experienced tight finances. That wasn’t unusual, as startups generally need a few years to get off the ground, and museums and interpretive centers generally aren’t sustainable on their own.

Still, it’s led to some tough decisions. This year, Reach officials have made more than \$200,000 in cuts, including closing the doors on Sundays and laying off some employees.

In a recent work session, the Richland Public Facilities District board worked

on a draft business plan.

“As we move forward, we have to decide whether our priority is no debt at all or fulfilling the education mission of the Reach — because we can’t do both with what we are currently able to earn,” the draft document said.

The Reach’s goal was never to be a self-guided museum experience, but instead to “engage and inspire visitors” and provide numerous education opportunities, it said.

Now, “we as a community need to decide if this commitment to becoming a meaningful and beloved cultural institution is still our goal,” or if “we scale back so we can assure zero debt and function as a passive museum” without offerings like education and tour programs.

75,000

Number of visitors it has welcomed since the Reach opened.

17,000

Number of students the Reach has served since opening.

170

Number of education programs at the museum and in schools.

Toomey is retiring at the end of the year, and among the decisions officials will have to make is how or if to replace her.

Since the Reach opened, it’s welcomed more than 75,000 visitors and served 17,000 students through 170 education programs at the museum and in schools.

More than 500 people have learned about the region’s history, culture, natural resources and agriculture through the tour pro-

WASHINGTON CLOSURE HANFORD

20 SEP 16 Departing contractor gives \$300,000, most for enjoyment of cleaned up land

■ Much of legacy gift to the Tri-City community will be used to pay for projects that enhance access and enjoyment of the Hanford Reach of the Columbia River as it cuts through the nuclear reservation.

BY ANNETTE CARY
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Washington Closure Hanford on Wednesday built on its 11-year success cleaning up most of the 220 square miles of the Hanford

nuclear reservation along the Columbia River.

With just two days left before its contract with the Department of Energy expires, the company gave a legacy gift to the Tri-City community.

The Hanford contractor wrote a

check for \$300,000, much of it to be used to help pay for projects so people can enjoy the river as newly cleaned up land becomes available for public access.

An endowment with the dona-

SEE HANFORD, 8A

HANFORD

23 SEP 16

First vit plant building ready for operation

BY ANNETTE CARY
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The first building on the Hanford vitrification plant campus is ready to start operating.

A permanent power supply has been connected to Building 87, the primary electrical switchgear building at the site.

It is one of about 22 support facilities on the 65-acre campus that will support the four main buildings where up to 56 million gallons of radioactive and hazardous

chemical waste will be turned into a stable glass form for disposal.

The switchgear building takes in power to be distributed to the rest of the vitrification plant.

"Energization of Building 87 represents the transition from temporary construction-phase utilities to permanent utilities that will operate the vit plant," said Peggy McCullough, Bechtel National project director for the Department of Energy project.

DOE is working toward a goal of starting to glassify

low-activity radioactive waste in 2022, with handling and treatment of high-level radioactive waste at the plant delayed as technical issues are resolved.

"The pace of our construction, startup and commissioning will increase considerably over the next few years," McCullough said.

The vitrification plant's four main facilities and support facilities, like the main electrical switchgear building, have been using temporary power so far during construction.

System testing still must be done on the facilities that the main switchgear building will serve before it can start distributing electricity.

As the remaining construction for the plant's infrastructure facilities is completed, they also will be tested and will then be provided additional permanent utilities, such as water, compressed air and steam.

Initially, it will operate the plant's Low Activity Waste Facility and Analytical Laboratory.

The Analytical Laboratory is 95 percent complete, and construction of the Low Activity Waste Facility is expected to be completed in mid-2018, according to Bechtel.

DOE officials said they were pleased with the progress at the plant.

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HISTORIC B REACTOR CONCERTS

Ticket sales ^{27 Sep 16} wrap up today

BY SARA SCHILLING
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Reg Unterseher has sung in venues around the world.

But, "I've never sung in any place remotely like this," he said.

"This" is Hanford's historic B Reactor. And on Sept. 30 and Oct. 2, Unterseher — an acclaimed composer and performer — will take part in a pair of ground-breaking concerts at the site.

The shows by the Mid-Columbia Mastersingers are the first-ever choral concerts to be in a decommissioned nuclear reactor anywhere in the world.

"It is such an amazing thing," Unterseher said. "I

think it's our responsibly to tell our stories. That's what this concert does."

Tickets are on sale through today.

Unterseher and his Mastersingers colleagues performed a couple of songs at the B Reactor last fall to celebrate the creation of the Manhattan Project National Historical Park.

That gave a taste of what the upcoming experience will be like, Unterseher said.

He's preparing for powerful, emotion-filled performances.

The acoustics are incredible — like a cathedral, he said. And the program is something special.

It'll explore the history and legacy of the B Reactor

and Hanford, touching on themes of war, of scientific achievement, of peace and of hope.

The program includes two pieces by Unterseher — *Hanford Songs* and *If You Can Read This*. They're settings of poems by Kathleen Flenniken from her acclaimed collection *Plume*.

Flenniken was Washington's poet laureate from 2012-14. A Richland native, she's the daughter of a Hanford scientist and worked there herself as an engineer.

Plume is about life in the Tri-Cities and Hanford.

The program also will include Karen Thomas' *Over the City*, about the Hiroshima bombing. It was commissioned for the 50th anniversary.

Thomas, who's based in the Seattle area, plans to attend the Sept. 30 concert.

Her piece — a collaboration with poet Molly McGee — is personal, bringing home the effects of the bombing. "Having it performed in the reactor, where materials (for

atomic bombs) were developed is — I get teary-eyed thinking about it," Thomas told the Herald. "It's an emotional thing."

The program opens with *Look Back on Time with Kindly Eyes* by Joseph Gregorio, using the poem by Emily Dickinson.

It serves as a frame for the show, imploring listeners to, "*Look back on time with kindly eyes/He doubtless did his best; How softly sinks his trembling sun/In human nature's west!*"

The Mastersingers also will perform Eric Whitacre's *Leonardo Dreams of his Flying Machine* as a homage to the scientific and technological advancements made at Hanford.

And the program will close with Samuel Barber's *Agnus Dei*, an arrangement of his *Adagio for Strings*. It's a request of God to help find peace.

With the program, "we're telling a pretty holistic story

SEE TICKET, 3A

DOE defends program to protect workers

■ A Department of Energy federal court filing questions whether reports of suspicious smells and symptoms reported by workers at the Hanford tank farms are evidence that workers are not being protected from chemical vapors.

BY ANNETTE CARY
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The Department of Energy questions whether reports of suspicious smells and symptoms reported by workers at the Hanford tank farms are evidence that they are not

protected from chemical vapors.

Eyewitness reports of some workers are not sufficient to require a judge to impose additional safety measures, DOE argued in a federal court filing.

The state of Washington, Hanford Challenge and union Local 598 have asked a federal court

judge to immediately require increased worker protections while their lawsuit seeking better worker protection is decided.

Scientific and technical evidence show that more worker protection is not needed, DOE said.

Potential vapor events are recorded if workers report symptoms

or suspicious smells, but the fraction of workers experiencing possible events is very small, DOE said.

From January through July, workers reported suspicious smells or symptoms that could indicate

SEE HANFORD, 8A

Richland man sues EPA over Hanford air permit

■ The Clean Air Act allows citizens to file a lawsuit if they may be affected. Bill Green says that as a Richland resident, his health could be harmed by radionuclide pollutants released into the air at nearby Hanford.

Tri-City Herald

A Richland man has sued the Environmental Protection Agency to force it to take action on a Clean Air Act operating permit for the Hanford nuclear reservation.

Bill Green claims the Washington State Department of Ecology failed to take action on the permit by a 2015 deadline.

The Clean Air Act allows citizens to file a lawsuit if they may be affected.

Green says that as a Richland resident, his health could be harmed by radionuclide pollutants released into the air at nearby Hanford.

The Washington state Department of Health is not named in the lawsuit, but does air sampling at Hanford to verify the accuracy of the Department of Energy

sampling.

“Based on inspections of the Hanford Site and review of the Hanford annual radiation air emissions report, the Hanford Site emissions are well below the national ambient air standards,” said the Department of Health in a statement. Emissions are also within state standards.

Green previously petitioned the EPA in 2013 and 2014, asking it to object to the air operating permit issued by the Department of Ecology.

On May 29, 2015, the EPA responded, denying most of Green’s claims but agreeing

that the Department of Ecology did not adequately respond to certain public comments.

The state failed to take action to resolve the issue within 90 days of the EPA decision, which triggers an obligation for the EPA administrator to issue or deny the operating permit, Green said in court documents.

The state reissued the permit with revisions and responses to comments in July 2016, but that does not change the EPA’s obligations since the action was late, according to the lawsuit.

18 OCT 15

HANFORD TANK VAPORS WEBSITE EXPANDED, REVAMPED

The Hanford tank farm contractor launched a redesigned and expanded website to provide information to its workers and the public on chemical vapors associated with waste held in the nuclear reservation's underground tanks.

Workers are concerned that breathing the chemicals can lead to serious respiratory and neurological illnesses or cancer.

A cross-section of workers at Hanford, who are leaders in their fields of expertise, developed new content for hanfordvapors.com, according to Washington River Protection Solutions. The team that rebuilt the site included union, professional and management representatives.

Information on the site ranges from basic information about Hanford to graphs of sampling results for multiple chemicals at individual tanks. It covers monitoring, sampling and other equipment being used or tested.

"We are putting a priority on information, transparency and trust," said Mark Lindholm, president of Washington River Protection Solutions. "This website allows interested parties to have an informed dialogue.

— TRI-CITY HERALD

BECHTEL NATIONAL DONATES \$10,000 FOR MID-COLUMBIA STEM EDUCATION

Bechtel National has donated \$10,000 to the Washington State STEM Foundation and the Mid-Columbia STEM Network to help expand learning experiences to help prepare students for eventual careers in science, technology, engineering and math.

Bechtel is the Department of Energy contractor building the Hanford vitrification plant.

"A STEM-literate population and next generation, in particular, is critical to our community and country," Jean Dunkirk, Bechtel senior counsel and foundation board member, said in a statement.

The money will be used this school year to support several programs, including the STEM Innovation Grant Program that helps educa-

INSPECTION OKS HANFORD EXCESS WEAPONS PROGRAM

6 OCT 1
An inspection of Hanford's program to dispose of excess weapons, explosives and protective gear found the site took appropriate action.

The Department of Energy Office of Inspector General conducted the inspection, in part, because Hanford security requirements were eased after weapons-grade plutonium was transferred to DOE's Savannah River, S.C., site in 2009.

"Hanford accounted for, advertised, and transferred or destroyed its excess firearms, as required," said a report released Wednesday.

Hanford documents showed that some guns were transferred to an unidentified federal agency. Others were destroyed and either sold to a metal recycler or given to a company in exchange for free destruction service.

BUDGET WOES GROW

5 OCT 16

Reach museum may not replace CEO

LISA TOOMEY

BY WENDY CULVERWELL
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In the latest sign of mounting financial woes, the Reach museum and interpretive center may operate without an executive after CEO Lisa Toomey departs at the end of 2016.

As revenue fails to keep

up with projections, the Reach's governing board has drafted a no-frills budget for 2017 that pays for the equivalent of 6.25 full-time positions, but no executive director.

The Richland Public Facilities Board, which administers the Reach, described its difficult financial situation during a special joint session Monday with the Richland

City Council.

Stan Jones, vice president of the public facilities board, acknowledged that failing to replace the departing CEO would be "truly a big mistake."

The Reach has cut seven positions this year, five in April and two in June. It also trimmed its hours and is closed on Sundays, except for special events and

groups.

The proposed 2017 budget of \$674,000 is 35 percent below the \$1 million it will spend in the current year.

The proposal is based on \$574,000 in anticipated revenue and \$130,000 that must be raised from donations, grants and sponsorships.

SEE REACH, 5A

18 OCT 16
**New president at
Hanford contractor**

BY ANNETTE CARY
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The president of Hanford contractor CH2M Hill Plateau Remediation Co. announced on Monday that he will be leaving and his replacement has been named.

John Ciucci is taking a job at the CH2M Hill corporate office in Colorado as part of a recent corporate reorganization, he told employees Monday morning.

Ty Blackford is returning to Hanford from the Department of Energy's Savannah River Site in South Carolina to take over as president and chief executive officer.

The date in the change of leadership is yet to be determined.

"Ty is a familiar face at Hanford with more than 20 years of experience at Hanford," Ciucci said in a message to employees. Ciucci has led CH2M Hill Plateau Remediation Co. since 2014.

The Department of Energy contractor is responsible for all central Hanford envi-



Blackford Ciucci

ronmental cleanup, with the exception of underground waste tanks, and is responsible for cleaning up groundwater across the site. It also has taken over remaining cleanup along the Columbia River with the expiration of the Washington Closure Hanford contract for the work.

Blackford took his first job at Hanford in 1992, working on multiple projects on the nuclear reservation until early 2015, when he was vice president of decommissioning, waste, fuels and remediation services for CH2M Hill at Hanford. He left Hanford for Savannah River, becoming executive director of tank closure and regulatory strategies at Savannah River Remediation.

Previously, he was the

director of waste services at the Hanford tank farms until he was named a top manager for CH2M Hill Plateau Remediation Co. when it was awarded the central Hanford cleanup contract in 2008. He was named one of the top managers then, project manager for waste and fuels.

Through the years at Hanford, he has led the transuranic waste program, the mixed waste treatment program, the K Basins found fuel project and the 324 Building B Cell clean out project.

In total, he has 31 years of experience on projects for DOE, the Department of Defense and others.

He is expected to lead CH2M Hill Plateau Remediation Co. through the final two years of its contract.

The contractor has the opportunity to complete the demolition of the Plutonium Finishing Plant, move radioactive sludge held in the K West Basin away from the Columbia River and finish cleanup of the 618-10 Burial

Ground before its contract expires, Ciucci said.

DOE has just completed moving three projects and 322 workers to CH2M Hill with the Sept. 30 conclusion of the river corridor cleanup contract.

Projects include the 324 Building, which sits above a highly radioactive spill just north of Richland; the remaining cleanup of the high hazard 618-10 Burial Ground and management of Hanford's huge, lined landfill, the Environmental Restoration and Disposal Facility.

Tammy Hobbes joins CH2M Hill at Hanford as a vice president in charge of the landfill and 618-10 Burial Ground. She most recently worked at the Canadian Nuclear Laboratories.

Chief Operating Officer Bill Kirby will lead work for at 324 Building, in addition to his current duties.

CH2M Hill announced Monday that Karen Wiemelt, vice president of the soil and groundwater remediation project at Hanford, would be moving to the corporate office.

John Rendall is the new vice president for that work. He comes to Hanford from DOE's West Valley, N.Y., project.

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Demolition work may start soon

7 OCT 16

■ The Department of Energy faces a revised legal deadline to have the hazardous plant torn down to slab on grade by Sept. 30, 2017.

BY ANNETTE CARY
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Hanford workers may be just weeks away from the start of demolition of the nuclear reservation's most hazardous building, the Plutonium Finishing Plant.

The Department of Energy faces a revised legal deadline to have the plant torn down to slab on grade by Sept. 30, 2017.

Under a recent change of plans, work to start demolition was put off for about two months to carry

out a project that Hanford officials say will make demolition safer for workers and should shorten the time needed for demolition.

Now DOE and its contractor, CH2M Hill Plateau Remediation Co., expect demolition of the plant's Plutonium Reclamation Facility to start late this month or in early November.

Four of the glove boxes in the reclamation facility are part of the building's structure, creating part of the wall of the high center area of the facility, called a canyon. Those will be removed during demolition.

But a decision was made recently to remove eight other glove boxes that are not part of the building's structure before demolition begins.

VIDEO

See a time lapse of demolition prep at the Hanford Plutonium Reclamation Facility at tricityherald.com/video

"It removes additional hazards from the building prior to demolition, which is good," said Tom Bratvold, CH2M vice president at the plant.

Part of the concern was how high the glove boxes were within the facility. To get to them, the roof of the facility has to be removed.

The roof over the highest section — what workers call the "penthouse," a small fifth- and sixth-floor structure rising above the rest of the building — was lifted off by a crane in late September. Since then, the first two glove boxes and part of the ventilation system have been lifted out

“

IT IS THE LAST MAJOR ACTIVITY BEFORE WE ARE READY FOR DEMOLITION.

Tom Bratvold, CH2M vice president for the Plutonium Finishing Plant

by crane.

This weekend, if the wind is not blowing, part of the remainder of the roof covering the four-story-high section of the building will be removed.

The fourth, fifth and sixth floors have glove boxes, called column glove boxes, that are up to about 5 feet tall. The five others, miscellaneous treatment glove boxes, are on the fourth floor and are up to 22 feet long. They will be lifted out in one piece each.

At glove boxes, workers would reach their hands through attached gloves to work with radioactive material within the boxes.

Removing the eight glove boxes is "the last major activity before

19 0 27 76

At least 7 Hanford workers affected

■ Workers in the AX Tank Farm at Hanford received low levels of radioactive contamination on their skin, according to preliminary information.

BY ANNETTE CARY
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At least seven workers at a Hanford tank farm had skin contaminated with radioactive waste Tuesday morning.

The workers were in a pit at the AX Tank Farm when contamination was detected in the pit.

They backed out of the area, but a survey after they removed their anti-contamination clothing found radioactive contamination on the skin of at least seven workers, according to initial reports. Preliminary results indicated that the level of contamination was low.

Workers were taken to decontamination stations. Three stations were available Tuesday, including two in the 200 East Area where the AX Tank Farm is located.

Radiological surveys showed the workers were clean of contamination before they left the stations, according to a message sent Tuesday afternoon to workers at

SEE RADIOACTIVE, 7A

21 Oct 16

OVERALL HANFORD CONTRACTING PLAN EXPECTED IN JANUARY

A master plan for major new Hanford contracts should be ready in January, according to a Hanford official.

Marc McCusker of the DOE Office of River Protection spoke this week at the Bridging Partnerships Small Business Symposium in Pasco. About 300 people registered for the conference, intended to help small businesses win work on Department of Energy contracts.

Contracts for central Hanford cleanup and management of the Hanford tank farms expire in 2018. The contract for sitewide support services expires a year later.

The two DOE Hanford offices — the Office of River Protection and Richland Operations Office — consolidated acquisition teams this spring and are working on an contract strategy, McCusker said. A master acquisition plan is expected to be completed in January 2017. Draft bid requests then should be released later in the year.

Hanford and Pacific Northwest National Laboratory together bring \$3.4 billion annually of federal funding into the Tri-Cities area, said Gary Petersen, Tri-City Development Council vice president of Hanford projects.

A little more than half of that goes to small businesses, including about \$500 million spent on local small-business contracts and subcontracts, he said.

Hanford leaders who spoke recommended that small businesses look for innovative ways to provide solutions to get their foot in the door at Hanford.

— TRI-CITY HERALD

24 OCT 16

Decades-long cleanup project ends in success

BY ANNETTE CARY
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A 25-year project to suck up a cancer-causing chemical from the soil in central Hanford has ended in success.

"It's one of the longest running cleanup projects on the Hanford Site," said Karen Wiemelt, vice

president of soil and groundwater cleanup for Hanford contractor CH2M Hill Plateau Remediation Co.

Nearly 90 tons of carbon tetrachloride were removed from soil as deep as 200 feet below the ground in central Hanford.

The chemical was used in the process to recover plutonium from liquid waste at the Plutonium

Finishing Plant from 1955-73, according to DOE. Carbon tetrachloride is more commonly known for its past use as a dry cleaning solvent.

Over the years at Hanford, hundreds of thousands of gallons of the solvent were discharged into the soil near the Plutonium Finishing Plant.

They left three-quarters of a

square mile of soil contaminated, with some of it reaching the groundwater more than 200 feet below the ground's surface. There, it spread to contaminate about 5 square miles of groundwater.

The 200 West Pump and Treat Facility that opened in 2012 is removing carbon tetrachloride, among other chemicals from contaminated groundwater, and then

reinjecting clean water back into the ground.

Removing the carbon tetrachloride from the soil prevented more of it from reaching the groundwater, which helps protect the Columbia River, Wiemelt said. Groundwater in central Hanford moves toward the river.

Hanford officials turned to technology already used in the petroleum industry, soil vapor extraction, to clean the soil. Similar systems have been used to remove gasoline from the soil surrounding leaking underground storage tanks at gas stations.

But as the technology was investigated for Hanford use in the early 1990s, it had never been used on such a large project, Hanford officials said at the time.

SEE HANFORD, 4A

1 NOV 16

AFTER 20 YEARS OF PREP, WIND DELAYS HANFORD DEMOLITION

Windy weather on Monday delayed the start of demolition of Hanford's Plutonium Finishing Plant.

Workers have spent about 20 years cleaning out the highly contaminated plant to prepare for demolition of its main facility.

Weather permitting, the demolition should begin this week on what's called Hanford's most hazardous facility. The plant helped prepare nearly two-thirds of the plutonium for the nation's nuclear weapons program.

The first section of the main plant to come down will be its Plutonium Reclamation Facility, an addition added as Cold War demand for plutonium increased. It recovered plutonium from scrap material that otherwise would have been wasted.

Some of the plant's ancillary buildings have come down over the years.

DOE officials extend deadline at Hanford

BY ANNETTE CARY
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The Department of Energy was given three more years to build four large barriers over the ground at the Hanford tank farms to help contain spilled or leaked radioactive and hazardous chemical waste.

DOE was required under the legally binding Tri-Party Agreement to have four more of the barriers, or caps, built a year from now.

But after more than a year of talks, the Washington State Department of Ecology agreed to extend the deadline. The new deadline requires the barriers to be built by Oct. 31, 2020, and

includes some interim deadlines to keep DOE on track to meet the requirement.

Documents indicate that the unpredictable federal budgets and money spent to help protect Hanford workers, from chemical vapors associated with waste in underground storage tanks, contributed to the delay in planning and building the barriers.

DOE previously built two of the barriers and is required to build four more. Two were supposed to be completed in 2015, another this year and the next one in 2017.

DOE completed plans for the two barriers required to be constructed in 2015, but has not started

building them.

The barriers — which can be built of a durable plastic product or modified asphalt — are the size of football fields or larger and act as an umbrella over contamination already in the ground.

They keep rain or snow melt from soaking into the waste plume and spreading it deeper into the ground. They are a temporary measure until a long-term solution is found for the underground contamination.

The Department of Ecology issued a \$5,000 fine against the federal DOE, accusing it of not letting the state know soon enough that it could not meet the Tri-Party Agreement schedule.

DOE disputed that and

ultimately the agencies agreed in late September to settle the matter with DOE paying a \$2,500 fine, but not admitting fault. The agreement was reached to avoid the expense of litigation, according to a document signed by both agencies.

According to documents, DOE ran into troubles when its spending levels were capped in fiscal 2015 after Congress failed to pass a DOE budget. The budget remained flat at the fiscal 2014 level.

DOE expected that more efficient operations would allow it to catch up before spring 2015, as it faced deadlines later in the year to have two of the four barriers constructed and a third designed.

Instead of catching up, expenses in the tank farms increased. Money was needed to study and improve chemical vapor protection for workers and to empty Tank AY-102, a double-shell

After 20 years, Hanford plutonium plant starts to fall

BY ANNETTE CARY
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Shears on the end of an excavator arm tore into Hanford's Plutonium Finishing Plant on Tuesday afternoon.

The demolition, starting on small metal airlocks attached to the side of the plant, followed 20 years of work to clean out the highly contaminated plant. Nearly two-thirds of the plutonium for the nation's nuclear weapons program during the Cold War was processed inside.

"This plant is one of the most hazardous buildings at Hanford, and its demolition will be a major watershed in the Hanford cleanup," said Alex Smith, nuclear waste program manager for the state Department of Ecology, the regulator on the project.

Department of Energy officials have called the plant the largest and most complex plutonium facility in the nationwide DOE complex.

Work to prepare the plant for demolition has proceeded at a deliberate pace, starting with stabilization of plutonium left in the plant in a liquid solution at the end of the Cold War. More recent work has included cleaning out and dismantling highly contaminated



Courtesy DOE

A shear started tearing apart the Plutonium Finishing Plant Tuesday. The building, which includes more than 220,000 square feet and sections up to six stories high, was used to help produce almost two-thirds of the nation's weapons plutonium during the Cold War.

equipment.

It led to the start of open-air demolition of the plant Tuesday. An excavator — equipped with shears, a clamshell or a hammer — is expected to perform most of the remaining work, at the same deliberate pace as the plant's clean out.

"We've tried to think of everything we can ahead of time for both engineering and administrative controls to safely bring the facilities down," said Tom Teynor, DOE project director. "We are going to have constant vigilance as we move through this with sampling and monitoring of the situation."

Demolition is starting with the Plutonium Reclamation Facility, a 22,000-square-foot annex added to the main plant to recover plutonium from the plant's waste material as demand for it increased during the Cold War.

By December, DOE contractor CH2M Hill Plateau Remediation Co. is expected to be taking down the small building that contains the Americium Recovery Facility between the Plutonium Reclamation Facility and the Plutonium Finishing Plant's main section.

The Americium Recovery Facility, the size of a double-car garage, contains the

McCluskey Room, where worker Harold McCluskey was injured in an explosion in 1976.

A pause in demolition is planned after that to review what has been learned so far and complete any final cleaning of the main area of the plant, which covers 200,000 square feet and stands three stories tall. Work is continuing there on final tasks, such as removing asbestos and ventilation ducting.

Demolition should be completed about July 2017, ending with an explosion to bring down the plant's ventilation stack. The planned schedule gives DOE a couple of months to make sure all work is done to have the plant down to slab on grade by a legally binding Tri-Party Agreement deadline of September 2017.

At the plant's Plutonium Reclamation Facility, work will start at the top of the annex, where one section stands six feet tall, once the airlocks and an outside stairway is down. The interior canyon, where tall skinny tanks holding plutonium hung along the walls, will be the last section to come down.

It will be demolished "in small bites" of about four-foot sections over six weeks, Teynor said.

INCREASED HANFORD VAPOR PROTECTIONS

16 NOV 16

Judge denies state's request

BY ANNETTE CARY

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A federal judge has denied the state of Washington's request for increased protections for Hanford workers while a lawsuit against the Department of Energy and its tank farm contractor is heard.

Hanford workers already are protected by a requirement that supplied air respirators be used within the tank farms — areas where waste is stored in underground tanks at the nuclear reservation, said U.S. Judge Thomas Rice in a ruling issued Tuesday afternoon.

However, his ruling should not be taken to mean that exposure to vapors is not a serious issue for workers, he said.

The state of Washington, Hanford Challenge and union Local 598 had asked the judge for a preliminary injunction that would have required DOE and its contractor, Washington River Protection Solutions, to better protect workers.

Mark Lindholm, president of Washington River Protection Solutions, told employees in a message that the judge's decision recog-

■ Regulators have agreed to let the Department of Energy skip a 2017 cleanup cost and schedule report.

3 NOV 16
BY ANNETTE CARY
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Hanford regulators are giving the Department of Energy a pass this coming year on figuring out the remaining cost and schedule for Hanford cleanup through 2090.

The last lifecycle report released by DOE put the estimated cost for remaining environmental cleanup of the Hanford nuclear reservation at \$107.7 billion. The estimate covers cleanup that would be largely completed by 2060, plus some post-

cleanup oversight.

DOE is required by the legally binding Tri-Party Agreement to prepare a Lifecycle Scope, Schedule and Cost Report annually. The requirement is among concessions DOE made to get tank farm and vitrification plant schedules extended under the 2010 consent decree filed in federal court.

There have been so many recent changes to Hanford work plans, along with deadline changes and extensions, that DOE and its regulators, the Environmental Protection Agency and the Washington State

Department of Ecology, have agreed that the next report should be skipped.

The Tri-Party Agreement has been amended to reflect the change.

The 2017 report was due Jan. 31, 2017.

Modifications ordered in federal court this year to the 2010 consent decree have extended deadlines for emptying certain Hanford waste tanks and for building and starting operations of the vitrification plant being built to treat the tanks.

Plans and deadlines for cleanup for other central Hanford projects, including demolition of large processing plants, also were changed this year, along

with the schedule for retrieving and packaging temporarily buried waste that may be contaminated with plutonium.

“These re-alignments will result in significant re-planning of associated work scope, schedules and costs that will not be completed in time to be fully reflected in the 2017 Lifecycle Report,” the Tri-Party Agencies said in an announcement Wednesday.

Instead, DOE should focus its efforts on the 2018 report, they said.

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25 Oct 16

HANFORD COLD WAR WORKERS TO BE RECOGNIZED OCT. 26

The National Day of Remembrance for Hanford's Cold War workers and their families will be observed on Oct. 26 in Richland.

Pacific Northwest National Laboratory Cold War workers are welcome.

Cold War Patriots, a business-related nonprofit group, plans a reception from 1 to 3 p.m. at the Richland Community Center, 500 Amon Park Drive.

9 NOV 16

OPEN HOUSE TO MARK HANFORD NATIONAL PARK ANNIVERSARY

An open house is planned Thursday in Richland to celebrate the one-year anniversary of the Manhattan Project National Historical Park.

The public will have the chance to meet the newly named park superintendent, Kris Kirby.

A year ago, Hanford's B Reactor and other historic areas of the nuclear reservation officially became part of a new national park, along with additional Manhattan Project sites in Tennessee and New Mexico.

The open house is from 4 to 6 p.m. Thursday at the National Park Interim Visitor Center, 2000 Logston Blvd., Richland.

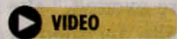
15 NOV 16

Hanford takes \$23 million step toward safer radioactive waste storage

BY ANNETTE CARY
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Work is moving ahead to remove radioactive capsules at Hanford from storage in a water-filled pool that could be at risk in a severe earthquake.

CH2M Hill Plateau Remediation Co. has awarded a \$23 million contract to have casks designed and built to hold the 1,936 cap-



Watch a video that explains the safe management of cesium and strontium capsules at www.tricityherald.com/video.

sules of cesium and strontium on an outdoor pad in central Hanford.

The capsules contain about 94 million curies of radioactivity, or about a third of the radioactivity at the Hanford nuclear reservation.

The dry-storage system would be much like those used by nuclear power plants, including the outdoor storage pad and casks used at Energy Northwest's Columbia Generating Station near Richland, according to CH2M, the Department of Energy contractor in charge of managing the Hanford capsules.

Hanford's 1,335 cesium capsules and 601 strontium capsules are stored under 13 feet of water at the

MOST OF THE WESF HOT CELLS MEASURE ABOUT 8 FEET LONG AND 8 FEET HIGH AND UP TO 13.5 FEET TALL.

Waste Encapsulation and Storage Facility, or WESF, adjoining the B Plant processing facility in central Hanford. The water protects workers from radioactivity and helps keep the capsules cool.

The cesium and strontium were removed from the waste in Hanford's underground storage tanks

in the '70s to reduce the temperature of the waste in the tanks, which hold 56 million gallons of waste from the past production of weapons plutonium at Hanford.

The radioactive material was packaged in stainless steel, double-wall capsules that are about 22 inches long.

A previous plan to move the capsules to dry storage by 2006 was put aside to use the Hanford budget for cleanup projects that Hanford officials thought were more pressing a decade ago.

But the focus on moving the

SEE STORAGE, 4A

4 NOV 16

Judge refuses to dismiss state's vapors lawsuit

■ The Department of Energy, joined by its tank farm contractor, said the state lacked standing in the lawsuit but did not challenge the right of Hanford Challenge and local Union 598 to sue.

BY ANNETTE CARY
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A federal judge has refused to dismiss the state of Washington's lawsuit seeking better protection for Hanford workers from chemical vapors at the nuclear reservation.

Judge Thomas Rice filed the order on Thursday in Spokane, denying the motion brought by the Department of Energy and its contractor, Washington River Protection Solutions. The ruling allows the state's lawsuit to continue.

"This motion was just another

example of the federal government's culture of indifference to worker safety at Hanford," said state Attorney General Bob Ferguson. "Rather than continuing to evade responsibility with procedural motions, the federal government and their contractor should focus on protecting Washington workers."

The plaintiffs filed lawsuits in September 2015 alleging that hazardous tank vapors pose a serious risk to the health of workers at Hanford. Workers fear that inhaling the chemicals can cause serious neurological and respiratory illnesses.

Hanford's underground tanks hold 56 million gallons of waste left from the past production of plutonium for the nation's nuclear weapons program.

DOE has argued that the state lacked legal standing to bring the lawsuit and should be dismissed, but did not challenge the standing of Hanford Challenge and local Union 598. The Seattle advocacy group and union filed a similar

SEE VAPORS LAWSUIT, 11A

National park at Hanford turns 1 year old; new super visits

BY ANNETTE CARY
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Some 13,000 people visited the new Manhattan Project National Historical Park at Hanford in its first year, including — this week — the new park superintendent.

Kris Kirby, newly named to the position, is the park's first employee.

She's based in Denver, and is splitting her time between the three sites of the park — Hanford; Oak Ridge, Tenn.; and Los Alamos, N.M. — each of which played a major role in creating the world's first atomic bombs to help end World War II.

The park was officially created a year ago, with the signing of an agreement between the Department of Energy, owner of Hanford facilities; and the Department of Interior, which includes the national park system.

The B Reactor Museum Association, local officials and others have been working with DOE for years to offer tours of historic B Reactor so visitors can learn about its unusual place in world history.

B Reactor produced plutonium for the bomb dropped on Nagasaki, Japan, when plutonium production was little more than a theory. During World War II, America and its allies were racing to produce an atomic weapon before Nazi Germany.

The park includes the reactor — the world's first full-scale reactor — and the few buildings still standing, which help tell the story of residents who were forced to leave their homes, farms



DAN OSTERGAARD Manhattan Project National Historical Park

History was made this fall with the first organized bike ride on the Hanford nuclear reservation.

and buildings in 1943 to make way for a secret wartime project.

Soon Hanford should have its second park employee, Kirby said.

Applications are being reviewed for National Park Service site representative for the Hanford portion of the park, to be based at the National Park Interim Visitor Center on Logston Boulevard in Richland.

The person, who will come from within the park service, will evaluate and offer advice on programs and activities at Hanford.

Visitors are not expected to see major changes at the national park until after a general management plan is prepared, which will provide

guidance for the next 20 years.

Work on the plan could start about a year from now, when funding is available, and could take two to three years to complete.

One question the plan may answer is whether and where Hanford may have a visitors center. The tour headquarters is currently serving as the visitors center.

No permanent site has been chosen, Kirby said.

"There are a lot of operational and financial issues involved with having a visitors center," she said. "Right now we don't have the budget to construct one and I don't know that we ever will get that budget, so

we are assessing a variety of options."

As the park service works with DOE, it may be possible to repurpose an existing building, she said. The park service will be considering what the public wants and how best to provide visitor access.

Until a general management plan is available, Kirby wants to focus on growing the tour program, which showcases both the area before the nuclear reservation took it over and also B Reactor. Tours are offered spring through fall.

There may be opportunities to add to the tours, to make them more accessible

HANFORD

Vit plant facility gets last big piece of equipment

BY ANNETTE CARY
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The last major piece of equipment for the Hanford vitrification plant's Low Activity Waste Facility has arrived at the plant's campus.

Getting the 90-foot-tall, 79,200-square-foot building outfitted is a key step toward starting to turn some of Hanford's tank waste into a stable glass form for disposal as soon as 2022. The waste is left from the past production of plutonium for the nation's nuclear weapons program.

Plans call for separating some low-activity radioactive material from the 56 million gallons of waste now held in underground tanks and treating it for disposal as work continues on parts of the plant that will handle high-level radioactive waste.

Technical issues have delayed construction on part of the High Level Waste Facility and the Pretreatment Facility.

Significant progress was made on the Low Activity

Waste Facility over the last year.

Construction was completed on two 300-ton melters — the largest in the world — which will form the heart of the vitrification process. Waste and glass forming materials will be heated together to 2,100 degrees, and the molten material poured into containers to cool and harden into a stable glass form.

The exhaust from the waste glass melters will be treated to remove contaminants from the offgas to ensure it is safe to release into the air.

Two of the three major components of the offgas system arrived at the vitrification plant in the summer.

Earlier this week, the final component, a 19-ton caustic scrubber, arrived. Insulation was installed on the underside of the scrubber, preparing it to be moved into the building.

A crane lowered it through a roof hatch with workers hand-manuvering it into place within the Low Activity Waste Facility.



Courtesy Bechtel National

A 19-ton caustic scrubber was lowered this week through the 90-foot-high roof of the Hanford vitrification plant's Low Activity Waste Facility. **Watch a video at tricityherald.com/ video**

"Receipt of the caustic scrubber is a major turning point in construction of the LAW Facility," said Kim Irwin, Bechtel National area project manager for the facility, in a statement.

It will allow completion of the interior construction of the building. Construction of the facility is scheduled to be completed in 2018.

Vitrification plant workers still need to connect the

29-foot-tall, 6-foot-diameter caustic scrubber to the rest of the offgas treatment system.

Work will continue into the new year to finish installing insulation and in-

28,500 CUBIC YARDS

of concrete at the Low Activity Waste Facility

6,200 TONS

of structural steel at the Low Activity Waste Facility

843,000 FEET

of electrical cable

103,000 LINEAR FEET

of piping

ternal components, as well as make hundreds of wiring piping and other connections within the offgas treatment system.

The caustic scrubber was manufactured by Premier Technology of Blackfoot, Idaho.

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17 NOV 16

Some Hanford workers think twice about raising vapor issues

BY ANNETTE CARY
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Some Hanford workers said they had concerns about raising issues related to possible chemical vapor exposures during a review by the Department of Energy Office of Inspector General.

A report on the review, which looked at whether fear of retaliation was a problem and assessed the status of actions to address risks posed by chemical vapors, was made public Wednesday.

"Seven of the 52 workers

we interviewed indicated that they had concerns about reporting, communicating, reprisal or fear of retaliation related to potential vapor exposures," the report said.

Chemical vapors associated with Hanford nuclear reservation waste held in underground tanks has been blamed for symptoms such as shortness of breath and nosebleeds and may cause serious neurological and respiratory illnesses.

Reviewers were satisfied by the actions under way at Hanford to address risks posed by vapors and found them to be largely on sched-

ule. But they said improved communication could help alleviate the continuing fear of retaliation by some workers and better inform workers about the status of protection improvements.

"In our view, improving these areas is critical to ensuring that actions taken to resolve the recommendations for improvement are transparent to members of the workforce and other interested parties," the report said.

Most workers felt they were free to express their concerns with management on vapor risk, were not dis-

couraged from reporting suspected vapor exposures and had not experienced retaliation for reporting concerns, the report said.

Of the seven workers who felt differently, one had filed a formal complaint earlier this year over concerns related to retaliation.

Another worker "sort of" perceived a form of reprisal when management discussed the worker's exposure with co-workers, which may have caused others to think twice about reporting vapor issues.

Other workers reported

SEE VAPOR, 3A

Lobbyist: Trump administration may need Hanford education

BY ANNETTE CARY
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A new presidential administration means the Tri-Cities community will again need to convince officials in Washington, D.C., of the need for pricey environmental cleanup of the Hanford nuclear reservation.

Tim Peckinpaugh, a Washington, D.C., lobbyist for the Tri-City Development Council, discussed the possible impact of the 2016 election at a TRIDEC lunch in Richland and with the Herald on Thursday.

He has concerns about the Hanford vitrification plant, which has cost and technical

issues that will have to be explained to the Donald Trump administration, he said.

However, Tri-Cities officials have convinced new administrations before of the need for Hanford cleanup. And the area is fortunate to have strong leadership in Congress, Peckinpaugh said.

The vitrification plant, being built to turn radioactive waste into a stable glass form, is not expected to be fully operating for nearly two more decades because of technical issues.

The cost of the delay, coupled with changes and additional facilities planned to allow some waste to be treated as soon as 2022, has

yet to be announced by the Department of Energy. The last verified cost estimate of \$12.2 billion was released in 2006, when the plan was to start operations in 2019.

The last estimate for remaining cleanup of the entire Hanford nuclear reservation, plus some post-cleanup oversight, was about \$108 billion, which does not factor in increasing costs at the vit plant.

The Department of Energy is likely to be led in the Trump administration by an energy secretary with a background in oil and natural gas, Peckinpaugh said. New officials are unlikely to be familiar with Hanford, which has an annual federal

budget of more than \$2 billion, or other DOE nuclear weapons cleanup sites.

It could seem logical for new Trump administration officials to ask if there is a better solution to the Hanford vitrification plant, Peckinpaugh said.

If Hanford officials have new ideas, new approaches or new technologies that are viable, now is the time to present them, he said.

The Tri-Cities faced senators in the early 1990s who questioned whether Hanford cleanup was necessary, looking at the possibility of just stabilizing the site. In 1994 there was a push to use

25 NOV 16

Hanford contractors to pay \$125M settlement

BY ANNETTE CARY
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Bechtel National and AECOM have agreed to pay \$125 million to resolve allegations that they charged the Department of Energy for materials and work that did not meet the exacting standards required for nuclear facilities. The settlement agreement also resolves allegations that Bechtel

illegally used taxpayer dollars to lobby Congress for money for Bechtel's work at the Hanford nuclear reservation north of Richland. Bechtel is designing and building the Hanford vitrification plant, and AECOM is its primary subcontractor. . Allegations that Bechtel and URS, which was later acquired by AECOM, bought deficient material for more than a decade with

taxpayer money "are deeply concerning given the obvious importance of nuclear safety," said Michael Ormsby, U.S. attorney for the Eastern District of Washington, in a statement. "The use of federal taxpayer dollars to pay lobbyists in an attempt to elicit more taxpayer dollars is unacceptable," he said. Construction on the vitrification plant began in 2002 as part of environmental cleanup at Hanford

after decades of plutonium production for the nation's nuclear weapons program. The vit plant is being built to turn up to 56 million gallons of radioactive waste into a stable glass form for disposal. The case began when whistleblowers Walter Tamosaitis, Donna Busche and Gary Brunson — all key former managers on the vitrification plant project — filed a sealed complaint in federal court in 2013.

THE CASE BEGAN WHEN WHISTLEBLOWERS WALTER TAMOSAITIS, DONNA BUSCHE AND GARY BRUNSON — ALL KEY FORMER MANAGERS ON THE VITRIFICATION PLANT PROJECT — FILED A SEALED COMPLAINT IN FEDERAL COURT IN 2013.

After more than three and a half years of investigation into their claims, the U.S. Department of Justice agreed to join the case at

SEE HANFORD, 8

27 NOV 66

Worker falling into Hanford septic tank leads to fine

BY ANNETTE CARY
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A Hanford contractor will pay a fine after one of its subcontractor's employees fell into a liquid-filled, abandoned septic tank at the nuclear reservation.

Washington River Protection Solutions has agreed to a consent order requiring it to pay the Department of Energy \$45,000 and improve safety and response processes. The DOE Office of Enforcement investigated the incident.

Questions were raised, including about a delay in calling for an emergency response.

Three construction workers with American Electric Inc. were digging by hand to locate an out-of-service septic tank in the AX Tank Farm in central Hanford on Jan. 21, according to the consent order. The tank farm has underground tanks of radioactive waste, with the septic tank part of the support infrastructure for work.

All three were wearing protective clothing and were

carrying tanks with a one-hour supply for their supplied air respirators.

As the workers dug, part of the top of the tank collapsed.

One worker fell into the hole but grabbed onto the soil on top of the tank, according to the consent order. His respiratory gear also caught on the soil, keeping him from falling deeper.

He was submerged in liquid to just above his waist, according to a Defense Nuclear Facilities Safety Board staff report.

He yelled for help and several workers in the area quickly helped pull him out of the tank, according to information from the defense board and the consent order.

The worker who fell was surveyed for radiological contamination, with none found.

Employees at the site called American Electric, which notified emergency services.

American Electric safety personnel arrived at the

SEE FINE, 4A

Hanford observatory resumes search for gravitational waves

BY ANNETTE CARY

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Scientists are again searching for ripples of space and time known as gravitational waves at an observatory near Richland.

During the previous operating run of the Laser Interferometer Gravitational-wave Observatory, or LIGO, scientists made the first two direct observations of gravitational waves — 100 years after Albert Einstein predicted their existence.

At 8 a.m. Wednesday, the LIGO at Hanford transitioned from engineering test runs to full science observations for its latest search.

Its twin observatory in Livingston, La., began searching at the same time. When one of the LIGO ob-

servatories detects movement that could be caused by gravitational waves passing through Earth, a near identical detection at the other laboratory can confirm it.

Gravitational waves are caused by violent events in space, such as the mergers of pairs of neutron stars or black holes, or by supernovae.

Detecting the waves as they ripple through Earth holds promise to open up a new way for scientists to learn about the universe, much of which may be made up of matter unlike what we're familiar with on Earth.

On Sept. 14, 2015, the two LIGOs detected gravitational waves reaching the Earth from the collision of two black holes 1.3 billion light

years away. Three months later, on Christmas Day, gravitational waves were detected for a second time.

The search was conducted from September 2015 to January 2016.

"With our improved sensitivity, and a longer observing period, we will likely observe even more black-hole mergers in the coming run and further enhance our knowledge of black-hole dynamics," said Dave Reitze, executive director of the laboratory that operates the two observatories.

"We are only just now, thanks to LIGO, learning about how often events like these occur," he said.

The detections of gravitational waves in 2015 followed major technical upgrades to make the observatories 10 times more sensi-

tive in a project called Advanced LIGO. The two U.S. LIGOs had operated from 2002-10 without detecting gravitational waves.

Since the end of the initial run under Advanced LIGO, the staff has been evaluating the observatories' performance and making improvements to its lasers, electronics and optics.

"LIGO Hanford scientists and engineers have successfully increased the power into the interferometer and improved the stability of the detector," said Mike Landry, the new head of LIGO at Hanford.

Progress has been made for using higher power in the future, which will improve sensitivity, or range, in runs that will follow the

1 DEC 16
**Review
finds
distrust
onsite**

■ Thousands of air samples taken at Hanford tank farms have shown few, if any, exposures exceeding occupational limits for chemical vapors, according to the National Institute for Occupational Safety and Health.

BY ANNETTE CARY

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Thousands of air samples taken in and near Hanford tank farms have shown few, if any, exposures exceeding occupational limits set to keep workers safe from chemical vapors, according to a report by the National Institute for Occupational Safety and Health.

But workers and union leadership have considerable distrust for the way the Department of Energy and its contractor, Washington River Protection Solutions, are managing chemical vapor issues.

“Distrust is related to worker perceptions regarding lack of transparency, miscommunication between labor and management, and management skepticism that workers are being sickened from vapor exposures,” said the report, issued Monday.

Six more workers were given medical evaluations Wednesday for possible exposure to chemical vapors, bringing the total since spring to more than 60.

Worker distrust has been intensified by high-profile attention to the issue by the state attorney general, congressional representatives, the media, advocacy groups and the DOE inspector general, the report said. The attention has contributed to an “adversarial and contentious relationship.”

The distrust has been compounded by what workers consider an onerous and dysfunctional

Senators ask for quick action to address chemical vapors

BY ANNETTE CARY
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Three key senators are pressing the energy secretary to move quickly and definitively to take action on new recommendations to protect workers from chemical

vapors at the Hanford nuclear reservation.

The National Institute for Occupational Safety and Health, or NIOSH, released a review with multiple recommendations last week following a June request by the Department of Energy.

"We request that DOE develop

an implementation plan which includes a clear schedule and the funding necessary to carry them out successfully," said a letter sent today to Energy Secretary Ernest Moniz by Sens. Patty Murray and Maria Cantwell, both D-Wash., and Ron Wyden, D-Ore.

"Nothing less than a complete

commitment to safety at Hanford is acceptable," the letter said.

Since the report was completed on Nov. 28, a dozen more workers have been given medical exams after smelling suspicious, ammonia-like odors. All were cleared to

SEE HANFORD, 6A

“
NOTHING LESS
THAN A COMPLETE
COMMITMENT TO
SAFETY AT
HANFORD IS
ACCEPTABLE.

From letter sent Monday to Energy Secretary Ernest Moniz by Sens. Patty Murray and Maria Cantwell, both D-Wash., and Ron Wyden, D-Ore.

Agencies propose more time to close waste tanks

BY ANNETTE CARY
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The Hanford Tri-Party Agencies have tentatively agreed to delay legal deadlines for finishing cleanup work on the first group of Hanford's 149 single-shell waste storage tanks.

Hanford workers have emptied 16 of the nuclear reservation's underground single-shell tanks to regulatory standards, moving their mix of radioactive and hazardous chemical waste to newer double-shell tanks for

safer storage until it can be treated for disposal.

But the emptied tanks still must be either removed from the ground or, as the Department of Energy has indicated it prefers, filled with grout and covered with a cap to make sure precipitation does not reach contamination in and around the tank and carry it deeper toward groundwater.

The tanks have complicated systems of piping and some have contaminated soil from spills or waste leaks that will be included in the cleanup plans.

Whether removed or filled with grout and left in place, the tanks will be permanently closed.

"It's really exciting to be talking about closing tanks," said John Price, the Washington State Department of Ecology's Tri-Party Agreement section manager.

Getting to this point has been a long, difficult process since the Tri-Party Agreement was signed in 1989, he said. The agreement sets deadlines for Hanford nuclear reservation cleanup.

It was not until the 2000s that an agreement was

reached to use the 16 tanks of the C tank farm to demonstrate emptying tanks and then completing cleanup by closing the tanks.

DOE faced a deadline in September 2015 to prepare a three-part plan for closing Hanford's underground tanks and submit it to the Department of Ecology, a regulator on the project and one of the Tri-Party Agencies. DOE gave the state one report, an overall plan for closing all single-shell tanks.

But it did not submit reports covering how it would complete cleanup and close the C tank farm or and detailed, pipe-by-pipe plans on how it would close individual tanks within C farm.

At the time DOE had not finished an analysis of the

29 NOV 16

HANFORD VAPOR LAWSUIT MAY BE DELAYED AGAIN

The state of Washington and other plaintiffs in a lawsuit filed over Hanford chemical vapor protection have asked that the trial be delayed five months.

Under the proposal from Attorney General Bob Ferguson, Hanford Challenge and union Local 598 the trial date would be moved from September 2017 to Feb. 19, 2018.

Ferguson has previously accused energy officials of a "pattern of delay" in the case after DOE asked for more time to prepare for a preliminary injunction hearing.

The state and other plaintiffs cannot meet interim deadlines set to keep the case on track for a September trial in federal court because of the large number of documents received, with more expected, according to the plaintiffs. They also said they need more time to "digest the court's recent ruling" for a preliminary injunction.

The plaintiffs asked the court to order protections for Hanford workers who could be exposed to chemical vapors until the case is decided. U.S. Judge Thomas Rice denied the motions, but said the ruling did not mean that workers had not suffered from serious chemical-related illnesses.

The defendants in the case, the Department of Energy and Washington River Protection Solutions, have handed over almost 75,000 documents in the case, and the plaintiffs expect more to come.

Work restarts to empty Hanford tank with inside leak

BY ANNETTE CARY
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Work resumed despite recent frigid temperatures to empty an underground tank at Hanford with radioactive waste leaking between its double shells.

The Department of Energy faces a Washington state deadline of March 4 to have enough waste removed from Tank AY-102 to determine the source of the leak. Then a decision will be made on whether the tank can be repaired or must be closed.

A federal judge ordered work stopped that disturbed waste until he ruled on a request from the state of Washington and other plaintiffs to immediately increase worker protections.

As the lawsuit advances toward an October 2017 trial, U.S. Judge Thomas Rice ruled last month that supplied air respirators adequately protected workers in the interim from chemical vapors associated with waste in underground tanks.

Work to empty tanks disturbs the waste they hold, which can increase the chances of chemical vapors being released.

Work had been halted to empty waste from Hanford's oldest double-shell tank first because new retrieval equipment needed to be installed but had been expected to resume in September before the judge's initial order. No waste is known to have escaped from the outer shell into the ground.

"Our team has spent months preparing for this final phase of AY-102 retrieval," said Mark Lindholm, president of DOE contractor Washington River Protection Solutions, in a message to employees Monday.

Hanford workers emptied most of about 800,000

gallons of waste from the tank in March and April of this year, but then needed to switch to more nimble waste retrieval equipment to get to the remaining 40,000 gallons of radioactive sludge at its bottom.

Because disturbing the waste increases the risk of chemical vapor releases, Hanford officials have planned all work for nights and weekends when no other workers should be in the area of the AY Tank Farm.

Work started the second weekend of this month, but stopped after 20 minutes because of equipment issues. The night of Dec. 13, workers tried again and began to spray liquid waste on the sludge in the tank to move it toward a central pump for retrieval.

Bad weather then disrupted work, with snow and temperatures dipping to minus 4, delaying more work.

Hanford officials were considering restarting Mon-

day night, but work was uncertain because of a forecast of a possible mix of snow, sleet and freezing rain.

In the spring multiple reports were made of possible odors or symptoms related to chemical vapors as waste retrieval began on Tank AY-102.

Before work restarted to empty the tank this month, almost all Hanford workers were offered briefings on plans to resume work, said Doug Greenwell, manager of tank waste retrieval for Washington River Protection Solutions.

During night and evening shifts when work on the tank is scheduled, barricades are set up to prevent any worker from accidentally driving into the area and reader boards announce that only authorized workers are allowed in much of the 200 East Area. More than half of the nuclear reservation's tank farms are in the 200 East Area.

Workers are required to

wear supplied air respirators as protection from vapors both in the AY-102 Tank Farm and near the stacks for Tank AY-102 and the sturdier double-shell tank receiving the waste. The waste is being stored until it can be treated for disposal at the Hanford vitrification plant.

Greenwell calls the precautions "defense in depth."

Tank AY-102 has had a slow leak into the space between its shells for several years before the state and DOE reached a settlement agreement requiring it to be emptied by March 4.

As work started to retrieve waste in the spring, more waste began leaking into the space between the shells. Washington River Protection Solutions had anticipated it and had installed a pump between the shells that was used periodically to pump waste back into the main tank this spring.

Hanford officials fully



COURTESY DOE

After preparations before wintry weather, work has resumed to empty radioactive waste from Hanford's double-shell tank with a leak between its shells.

New deputy ^{7/2/16} manager named for Hanford Richland Operations Office

Tri-City Herald

Tom Fletcher has been named the deputy manager of the Department of Energy's Hanford Richland Operation Office starting in early 2017.

The position was held by Doug Shoop before he was promoted to manager in July.

Fletcher now is the assistant manager for the Hanford vitrification plant start-up, commissioning and integration for DOE.

"Tom is a recognized leader and a familiar face," said Shoop and Kevin Smith, manager of the DOE Office of River Protection, in a joint announcement.

The promotion is consistent with a DOE initiative to develop the next generation of senior leaders for the federal government, they said.

They also announced that Paul Detwiler will be Hanford chief counsel starting in early 2017. Detwiler now is chief counsel for the National Engineering Technology Laboratory.

SCIENCE MAGAZINE NAMES LIGO DISCOVERY AS ITS BREAKTHROUGH OF THE YEAR 23 DEC 16

The detection of gravitational waves at twin observatories, one at Hanford near Richland, has been named the scientific breakthrough of the year by Science magazine, a publication of the American Association for the Advancement of Science.

The detection "confirmed one of Albert Einstein's boldest predictions, that whirling masses can shape the very fabric of space-time, generating tiny ripples," said Science in a video announcement.

RICHLAND TALK ON GLASS AND VITRIFICATION PLANNED

A Hanford scientist will discuss glass chemistry, as it applies to nuclear waste vitrification, at a public "science café" in Richland on Tuesday.

The talk at 7 p.m. at the Richland Public Library is part of a series sponsored by the American Chemical Society to allow scientists and non-scientists to discuss current topics.

Albert Kruger will discuss how improved knowledge of glass chemistry has made it possible to reduce the expected time from more than a century to fewer than 40 years to glassify 56 million gallons of radioactive waste at the Hanford vitrification plant. Kruger, of the Department of Energy, holds more than 30 patents in glass technology.

27 Dec 16

REACH MUSEUM ICE AGE DAYS OFFERED THROUGH DEC. 29

The Reach Museum is hosting Ice Age days from 10 a.m. to noon Dec. 27-29.

- Today is Ice Age Floods Day, where participants will learn the story of the floods that swept through Washington during the last ice age, 18,000 to 13,000 years ago. Also available is the examination of the rocks the floods left behind, and painting the landscapes shaped by water. Prizes will be awarded for the top stories in the museum's Ice Age Story contest.

- Dec. 28 focuses on Ice Age Skills. Those in attendance will have the opportunity to make stone tools with the Tri-Cities Knappers, fire-building without matches, making cords out of plant fibers, and "cave painting" using minerals.

- Dec. 29 emphasizes Ice Age Beasts. Participants can explore the museum, including the Coyote Canyon Mammoth Dig exhibit. Those in attendance can practice recognizing animal bones, putting together puzzles, and sorting through geologic evidence.

Admission is \$8 for adults, \$6 for military, seniors and students, 5 and under are free, and Reach members are free. Go to visitthereach.org.

HANFORD VIT PLANT TECHNICAL ISSUES

28 Dec 16

Officials report progress

BY ANNETTE CARY
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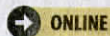
Progress is being made to resolve the technical issues that have stopped some construction at the Hanford vitrification plant since 2012.

The Department of Energy and its contractor, Bechtel National, announced on Tuesday that full-

scale testing has begun to make sure certain tanks within the vit plant can keep high-level radioactive waste well-mixed.

It is a key issue among eight technical problems that must be resolved before construction on parts of the vitrification plant that will handle high-level radioactive waste can be completed.

Three of the other technical issues were expected to be essen-



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tially resolved by the end of 2016, said Kevin Smith, manager of the DOE Hanford Office of River Protection, at a Hanford Advisory Board meeting earlier this month,

He expected to send letters by this week on each of the three

issues to DOE headquarters for official review and then to the Defense Nuclear Facilities Safety Board.

The three letters will cover developing safety strategies for the possible combustion of hydrogen if it builds up in the head space of vit plant tanks, the same issue in piping, and the buildup of

SEE REPORT, 6A

HANFORD TANK FARM

2016

DOE awards contractor \$9.6M in incentive pay

BY ANNETTE CARY
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The Department of Energy awarded its tank farm contractor at Hanford \$9.6 million for fiscal 2016, or 77 percent of the almost \$12.5 million incentive award possible based on a subjective rating system. The overall rating was

“very good,” indicating a score of 76 to 90 out of a possible 100 for all eight categories considered.

The previous year, Washington River Protection Solutions received 88 percent of the incentive award possible under the rating system.

“WRPS performed adequately through a turbulent year, but there were times

when substantial (DOE) guidance and involvement were needed,” said DOE on a scorecard summarizing performance.

WRPS is responsible for 56 million gallons of radioactive and nonradioactive hazardous chemical waste held in underground tanks until it can be treated for disposal at the vitrification plant.

The contractor received two ratings of “excellent” in individual categories, scoring at least 91 out of 100, for its nuclear safety work and for its support to prepare for waste treatment at the vitrification plant, including a new plan for treatment of low-activity radioactive waste as early as 2022.

Nuclear safety is related to the radioactive portion of the tank waste, but not the hazardous chemical waste that resulted in dozens of worker reports of possible chemical vapor exposure in the fiscal year that ended in

SEE HANFORD, 4A

Radioactive contamination spreading within plant

BY ANNETTE CARY
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Radioactive contamination is spreading within one of Hanford's huge processing plants, and the problem could escalate as the plant, unused since the 1960s, continues to deteriorate.

A new report on the Reduction-Oxidation Complex, more commonly called REDOX, recommends that \$181 million be spent on interim cleanup and maintenance of the plant. REDOX is not scheduled to be demolished until about 2032, or possibly later because the nearby 222-S Laboratory in central Hanford will be needed to support the Hanford vitrification plant for another 30 to 40 years.

Doing some work on the building soon could reduce the threat of contamination spreading outside the building, including by animals, a break in a utility pipe or a fire, according to the report. Recommended work also would help protect Hanford workers.

REDOX was used from 1952-67 to process about 24,000 tons of irradiated uranium fuel rods to remove plutonium for the nation's nuclear weapons program and also to recover uranium to reuse in new fuel rods. It is highly contaminated, after processing eight times more fuel per day than earlier processing plants.

The main building is huge, measuring 468 feet long, 161 feet wide and 60 feet tall, with additional underground processing area.

Each annual inspection of some parts of the plant from 2012-15 found an escalation in the spread of radioactive contamination, including by precipitation that has leaked through the roof and joints of the concrete building.

Salt used to neutralize the



Courtesy DOE

The REDOX plant, one of five large processing plants at Hanford, is deteriorating and radioactive waste within it is spreading.

REDOX IS HIGHLY CONTAMINATED, AFTER PROCESSING EIGHT TIMES MORE FUEL PER DAY THAN EARLIER PROCESSING PLANTS.

contaminated processing system after it was shut down in 1967 appears to have corroded through some of the stainless steel process piping, according to an earlier Defense Nuclear Facilities Safety Board staff report.

Plastic bags were taped on one processing line to catch any drips of residual plutonium nitrate in places where leaks were anticipated. Two of the bags hold significant amounts of plutonium nitrate, which will spread if the bags leak, the DOE report said.

Signs of animal intrusion and deteriorating asbestos have been found in inspections of several areas.

The main part of the plant — a long, high “canyon” — has not been entered since

1997. But “based on current conditions in areas where surveillance inspections are performed, water accumulation, animal intrusion, structure deterioration and contamination spread are expected,” the report said.

The report considered three plans to slow down deterioration and take action to confine contamination and reduce its spread, recommending the most extensive of the three alternatives. The plans range in cost from \$148 million to \$181 million.

Actions would include tearing down the plant's radioactively contaminated Nitric Acid and Iodine Recovery Building and the main plant's attached annexes. Two underground, single-shell tanks used to hold up to 24,000 gallons each of hexone also would be removed, if possible. Hexone was used in the process to extract plutonium from fuel rods.

Elsewhere in the plant, steps would be taken to reduce current hazards, which also could help prepare for the eventual demolition of the plant. Waste could be stabilized by isolating it or covering it with a fixative. Piping out of the

plant could be plugged, fluids could be drained from piping and equipment, and some equipment could be removed.

Modifications to the plant's ventilation system would be needed for some of the work.

Doing the proposed work would help retain workers experienced in decommissioning nuclear facilities at Hanford. They will be needed as more federal money becomes available for central Hanford environmental cleanup in the future, the report said.

DOE will consider public comments before a decision is made to proceed with work. Work would be done over the next several years as money is available and as the need for the work at REDOX is balanced against other Hanford cleanup priorities.

Public comment may be sent until Jan. 20 to REDOXEECA2016@rl.gov or to Rich Buel, DOE; Richland Operations Office; P.O. Box 550, A7-75; Richland, WA 99352.

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RICHLAND MAN DROPS HANFORD CLEAN AIR LAWSUIT

8 FEB
17

A Richland man has voluntarily dropped a lawsuit against the Environmental Protection Agency to force it to take action on a Clean Air Act operating permit for the Hanford nuclear reservation.

A hearing on a motion to dismiss the lawsuit brought by Bill Green was set for Thursday in federal court.

The Clean Air Act allows citizens to file a lawsuit if they may be affected.

EPA earlier agreed that the state of Washington did not adequately respond to certain public comments before issuing the operating permit.

NEW HANFORD ADVISORY BOARD CONTRACTOR CHOSEN

Prosidian Consulting of Charlotte, N.C., will replace the longtime Department of Energy contractor providing management and facilitation services to the Hanford Advisory Board.

The \$2 million contract can be renewed for five years.

Enviroissues, with an office in Richland, has held the contract for about 20 years.

“While the department has appreciated the contract performance provided by Enviroissues, Prosidian Consulting’s bid was determined to provide the best value to the government,” according to a memo DOE directed Enviroissues to send to advisory board members.

Prosidian’s contract began this week, but Enviroissues will stay on for a monthlong transition.

PLUTONIUM FINISHING PLANT

Demolition of Hanford's historic McCluskey Room gets under way

BY ANNETTE CARY
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Work has started to tear down the historic McCluskey Room, the site of one of Hanford's worst radiological accidents.

In 1976, a chemical explosion in the room shattered the thick glass windows of a glove box. Radioactive concentrated nitric acid and shards of glass and metal sprayed into the neck and face of worker Harold McCluskey.

He received 500 times the amount of radiation doctors considered safe in a lifetime and his body set off Geiger counters 50 feet away, according to Department of Energy and Herald accounts of the accident.

He came to be known as the Atomic Man.
The McCluskey Building

is the second of four major buildings of the highly contaminated Plutonium Finishing Plant where demolition has started using heavy equipment.

Two decades of preparations had been needed to prepare the central Hanford plant for demolition, starting with stabilizing plutonium left there in a liquid solution at the end of the Cold War.

The plant processed almost two-thirds of the plutonium for the nation's nuclear weapons program during the Cold War. At one end of the Americium Recovery Facility, an annex called the McCluskey Room by workers was built to recover radioactive americium from waste for possible industrial use.

Then another annex was added, the six-story Plutonium Reclamation Facility.



VIDEO

See heavy equipment being used on the Americium Recovery Facility at tricityherald.com/video

That left the small McCluskey Room — about the size of a two-car garage — sandwiched between the 200,000-square-foot main processing area of the plant and the 22,000-square-foot Plutonium Reclamation Facility.

“Starting demolition of the Americium Recovery Facility brings another chapter of Hanford history to an end and represents a significant hazard reduction on the site,” said Tom Teynor, Department of Energy project director.

The Plutonium Reclamation Facility is about one-third demolished. It and the McCluskey Room are expected to be down to slab on

grade by March 2017. Then work will start to tear down the main Plutonium Finishing Processing Facility and finally its ventilation building and stack.

Demolition of the entire complex is scheduled to be completed by September 2017.

“We are making steady progress, and we will continue to do so safely,” said Tom Bratvold, project vice president for DOE contractor CH2M Hill Plateau Remediation Co.

After the accident, McCluskey, then 64, spent much of the next five months in a windowless decontamination center in Richland and then a travel-trailer parked just outside as his health improved and radiation levels decreased.

He survived, but his face

SEE HANFORD, 3A

Bechtel spins off vit plant work to new company

BY ANNETTE CARY
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A new company with familiar faces will be building the Hanford vitrification plant.

The Department of Energy contractor for the Hanford vitrification plant project and its primary subcontractor created a subcontracting company for construction, start-up and commissioning of the more than \$12 billion plant.

Bechtel National, DOE's prime contractor, and its subcontractor AECOM formed Waste Treatment Completion Co.

About 1,370 of the approximately 3,000 workers on the vit plant project will be shifted to Waste Treatment Completion, said Peggy McCullough, Bechtel project director for the vitrification plant, in a message to employees Thursday.

Bechtel remains the prime contractor for the plant with responsibility for delivering a plant to DOE. The plant is being built to turn up to 56 million gallons of radioactive waste left from plutonium production for nuclear weapons into a stable glass form for disposal.

The new company was formed after plans for starting up the plant charged.

When ground was broken for the plant in 2002, plans called for constructing the plant as parts of it were designed. It would not be started up until after all construction was completed.

But after technical issues related to high-level radioactive waste to be treated at the plant were raised in 2012, construction on parts of the plant were temporarily stopped. Court-enforced deadlines require all parts of the plant to be operating together in 2036.

DOE's goal is to start processing low activity radioactive waste at the plant as early as 2022, while construction work resumes and

continues on other parts of the plant that will handle high-level radioactive waste.

Having a single subcontractor, Waste Treatment Completion, for the on-site work of construction and commissioning is intended to safely manage job site activities. All employees, whether from Bechtel or AECOM, will follow the same policies and procedures under the new company.

"Forming WTCC also better supports fulfilling our contract requirement to provide a trained work force and supporting management

SEE HANFORD, 4A

20 JAN 2017

Contractor to pay \$5.3M over timecard fraud allegations

BY ANNETTE CARY
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The Hanford tank farm contractor has agreed to pay nearly \$5.3 million to settle allegations of timecard fraud at the nuclear reservation.

The Department of Justice announced the settlement Thursday, nearly four years after the previous Hanford tank farm contractor agreed to pay \$18.5 million after admitting to timecard fraud.

Contractor Washington River Protection Solutions, or WRPS, which took over the contract for CH2M Hill

Plateau Remediation Co., "continued to bury its head in the sand and allegedly allowed much of the same timecard fraudulent practices to continue," said Michael Ormsby, U.S. attorney for the Eastern District of Washington.

WRPS is accused of submitting claims to the federal government for employee overtime work that had not been provided as claimed, plus other irregularities, from October 2008 to July 2013. Tank farm workers are paid with taxpayer money.

Although WRPS was explicitly advised by federal law enforcement officers of

systemic timecard fraud when it was awarded the tank farm contract in October 2008, it failed to change faulty procedures and curtail the timecard fraud until July 2013, the Department of Justice alleged.

The contractor admitted no guilt in agreeing to a settlement.

"WRPS strongly disagrees with the conclusions of the Department of Justice and has denied any wrongdoing relating to its timekeeping or internal audit practices," the company said in a statement.

It reached the settlement agreement to avoid the cost

and distraction of litigation relating to events that occurred several years ago, WRPS said.

The Department of Justice accused the contractor of committing fraud in three different ways.

It used the same loose overtime accounting procedures that the previous contractor allegedly used, the government alleged. WRPS workers, with management's acceptance, did not fully account for claimed overtime work.

CH2M Hill was accused of offering tank farm workers

15 JAN 17

Lab contractor earns 88 percent of incentive pay

BY ANNETTE CARY
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The new contractor performing work at Hanford's 222-S Laboratory has been awarded 88 percent of the possible incentive pay available for its first year.

Wastren Advantage Inc. will receive \$125,782 out of a possible \$142,771 for its work in fiscal 2016, according to a scorecard released by the Department of Energy. No further information was made public.

Wastren was awarded a \$44.6 million contract in 2015 for a two-year base period and three additional one-year periods.

The contract had been held by Advanced Technologies and Laboratories since 2005, when DOE split the work out of the Hanford tank farm contract to create a small-business opportunity.

The 222-S Laboratory accepts samples of some of Hanford's most radioactive and hazardous chemical waste to determine the content of dangerous substances down to parts per trillion. Work is done under fume hoods or in the lab's 11 radiation hot cells with operators outside the cells operating tools within the cells.

Most of the analyses are of high-level radioactive waste from Hanford's underground waste tanks.

Most of the incentive pay Wastren missed out on was for shortcomings in checks to make sure the lab was performing up to standards. It failed to earn half of the \$28,554 award possible because of a 4 percent rate of unacceptable proficiency testing, according to the scorecard.

Most of the information included on the scorecard was positive.

DOE said that Wastren maintained its schedule and adapted to shifting priorities. It also "skillfully managed a changing and dynamic workforce."

It delivered high-quality data to customers and passed nine external audits and more than 80 internal assessments without serious findings, DOE said. It reduced the quantity of hazardous chemicals in the laboratory through rigorous inventory standards.

DOE also praised Wastren for building on Advanced Technologies and Laboratories' safety record to be named a DOE Voluntary Protection Program Legacy Star contractor when the lab maintained four consecutive years of Star of Excellence Awards.

However, DOE noted that there was "a concerning trend" of three instances in which improper use of personal protective equipment led to unnecessary chemical exposures. None of the

Talks under way to settle lawsuit

26 JAN 17

■ Washington and the Department of Energy, along with others in the lawsuit, plan to pursue mediation.

BY ANNETTE CARY
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Parties in a lawsuit seeking better protection for Hanford workers from chemical vapors have agreed to pursue mediation, according to court documents filed Wednesday.

Plaintiffs and defendants have asked U.S. District Court Judge Thomas Rice to move the trial to March 5, 2018, if mediation fails. The trial currently is set for October at the Richland federal courthouse.

The delay in the trial and other deadlines will give the parties time to agree to a mediator and start discussions, according to court documents.

The agreement comes the same day that another possible release of chemical vapors was reported — the first incident of the new year.

Workers reported an odor consistent with chemical vapors on Wednesday near work trailers outside Hanford's AP Tank Farm.

None of the nine workers in the area reported symptoms — such as coughing or shortness of breath — and all declined medical evaluations. They were told to leave

27 JAN 17

Bill would help ill Hanford workers get compensation

BY ANNETTE CARY
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Hanford workers would receive the same protections as fire-fighters in Washington if they developed serious illnesses, under a bill submitted Thursday for consideration by the state Legislature.

The extra protection is needed because of a lack of real-time monitoring and data for chemical

vapors at the Hanford tank farms, said Nick Bumpaous, vice president of the Central Washington Building Trades.

Workers who become seriously ill after exposure to chemical vapors have trouble providing the proof needed to get a workers' compensation claim accepted, he said.

Penser North America administers the Hanford workers' compensation program, and the Washington State Department of Labor

and Industries allows or denies claims.

"My entire concern is supporting worker safety," said Rep. Larry Haler, R-Wash., lead sponsor of the House bill and a past Hanford worker for 40 years.

He sees the bill as a step toward getting to the bottom of resolving the safety issue.

Three more Hanford workers reported suspicious smells that could be from chemical vapors Thursday afternoon at Hanford.

Nine workers reported suspicious odors the day before outside a Hanford tank farm.

Workers are concerned that exposure to the chemicals could lead to serious health issues, including neurological and respiratory diseases.

The bill would require the workers' compensation program to presume that a wide range of diseases were caused by occupational exposure.

The federal Department of En-

HANFORD

Radioactive spread briefly halts demolition

BY ANNETTE CARY
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Demolition of Hanford's Plutonium Finishing Plant halted Monday after a spread of radioactive contamination outside the plant Friday afternoon.

The cause is being investigated, but demolition is expected to restart this week.

About 4:45 p.m. Friday a radiation monitor alarm sounded near the part of the plant where demolition had been under way earlier but had stopped for the day. A work crew was outside applying fixative to contain any radioactive contamination on a waste pile.

Workers at the plant took

cover as a precaution as the alarm was confirmed as valid about 10 minutes after it sounded.

"Workers acted safely and appropriately when contamination higher than expected was discovered," contractor CH2M Hill Plateau Remediation said in a statement released Monday.

Contamination was found beyond the outdoor zone where it was planned to be contained during the open-air demolition, but still close to the demolition project. It did not spread beyond the boundary surrounding the plant.

Radiological surveys found low levels of contamination on workers' protective clothing, but no contamination on the street

clothing they wore underneath or on their skin. Nasal smears found no evidence of inhaled contamination.

CH2M Hill is continuing to investigate how the contamination spread and then will use information to reduce the risk of recurrence, it said. Extensive air monitoring is done during demolition to protect workers and the environment.

Demolition of the plant began at the beginning of November, with tear down starting on the Plutonium Reclamation Facility built onto one end of the main plant. Demolition continued on the Plutonium Reclamation Facility on Friday.

Demolition already had halted in the first half of January when temperatures dropped down to about 20 degrees, which was too cold for some equipment.

Workers were assigned then to the continuing clean out of the main part of the plant, where preparations still are being made for

demolition. More asbestos than expected has been found in some areas, and DOE said earlier this month that its contractor would hire 20 more workers to help clean it up.

The tear down has started only on the Plutonium Reclamation Facility and the McCluskey Room, which connects the Plutonium Reclamation Facility to the main plant.

DOE expects to have the Plutonium Reclamation Facility torn down in late April and the fan house — with the exception of the explosive demolition of the stack — down in August, it said earlier this month.

The goal is to have the entire plant torn down to slab on grade by September 2017 to meet a legal deadline.

The plant processed almost two-thirds of the plutonium for the nation's nuclear weapons program during the Cold War.

SNOW LIKELY IN TRI-CITIES TODAY

Just when there was hope for hanging up the snow shovels for the season, more snow is forecast today and Wednesday.

Two storm systems are expected to move over the Mid-Columbia this week when temperatures should be cold enough that precipitation could fall as snow.

A 60 percent chance of snow is forecast between 10 a.m. and 4 p.m. today, according to the National Weather Service. Less than an inch is expected by late afternoon, with possibly another half-inch after dark.

The snowfall could affect the evening commute, the weather service said.

A second frontal system will follow, bringing a 50 percent chance of snow between 10 a.m. and 4 p.m. Wednesday, with a possible mix of snow, freezing rain and sleet in the evening. Like today, less than a half-inch of snow is expected during the day, followed by at least that much after 4 p.m.

Check bit.ly/snowdelays for any school delays, closures or bus route changes.

Wednesday's high may be just below freezing.

Freezing rain is possible late Wednesday night into Thursday morning. By Thursday, highs should be back in the 40s in the Tri-Cities, the weather service said.

HANFORD VAPORS TRIAL DELAYED UNTIL MARCH 2018

A federal judge has agreed to postpone until March 2018 a trial on demands for better protection for Hanford workers, a delay of more than four months.

Both sides of the lawsuit have agreed to pursue mediation and jointly asked for the trial to be delayed to see if the matter can be

settled out of court.

The state of Washington is joined by Hanford Challenge and union Local 598, representing pipefitters, in the lawsuit against the Department of Energy and its tank farm contractor, Washington River Protection Solutions. Plaintiffs say chemical vapors associated with waste in underground tanks are harming workers' health.

Parties began preliminary settlement discussions after Dec. 6, when Judge Thomas Rice agreed to move the Richland trial to Oct. 30.

The state had asked for more time then, out of concern about the large volume of Hanford records being released and to consider the judge's denial of plaintiffs' request for an injunction to require additional worker protections until the trial.

Rice ruled that current tank farm protections, including requiring supplied air respirators within tank farms, were adequately protecting workers until the trial. But he also said the court does not deny that workers have been exposed to vapors or that they have experienced serious vapor-related illnesses.

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7 FEB 17

DOE solves 3 issues delaying progress

BY ANNETTE CARY
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The Department of Energy has resolved three key technical issues that have delayed construction on part of the Hanford vitrification plant since 2012, it announced Friday.

DOE still has five more technical issues to resolve at the plant, "but these are certainly the three toughest technical issues," said Bill Hamel, DOE assistant manager for the project.

Some design and engineering work now can resume at the plant's largest building, the Pretreatment Facility.

The plant is being built to turn up to 56 million gallons of radioactive and hazardous waste into a stable glass form for disposal. The waste is left from the past production of plutonium for the nation's

nuclear weapons program.

The plant's most recent estimated cost of \$16.8 billion does not include any changes that could be required by resolving technical issues.

Former Energy Secretary Steven Chu halted work on parts of the plant that would handle high-level radioactive waste in 2012 until technical issues were addressed. Construction has continued on other parts of the plant, which could begin treating low-activity radioactive waste as soon as 2022.

"Since that time, DOE and the (vit plant) contractor have performed a comprehensive set of work activities, which now provides us with sufficient confidence to direct the resumption of design activities affected by these technical issues," DOE said in a recent letter to the Defense Nuclear Facilities Safety Board, which shared Chu's concerns.

The first three issues are resolved, but not closed. DOE has proposed a path forward that will be addressed in design and engineering of the facility before issues are considered closed and construction resumes.

No date has been released for the restart of construction on both the Pretreatment Facility and part of the High Level Waste Facility at the plant, but the five remaining technical issues are expected to be resolved by the end of 2018.

Design and engineering work resumed on the limited areas of the High Level Waste Facility that were affected in 2014.

DOE now is confident it has a plan to make sure that large, heavy particles of plutonium do not settle out in processing tanks within the Pretreatment Plant, causing the potential for an unplanned nuclear reaction.

It will address the issue by ad-

PRETREATMENT FACILITY

120 FEET
height

540,000 FEET
length of piping

17,000 TONS
structural steel used

justing the waste feed from tanks that may have the particles. It could blend waste with the particles with waste from other tanks that do not have the issue.

The blending would limit the amount of plutonium particles in each batch to prevent enough plutonium from accumulating to trigger an unplanned reaction.

The work might be done in a separate facility yet to be built, but no decision has been made.

The other two issues that have been resolved are related to the buildup of hydrogen generated by waste in the Pretreatment Facility, which could potentially lead to an explosion.

It could build up in tanks in the facility or piping. They would be

Snow, cold cost 23 days of demolition work

BY ANNETTE CARY
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Workers demolishing the Hanford Plutonium Finishing Plant have lost the equivalent of 23 10-hour days to bad weather so far this winter.

With a legal deadline to have the plant down to slab on grade in September, Hanford officials are making plans for catching up more than a month of demolition time.

Demolition stopped Jan. 27 when an alarm sounded, indicating a spread of contamination. The work has yet to resume, in large part because of the weather.

On some days, workers across Hanford have been sent home early, told to report late or have not worked at all because of icy roads.

In addition, the temperature has to be at least 20 degrees at the Plutonium Finishing Plant or the water sprayed during demolition to help prevent airborne contamination turns to snow. Snow covering the

ground also slowed cleanup of the contamination spread.

No contamination reached worker skin, was inhaled by workers or spread outside the fence line of the plant, Hanford officials said.

The contamination spread apparently was related to movement of debris into a pile using a front loader after demolition had been completed for the day.

The demolition pile still has to be loaded into containers, and that will be done with small amounts at a time. The source of the contamination in the pile might then be identified.

The task could take a couple of days and may not be started as planned today because of possible freezing rain.

Demolition, which will not restart until the debris is loaded out, may not resume until late next week, according to the Department of Energy.

DOE is planning to recover some of the slipped schedule for demolition by adding a second worker

shift when the days are longer in the spring and summer, Tom Teynor, DOE project director said Tuesday at a meeting of the Hanford Advisory Board's River and Plateau Subcommittee in Richland.

Demolition began at one end of the plant in November. It also may be expanded to two areas of the plant at once, with an area of the plant mostly used for offices torn down along with contaminated areas.

Demolition started with the Plutonium Reclamation Facility and the McCluskey Room, which were added on at one end of the main process area of the Plutonium Finishing Plant.

Demolition of the historic McCluskey Room is expected to be completed first. It could be down to slab on grade in March, Teynor said. It is the site of the 1976 explosion that injured and contaminated worker Harold McCluskey, who

came to be known as the Atomic Man.

The Jan. 27 spread of contamination was an event this year that had been

anticipated as a possibility during demolition, and workers had trained for it, Teynor said. The monitoring system worked as it should have and workers responded appropriately.

While demolition has been halted, work has increased to finish the final steps needed to prepare the rest of the plant for demolition. Workers have been reassigned on some days to work inside the main process area of the plan for work that includes removing the vacuum line used to move material from one glove box to another.

An additional 20 workers have been hired to work on asbestos removal within areas of the plant not yet ready for demolition, after workers found more asbestos and worse conditions than anticipated. The asbestos has sweated and adhered to walls, Teynor said.

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20 FEB 17

Signs promising as deadline near for emptying leaky waste tank

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Less than two weeks before the Department of Energy is required to have waste emptied from a double-shell tank with an interior leak, work to empty the tank appears to have stopped.

Hanford officials declined to discuss the status of Tank AY-102 last week.

But comments made about the tank on Feb. 1 at the Tri-Cities Regional Economic Outlook forum in Kennewick were promising.

"It is now going through the final steps of retrieval," said Tom Teynor of the DOE during an update on Hanford nuclear reservation projects. "It looks like we will be done with that in the very near future — down to what we can get to."

A Hanford Advisory Board committee also was told by Hanford

officials on Jan. 18 that work was on track to meet the deadline for waste removal from the tank.

DOE is required by a settlement agreement with the state of Washington, a regulator of Hanford waste tanks, to have enough waste removed from the tank by March 4 to determine the cause of the leak.

Tank AY-102 has had a slow leak of radioactive waste from its inner shell into the space between its inner and outer shell for several years. None of the waste is be-

lieved to have breached the shell to contaminate the environment.

When work began on the tank almost a year ago, 593,000 gallons of liquid waste that was quickly removed, 151,000 gallons of waste in the form of sludge that is difficult to remove.

On Jan. 30, Hanford workers were told that

17 FEB 17

2 HANFORD WORKERS CHECKED AFTER REPORTING ODOR

Two Hanford workers received medical evaluations after reporting an odor in central Hanford at the start of the day shift Thursday.

They were about a mile and a half from the closest tank farm, where waste is stored in underground tanks. Chemical vapors are associated with the tank waste, and Hanford protocol is for workers to report odors or symptoms, such as coughing and headaches, that may be linked to vapors.

The workers were doing a routine inspection of an area where nonradioactive waste is temporarily staged.

Industrial hygiene technicians were sent to the area after the odor was detected, but made no findings, according to Mission Support Alliance.

One of the workers was an employee of Hanford contractor Mission Support Alliance. The employer of the second worker was not immediately available.

Both workers were released by the Hanford medical provider to return to work.