

Environmental Defense Institute

News on Environmental Health and Safety Issues

September 2013

Volume 24 Number 6

The Real “Catch-22” Concerning Spent Nuclear Fuel

Tami Thatcher’s guest column in the Idaho Falls Post Register (8/1/13) states: “Storing spent nuclear fuel is not as simple as some industry boosters make it sound.

The Idaho National Laboratory already has spent nuclear fuel with no place to go, approximately 300 metric tons heavy metal (MTHM)¹ plus our high level waste. Partnership for Science and Technology and other nuclear boosters would like Idaho to become home to a lot more spent fuel. There is over 68,000 MTHM² from the commercial nuclear industry, some of it “stranded” fuel where the reactors have closed. The Department of Energy is being sued by nuclear utilities for not taking the fuel in 1998 and the legal liabilities are mounting to billions of dollars.³

Like a typical nuclear booster, Partnership for Science and Technology’s Mike Hart, is uncomfortable seeing the accident risks discussed. If the risks are so low, Mike, why does the nuclear industry have to rely on government-backed liability insurance via the Price-Anderson Act?

Is spent nuclear fuel waste? The DOE has determined that the vast majority of the nation’s spent fuel inventory should be disposed of without the need for retrieval. Only a small portion is needed for research and possible feedstock for potential closed cycle operation⁴, should the significant hurdles of cost and safety of fast reactors be overcome in a few decades. Are partitioning and transmutation going to solve the spent fuel problem? Not any time soon nor without significant financial investment, according to the DOE.⁵

¹ Blue Ribbon Commission of America’s Nuclear Future. 2012. (2010 estimates quoted) www.brc.gov

² Department of Energy Strategy for the Management and Disposal of used Nuclear Fuel and High-Level Radioactive Waste, January 2013. p. 3 <http://energy.gov/em/downloads/strategy-management-and-disposal-used-nuclear-fuel-and-high-level-radioactive-waste>

³ GAO Report GAO-13532T: Commercial Spent Nuclear Fuel – Observations on the Key Attributes and Challenges of Storage and Disposal Options, April 11, 2013. <http://www.gao.gov/assets/660/653731.pdf>

⁴ J. C. J. Wagner et al., Categorization of Used Nuclear Fuel Inventory in Support of a Comprehensive National Nuclear Fuel Cycle Strategy, ORNL/TM-2012/308 (FCRD-FCT-2012-00232), Oak Ridge National Laboratory, Oak Ridge, Tenn., December 2012.

⁵ SRS Citizens Advisory Board May 21, 2013 recommendation and DOE’s response regarding partitioning and transmutation to reduce the burden of spent nuclear fuel, July 10, 2013, from David C. Moody, Manager, Department of Energy. http://cab.srs.gov/recommendations_2013.html.

Interim storage just requires “concrete, steel and fences” according to Hart’s recent guest column in the post Register. The DOE has reported that “The current inventory of domestic [spent fuel] is massive, diverse, dispersed and increasing . . . [and] it represents a significant financial liability.”⁶ There are 137 variations of commercial spent fuel, each requiring specific research for storage design that the taxpayers will be paying for.

In 2012, the National Academy of Sciences raised concern about the increasing use of high-burnup fuels currently being discharged because of reduced cladding integrity.⁷ This complicates storage and transport, as does aging. And it is simply not the nuclear industry’s problem because the ownership of the fuel is transferred to the DOE.

Even predominantly Republican Utah would not accept an interim spent fuel storage facility in their state despite one being licensed by the Nuclear Regulatory Commission in Skull Valley. And symbolically, the DOE’s Citizens Advisory Board at the Savannah River Site in South Carolina recently voted against being a potential interim storage site, fearing their site could become the permanent home for the waste.⁸

The real “Catch-22” associated with our current spent fuel situation is that while there is consensus that a geologic repository is needed, it is not known if or when one may be available, hence, interim storage is needed. But, interim storage, particularly in a politically weak state such as Idaho, may reduce the drive for obtaining a geological repository.

Thatcher is a former nuclear safety analyst at the INL and is on the Technical Advisory Board of "Keep Yellowstone Nuclear Free" that is funded in part by a grant from the Department of Energy's Office of Environmental Management.

INL’s Highly Radioactive Liquid Waste Treatment Plant Having Major Startup Problems

The Idaho National Laboratory (INL) Integrated Waste Treatment Unit (IWTU) is designed to convert ~900,000 gallons of previously classified high-level liquid waste generated over decades of nuclear fuel reprocessing to a solid form suitable for final disposal in a geologic repository. It is crucial to remember that this is the most deadly material on the planet. A dixy cup of it on the table in front of you would give you a fatal dose of radiation before you could get up and leave the room.

DOE has been trying for decades to convert this liquid waste into a stable form that can be put

⁶ Wagner et al., see note iv above.

⁷ National Academy of Engineering, Managing Nuclear Waste, Summer 2012, pp 21, 30.
<http://www.nae.edu/File.aspx?id=60739>

⁸ “Advisory panel votes not to store nuclear waste at Savannah River Site”
<http://www.timesfreepress.com/news/2013/jul/24/advisory-panel-votes-not-store-nuclear-waste-savan/> and more discussion at <http://www.nukewatch.org/media2/postData.php?id=2873>.

into a permanent waste repository. This more recent DOE treatment – IWTU - from construction to startup has taken over 7 years.

EDI conducted an assessment of relevant DOE reports related to the IWTU, and offer them below. The documented evidence below will give a reasonable person pause before endorsing DOE's choice of radioactive waste treatment technology and the State of Idaho's ability to oversee the operation.

DOE's Occurrence Reports document serious malfunctions of the IWTU that state:

“On Saturday, June 16, 2012, the Integrated Waste Treatment Unit (IWTU) was performing startup and testing activities when an unexpected pressure transient caused a loss of vacuum in the Carbon Reduction Reformer (CRR) vessel activating the Rapid Shutdown System (RSS). IWTU Operations were in the process of performing the system lineup to transfer Off-Gas Filter (OGF) material to the Product Receiver Filter/Product Receiver Cooler-1 (PRF/PRC-1) when the CRR began losing vacuum needed to maintain established operating parameters and to continue heat-up of the steam reforming process. Control room operators backed out of the product transfer lineup, exited the transfer procedure and continued to operate the plant under the IWTU startup procedure. IWTU Operations personnel, with engineering support, continued to monitor the system and make adjustments throughout the evening attempting to restore CRR heat up and to maintain vacuum. During the adjustments, the pressure in the CRR rose to approximately 14 inches of water column. The RSS trip point is 14.0 inches of water column. Downstream temperature and differential pressure problems became evident in the HEPA filters, 260 and 240 blower systems. A pressure increase in the Off-Gas Cooler (OGC) caused a rupture of the rupture disk on the OGC and an increase in the OGC outlet temperature which tripped Safety Instrumented Function (SIF)-2. The failure of the rupture disk and the tripping of SIF-2 are the initiating events for this ORPS occurrence. Timeline: 11:57 - A Hi CRR pressure alarm was received. Operators responded per procedure by raising the Off-Gas Blower speed. CRR pressure responded as expected and pressure returned to normal. 12:08 CRR pressure began to rise. Operators responded per procedure and pressure became erratic. 12:20 - CRR pressure began to rapidly rise passing through the Hi and Hi-Hi alarm set-points. 12:24 - A Hi-Hi-Hi CRR pressure alarm was received along with the corresponding Distributed Control System (DCS) - RSS activation. 13:05 - The shift supervisor commenced plant shutdown per procedure. During shutdown a dark plume was noted coming from the stack. 13:35 - The OGC rupture disc pressure alarm was received indicating Rupture Disc PSE-SRC-160-003, a design feature SSC, had ruptured. 13:59 - Following rising temperatures at the outlet of the OGC, SIF-2 High-Temperature Protection System (a Safety Significant System) activated.

“Immediate Action(s): All applicable Emergency Action Response procedure steps were verified completed and a plant shutdown/cool-down was initiated. Notifications were made to DOE-ID and CWI Corporate.”⁹

An on-site employee at INTEC during the IWTU startup “incident;” states the “he was not sure whether or not that there had actually been an explosion (of coal dust) but it's pretty darn

⁹ DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0008

certain that ALL of the IWTU's off-gas filters had failed resulting in 'stuff' being blown up the stack. These filters include the sintered ceramic blow back filters at the tops of the cyclones situated downstream of both the fluidized bed reactors (DMR & CRR) and the main bank of HEPA filters situated immediately upstream of the main stack.”¹⁰

“On March 13, 2012, a Hot Work Permit was authorized and a Fire Safety Watch was present for workers to weld and grind brackets in Room 109 South Corridor at IWTU. At 1430 hours MST, the Fire Safety Watch observed smoke coming out of the fume extractor unit, disconnected the unit and took it outside of the facility. After taking the smoking unit outside the Fire Safety Watch removed the spark trap cover and observed a small flame in the pre-filter which self-extinguished.

“The workers were performing hot work (welding and grinding) installing supports on an electrical cable tray. The workers were in compliance with the hot work permit. Due to the restricted work area the intake funnel on the fume extractor hose was located below the hot work area, pointed up and positioned close to the welding location, but not directly under. The cable tray is approximately 10 feet above the ground with the fume extractor, ACE Industrial Products, Model No 73-200 M, located on a cart below. It appears that a hot spark was sucked into the funnel and down the hose into the spark trap portion of the fume extractor. The spark was drawn onto the surface of the pre-filter where it caused the pre-filter media to smolder generating the smoke observed by the fire watch.”¹¹

“Waste Treatment: Startup testing was suspended on June 16, 2012, at the Integrated Waste Treatment Unit (IWTU), which is designed to treat about 900,000 gallons of liquid radioactive waste stored at the Idaho Nuclear Technology and Engineering Center. Testing was suspended and plant heat-up was terminated to allow detailed evaluation of the process temperature, pressure and flow excursion observed on June 16. Facility startup testing has been ongoing for the past month, evaluating system and component operation and response during operating conditions. Radioactive waste has not been introduced into the facility, pending successful completion of startup testing.”¹²

“July 17, 2012: A potential inadequate safety analysis was declared as part of the investigation into the pressure event that occurred during start-up of the Integrated Waste Treatment Facility. It was determined that the potential for “blinding” filter systems in the facility with unburned charcoal had not been adequately analyzed in the current safety documents. The facility was shut down after the June 16 pressure event, and an investigative team was commissioned to determine the root causes of the event and how to correct them.”

“Waste Treatment Progress: Progress continues in the effort to resume start-up activities for the Integrated Waste Treatment Unit, after the “pressure event” halted start-up activities last summer. **The IWTU** is designed to treat the remaining 900,000 gallons of liquid waste stored at the Idaho Nuclear Technology and Engineering Center tank farm. With the completion of the

¹⁰ Darryl Siemer 6/22/12 email to Chuck Broschius

¹¹ DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0004

¹² DOE-ID Operations Summary; For the Period June 5 to June 18, 2012

IWTU main process piping flush, the project can now start reassembling the process gas filter, off gas filter and the carbon reduction reformer. Restart activities are anticipated to resume this summer.¹³

“Dec. 17, 2013: An investigation was initiated into the adequacy of controls for relief valves and a rupture disk at the Integrated Waste Treatment Unit (IWTU). If the valves are not properly controlled, pressure could increase downstream of the rupture disks during process heat-up. This increase could cause a condition where the rupture disks would not rupture at the required pressure to protect the process off-gas system. IWTU operations have been shut down and will not resume until the necessary changes have been made to the facility or procedures.”¹⁴

“June 19, 2012: Operators at the Integrated Waste Treatment Unit were performing start-up testing when an unexpected pressure transient caused a loss of vacuum in the Carbon Reduction Reformer vessel, activating the Rapid Shutdown System. All applicable emergency action procedures were followed, and a plant shutdown was initiated. A team has been formed to evaluate the cause of the incident and recommend corrective actions.”¹⁵

“July 17, 2012: A potential inadequate safety analysis was declared as part of the investigation into the pressure event that occurred during start-up of the Integrated Waste Treatment Facility. It was determined that the potential for “blinding” filter systems in the facility with unburned charcoal had not been adequately analyzed in the current safety documents. The facility was shut down after the June 16 pressure event, and an investigative team was commissioned to determine the root causes of the event and how to correct them.”¹⁶

Defense Nuclear Facility Safety Board report to Congress Idaho National Laboratory

“**Integrated Waste Treatment Unit.** During 2012, the Board’s staff evaluated preparations to commence operations of the Integrated Waste Treatment Unit project at Idaho National Laboratory. This facility is designed to convert approximately 900,000 gallons of radioactive liquid waste stored in tanks at the Idaho Nuclear Technology and Engineering Center to a solid form in preparation for permanent disposal. On June 16, 2012, the process system over-pressurized during pre-operational testing using nonradioactive materials. The system’s off-gas filters were breached, creating an unimpeded path from the process vessels to the environment. The staff reviewed the operating contractor’s corrective action plan and found several weaknesses. Among the staff’s concerns was the potential for improper operation of bypass valves in the pressure relief system to impact the function of safety-significant rupture disks that

¹³ DOE-ID Operations Summary ; For the Period Feb. 12 to Feb. 25, 2013; EM-ID-CWI-IWTU-2012-0009).

¹⁴ DOE-ID Operations Summary; For the Period Dec. 11, 2012-Jan. 2, 2013; EM-ID-CWI-IWTU-2012-0013)

¹⁵ DOE-ID Operations Summary; For the Period June 19 to July 12, 2012; EM-ID—CWI-IWTU-2012-0008

¹⁶ DOE-ID Operations Summary; For the Period July 13 to Aug. 2, 2012; EM-ID—CWI-IWTU-2012-0009

protect other portions of the process system from over-pressurizing. The staff's communication of this concern prompted the contractor to declare a Potential Inadequacy of the Safety Analysis to ensure the issue was formally tracked and resolved. The Board continues to monitor the project's progress as DOE prepares to resume startup activities.”¹⁷

U.S. Nuclear Waste Technical Review Board

“The NWTRB is an independent agency of the U.S. Federal Government. Its sole purpose is to provide independent scientific and technical oversight of the Department of Energy's program for managing and disposing of high-level radioactive waste and spent nuclear fuel.”¹⁸

According to Dr. Darryl Siemer, former INL scientist, “the people on the NWTRB Board are supposed to serve as totally independent advisors/counselors to DOE on its 'technical' issues - kinda like what the folks at the National Academy of Sciences & Defense Nuclear Facility Safety Board are also supposed to be doing for it (us?). Frankly, I think that DOE has made captives of all of its "advisors" because 1) it's both fun & lucrative (about \$165K/yr for part time work) to be one of DOE's pet independent experts, and 2) they don't really have to do all much for it (their support staff does all the scut work). The main problem is that DOE usually dictates what its independent experts are supposed to "think" about & provides them with carefully rehearsed dog & pony shows/selected documents to "bring them up to speed" on each such issue. Most of these experts don't seem to question what they're being told & therefore usually end up not spotting/fixing the real problem(s).”

Additional Occurrence Reports on IWTU Problems

7/30/12; ITWU – Failure to Follow Confined Space Entry Process;¹⁹

5/2/12; ITWU Potential Inadequacy of Safety Analysis (PISA) – Inadequacy of Technical Safety Requirements TSR-level Controls for Fire Detection in Granular Activated Carbon Beds;²⁰

4/25/12; ITWU Hazardous Energy Control Process Violation;²¹

2/27/12; IWTU – Safety Significant Pressure Safety Disk PSE- SRH-141-001A Discovered Ruptured;²²

¹⁷ http://www.dnfsb.gov/sites/default/files/Board%20Activities/Reports/Reports%20to%20Congress/2013/ar_2013228_21831_0.pdf

¹⁸ <http://NWTRB.gov>

¹⁹ DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0011

²⁰ DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0007

²¹ DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0006

²² DOE Occurrence Report; EM-ID-CWI-IWTU-2012-0002

Accident at INL Leads to Worker Complaint

Alex Stuckey reports 8/11/13 in the Idaho Falls Post Register: “Ralph Stanton slowly sliced through the plastic and electrical tape wrapped around a plutonium fuel plate.

From above the hood, he watched his gloved hands work over the plate, found in a box -- called a clamshell -- atypically labeled with warnings about radioactive contents and abnormalities in the fuel plate's conditions.

Just minutes before, he and his co-workers conferred with their immediate supervisor about opening this and another atypical clamshell. Their supervisor gave them the go-ahead to cut through the plastic. An operator also asked what to do in the event of a fire or powder sighting. The operator said he was told that was "not a valid question," but the supervisor does not recall this, according to the January 2012 Department of Energy Accident Investigation report.

Stanton slowly turned the plate over. Black powder, plutonium, spilled out. No respirator protection was worn, the report stated.

At 11:04 a.m. Nov. 8, 2011 -- in the building that once housed the Zero Power Physics Reactor on the Department of Energy's desert site -- Stanton and 15 others were exposed to the plutonium.

The aftermath of the accident -- and the decisions made by Battelle Energy Alliance leading up to it -- led Stanton and a colleague, Brian Simmons, to file a whistle-blower complaint against the contractor in charge of Idaho National Laboratory.

The DOE report concluded the seeds of the accident were planted years before it occurred. They included: On June 23, 2011: A safety official presented a document to management containing recommendations for safe handling of fuel plates stored at the reactor building, the second time since 2009. Both times, the document's "significance was not recognized and no action was taken," according to the report.

On Around 2004-2005 -- about the time BEA was awarded the 10-year contract to manage INL -- information containing the condition of the fuel plates -- some of which were stored for 30 years in the reactor building -- was lost.

But at 11:04 a.m., Stanton was not aware of these issues. He was only aware of the hand- and foot-monitor alarm and the jittery feeling forming a lump in his throat.

At 11:07, the Vault Continuous Air Monitor, which measures near real-time gross radioactivity levels, went off. The workers evacuated the room and were ushered into the reactor control room, the report stated. Later, the DOE would find that the location of the monitor was not optimal for work performed in the hood.

Nearly 20 people sat in the control room in total silence as a worker read off the escalating monitor numbers, Stanton said. Scanning the room, he said he could see the worry on everyone's face.

That's when the severity hit him. Stanton's new life of uncertainty started that day, but he was hopeful for assistance from BEA or the DOE. He said it hasn't come. BEA officials declined to comment.

He hopes his whistle-blower complaint filed in April will change that. He and Simmons allege the contractor created an unsafe work environment and then retaliated against them after they raised health and safety concerns regarding the incident. Simmons did not wish to speak on the record.

In previous Post Register reporting, BEA has said it disagrees with the filed complaint and

"will be strongly defending."

On two occasions in 2011, BEA allegedly refused to allow Stanton and Simmons to use lead shielding to protect themselves when handling plutonium, according to the complaint. The two workers "exercised their rights to stop the jobs," according to the complaint.

In October 2011, Stanton and Simmons allegedly were asked to "falsify 25 Type 1 safety procedures on a job that was done the day before." They refused, the complaint said.

In retaliation for the two workers' actions, the complaint alleges, BEA sent them to a psychologist for evaluation, gave them negative performance evaluations and withheld radiation dosage information.

The Department of Labor has a year to investigate the case and report a resolution. "I know it costs a little money to keep us safe, but let's do it," Stanton said.

Idaho National Laboratory reporter Alex Stuckey can be reached at 542-6755.

Living in Fear

Family faces uncertainty after plutonium exposure

Alex Stuckey reports 8/11/13 in the Idaho Falls Post Register; "Even after 23 years together, Ralph Stanton called his wife, Jodi, at lunch every workday to talk.

On Nov. 8, 2011, that call never came. Nearly two years later, they say that day's uncertainty has become part of their everyday lives.

Tick tock, tick tock, tick tock: Jodi watched the clock, trying to stifle the panic spreading through her body. She hoped her husband was OK.

He wasn't. The accident occurred about an hour before Ralph would have phoned his wife and best friend.

Ralph and his co-workers were removing boxes containing plutonium fuel plates from a vault at the building that once housed the [Idaho National Laboratory] Zero Power Physics Reactor on the Department of Energy's desert site. They came across two boxes, called clamshells, atypically labeled with warnings about radioactive contents and abnormalities in the fuel plates' conditions. After conferring with a supervisor, they were given the go-ahead to proceed.

Standing over a confinement hood wearing only gloves for protection, Ralph cut through the plastic. Black powder spilled out. It was plutonium.

Ralph was one of 16 workers exposed to plutonium that day. At that moment, he didn't realize how bad the exposure was.

Sitting at her computer at CH2M-WG Idaho LLC's Radioactive Waste Management Complex on the site, Jodi nervously answered the buzzing of an unknown caller.

It was 4 p.m. The call she was waiting for had come -- but it wasn't what she hoped for: "Jodi ... I've been involved in an (accident) at work ... I'll let you know when I can talk later."

Jodi crumpled. Her head and heart pounding, tears welling in her eyes, she rushed to the medical building on site.

She couldn't see him. In fact, she wouldn't see him for another eight hours, until he walked through the door of their home at midnight.

"I grabbed him and hugged him," Jodi said. "I was just so grateful he was still ... alive."

Soon, she would learn that decisions made by the lab not only put her husband in danger, but she believes the rest of her family as well.

And nearly two years later, Jodi's green eyes remain bloodshot with worry as she braces herself for the mental and physical effects the exposure will have on her family.

Living with radioactive materials In the months following the exposure, the Stantons tried to return to normal.

They returned to work at the site, hung family photos, ate family dinners -- they even aggressively tackled spring cleaning.

Their cream-colored brick home acted as a haven, a place to escape the stress of what the accident could mean for Ralph's health.

In May 2012, that haven no longer seemed safe after they found out what was buried within the pillows, carpet and furniture: plutonium-239 and americium-241.

"(Boston Chemical Data Corp) can confirm both americium-241 and plutonium-239 were in the home," said Marco Kaltofen, a civil engineer for the company. "We tested certain materials from the home. The testing was confirmed by our lab work and an independent lab."

Kaltofen would not comment on the levels of radioactive materials present because of the pending whistle-blower complaint filed by Ralph and a co-worker, Brian Simmons, against Battelle Energy Alliance, contractor in charge of INL. Simmons declined to comment for this story.

In previous Post Register reporting, BEA has said it disagrees with the filed complaint and "will be strongly defending."

When asked about americium and plutonium found in the home, INL spokeswoman Amy Lientz said: "We have not seen nor have we been provided any laboratory results from samples taken from a home. Until we see the data, we are unable to respond."

Americium, which is used in small doses in smoke detectors, could show up in a normal home, said Harry Crawford, Idaho Department of Environmental Quality INL Oversight Program health physicist. However, it's highly unusual to find plutonium in a home, he said.

"You would not get exposure to plutonium in the normal world," Crawford said. "(A person) would have to be around reactors or nuclear weapons. Plutonium is not used in normal consumer products."

Last fall, Ralph said he went to the lab asking for an alpha detector to survey items before throwing them in the trash, trying to keep the radioactive materials from reaching places beyond their home. Lab officials would not release the detector, Ralph said, but offered to come to his home and run a detector for them. Ralph said he refused because he did not trust the lab. He also already had the presence of these materials in his home verified twice.

He says the microscopic particles present in the home's dust are haunting it like a poltergeist.

The couple would like to sell the home but know they will have to disclose the presence of these materials. Selling the home would be virtually impossible with that disclosure in tow, Jodi said.

Kaltofen suggests having the porous materials, such as carpeting, removed professionally. The family says they can't afford to replace everything in their home.

"I need to have the carpet taken out and floors stripped and resealed and I can't do it," Jodi said, banging her hand on the kitchen table in frustration.

Ralph and Jodi prepared items such as vacuum bags and bedding bound for Massachusetts after realizing the gravity of the situation: Ralph had not showered immediately following the exposure.

Jodi said there's no way she brought the plutonium-239 and americium-241 home with her because she doesn't work with those materials.

The DOE Accident Investigation Report issued in January 2012 stated that personnel were not showered before receiving a lung count. According to Technical Procedure 6743, Section 4.4,

personnel are required to shower before having a special count.

"Requiring personnel to shower before lung counting likely would have allowed a quicker assessment of the magnitude of the dose," the report stated.

One reason they weren't showered? "An insufficient supply of hot water at the lung-counting facility," the report said.

The Accident Investigation Board concluded BEA did not have an effective program for training personnel on certain radiological responses, such as showering before special lung counts, the report said.

The contractor would not comment because of the current litigation.

Ralph said he didn't shower until returning home that night. "Can you imagine the contamination?" Ralph said. "Where else did it go?" The possible answer brings Jodi to tears.

Living in fear

Every stuffy nose, every fever, every cough makes the family think of plutonium. It is likely innocuous, but their thoughts always drift to the worst-case scenario.

Itchy, red bumps began popping up on the legs and arms of the Stantons' daughter earlier this year. She scratched until they bled and scarred. It became so bad, Jodi took her to Urgent Care.

As they sat in the cold examination room, her daughter burst into tears. "Mom, is this contamination poisoning and am I going to die?" Jodi remembers her daughter saying.

It was a jolt of reality for Jodi -- she had no idea her daughter was so scared. Jodi doesn't know whether the bumps are related to the exposure. She doesn't know whether her worsening cough is related, either. But without the proper dose measurement, she won't.

Ralph said experts estimate the cost of a dose measurement at \$7,000 a piece. The family says they can't afford it.

Ralph has held onto a sinus infection for months now. Jodi fears the worst. Following the accident, both he and Simmons experienced vomiting, confusion, diarrhea and high blood pressure, according to the whistle-blower complaint. "I just don't want to die of lung cancer," Ralph said.

So far, the lab hasn't offered any help in terms of medical or home cleaning costs, the couple said, and they're pretty sure that help will never come. BEA would not comment.

Jodi now is looking to Congress for monetary help, but the stress of not knowing -- not knowing how much she and her daughter are affected, how they'll decontaminate the house, what Ralph's medical bills will be like -- is making her sick. "It is just making me crazy," she said. "I don't sleep. I am just so tired and worried."

In October, INL would not release each worker's individual dosage rate but said none of the 16 workers involved in the ZPPR accident received an internal or external radiological dose that exceeded "administrative or regulatory limits" established by the DOE.

In an emailed statement to the Post Register, BEA said it stands by its previous statements.

A 2005 National Academies of Science report, however, found there is no safe level of ionizing radiation exposure and even exposure to background radiation can cause cancer.

Ionizing radiation is high-frequency radiation that has enough energy to remove an electron from an atom or molecule. Ionizing radiation has enough energy to damage the DNA in cells, which in turn may lead to cancer, according to the American Cancer Society website. "Ionizing radiation is a proven human carcinogen," the website stated.

The U.S. Environmental Protection Agency website states that external exposure to plutonium-239 rarely poses a major health threat: "In contrast, internal exposure to plutonium is

an extremely serious health hazard. It generally stays in the body for decades, exposing organs and tissues to radiation, and increasing the risk of cancer. "Plutonium is also a toxic metal and may cause damage to the kidneys."

The couple fears for what the future might bring for their family. Jodi, in particular, fears losing her best friend.

What happened cannot be fixed, but the couple will do their best to find outside funding, hopefully from Congress, to take care of their home.

She wants to see justice, she wants closure to the "nightmare" that has become their lives, and she wants her family to be able to heal.

"It makes me so angry that they have turned my world upside down and they don't take responsibility," she said. "As long as the milestones are met, as long as their bonuses are met, human life (doesn't matter) out there."

Idaho National Laboratory reporter Alex Stuckey can be reached at 542-6755.

Radiation-exposed Workers Demand Release of Nuke Plant Accident Video

Published 8/19/13 by <http://rt.com/usa/radoation-exposed-workers-suit-687/>



Two workers have filed a lawsuit against the Department of Energy for failing to comply with the Freedom of Information Act by refusing to hand over a video of an incident in which 16 men, including the two plaintiffs, were exposed to radiation.

Brian Simmons and Ralph Stanton, two operators from the Idaho National Laboratory (INL) in Boise, are trying to force the agency to release the video through a lawsuit filed in federal court.

In their complaint, the workers described the radiation incident, which occurred on Nov. 8, 2011. Together with workers from two other facilities, Simmons and Stanton were packaging plutonium reactor fuel plates. Two of the fuel storage containers had “*unusual labels*” indicating that there could be some abnormalities with the fuel plates that were inside. But the labels did not warn of any danger, and when workers came across a fuel plate wrapped in plastic and tape, they unwrapped it. A black powder spilled out of the box, and at least 16 of the workers inhaled plutonium-239, which can damage internal organs and cause cancer. Seven of the employees came in direct contact with the powder, suffering external contamination of the skin.

“When the workers attempted to remove the wrapping material, an uncontrolled release of radioactive contaminants occurred, resulting in contamination of 16 workers and the facility, including plaintiffs Brian Simmons and Ralph Stanton,” the lawsuit states. *“The sequence of events leading up to the release of contaminants, the uncontrolled release itself, and the emergency response at the [Zero Power Physics Reactor] facility were all recorded on video.”*

In 2012, the INL announced that none of the workers suffered from any adverse health effects as a result of the incident, but they also refused to release employee-specific internal radiological dosage numbers.

But according to Seattle attorney John Sheridan, who filed a complaint with the US Department of Labor, the two workers suffered *“symptoms of radiation poisoning including nausea, vomiting, confusion, diarrhea, and high blood pressure, which lasted for months.”*

DOE contractor Battelle Energy Alliance, which has controlled INL facilities since 2005, *“continued to deny the significance of the exposure, removed them from their job duties for eight months, and assignment them to sit in a basement office without meaningful work,”* Sheridan wrote.

The DOE also released a [report](#) absolving the federal agency of all responsibility and claiming that the plutonium release was *“preventable.”*

In May, Simmons and Stanton made a FOIA request to access documents about their exposure to radioactive contamination. The DOE provided some documentation, but refused to hand over any videos, citing privacy concerns. Video footage allegedly shows actions leading up to the incident, as well as the plutonium release.

The DOE report repeatedly references the video and used it for its analysis. The report states that there were “noncompliances” and “management deficiencies” that the video depicted, thereby absolving the agency of responsibility and shifting blame on the workers.

Despite the agency's use of the video for its "employee-related" investigation, it also told the plaintiffs that the file was not an agency record.

But Simmons and Stanton consider these to be bogus excuses, and hope that the court will order the FOIA release of the video.

"There are no cognizable privacy interests in the mere images of other unidentified INL workers depicted in the video," the complain states. *"At minimum, any privacy interests are outweighed by the public interest in accessing video representation of the actual release, especially where the Accident Investigation Report repeatedly referenced the video as depicting the safety planning and response flaws that the report criticized as contributing to the cause of the 'preventable' contamination."*

Tribes Protest Mega-loads and Nuclear Waste on Idaho Roads

William L. Spence reports 8/11/13 in the *Lewiston Morning Tribune*; "When members of the Nez Perce Tribe stepped in front of an Omega Morgan mega-load last week, it wasn't the first time Idaho Indians used civil action to protest cross-reservation traffic.

On at least two occasions in the early 1990s, the Shoshone-Bannock Tribes in eastern Idaho blocked truck and rail shipments of radioactive waste through the Fort Hall Reservation.

The confrontation resulted in lawsuits, negotiations and an eventual settlement, but the battle continues to this day along other fronts.

Like the Nez Perce protest of oversized loads on U.S. Highway 12 through the Wild and Scenic River corridor en route to the tar sands in Alberta, Canada, the Sho-Ban blockades were prompted by environmental concerns, as well as concerns about tribal sovereignty.

At the time, the U.S. Department of Energy wanted to store additional types of nuclear waste at Idaho National Laboratory, which covers 890 square miles of aboriginal Shoshone-Bannock territory north of the Fort Hall Reservation and west of Idaho Falls.

The site sits atop the Snake River Plain Aquifer, which provides drinking water to almost a quarter of the state's population. It already housed extensive waste deposits from INL's own research activities, plus tons of contaminated core material from the 1979 Three Mile Island reactor meltdown and highly radioactive waste from the Rocky Flats nuclear weapons facility in Colorado.

The U.S. Department of Energy and the Navy wanted to expand that to include spent fuel rods from the nation's commercial nuclear reactors, as well as from retrofitted submarines, aircraft carriers and other nuclear-powered ships.

"The Sho-Ban had a relationship with DOE and were aware shipments had been going through the reservation," said Jeanette Wolfley, a Sho-Ban tribal member who served as tribal attorney in the 1990s. "But when the spent fuel shipments began, the tribes became concerned about spills and accidents. They wanted DOE, the Navy and private shippers to follow a protocol. They wanted notice about when the shipments would come and they wanted (tribal) police escorts. But DOE wouldn't agree."

Consequently, Sho-Ban Tribal Police intercepted a shipment of nuclear waste on Interstate 15

in the fall of 1991, as it was passing through the reservation.

"This was something that hadn't been done before," said Wolfley, who today teaches at the University of New Mexico School of Law.

The tribes had a hazardous waste ordinance that required notification and escort for any spent fuel shipments across the reservation. That convinced a federal judge to issue a temporary injunction. But it was overturned when the 9th Circuit Court of Appeals ruled the federal Nuclear Waste Policy Act pre-empted the tribal ordinance.

The tribe wasn't the only entity concerned about the nuclear waste shipments. The state also filed suit, arguing the loads violated clean air and water laws.

"The discomfort with waste coming through Idaho started early on," said Beatrice Brailsford, nuclear program director for the Snake River Alliance. "Gov. (Cecil) Andrus blocked a shipment of plutonium waste coming into Idaho from the Rocky Flats facility in 1989," she said. "But by the 1990s, everyone was aware we were being targeted for nuclear waste. There were really frequent shipments, which made the threat visible. This wasn't something made up by a bunch of environmentalists."

Although the state lost its case in court, the dispute prompted newly elected Gov. Phil Batt to negotiate a settlement agreement with the DOE and the Navy in 1995.

The agreement, which remains in place today, prohibits shipments of commercial nuclear waste into Idaho, caps the amount of naval waste that can be sent to INL and requires the federal government to remove all radioactive waste from the site by 2035. The state also received \$30 million to help shift INL toward other kinds of research.

"The settlement has been more effective than I would have thought," Brailsford said. "DOE has really lived up to its part of the bargain."

However, neither the state nor federal agencies consulted with the Sho-Ban. They remained concerned about the lack of notification and believed they should get some of the same economic development benefits. So in October 1995, less than two weeks after Batt signed his agreement, the Sho-Ban police parked a car on the Union Pacific railroad tracks and blocked a shipment of Navy fuel rods.

"The protest was successful," Wolfley said. "It brought DOE and the Navy to the table. They agreed to provide notice and ended up negotiating a separate agreement with the tribes."

In the years since, American Indian tribes have held similar protests across the country, both with regard to nuclear waste shipments and hazardous wastes.

Just in the past few months, Oglala Lakota Indians blocked trucks carrying equipment to the Canadian oil sands region from crossing the Pine Ridge Reservation in South Dakota. Others protested the proposed Keystone XL oil pipeline, and in May, several Southwest tribes staged a 270-mile walk to highlight their opposition to a proposed pipeline that would take water from a regional aquifer to supply Las Vegas.

Robert Coulter, executive director of the Indian Law Resource Center in Montana, said hazardous waste shipments across native lands are a worldwide concern among indigenous people. "I worked with several Indian nations trying to get the United Nations to adopt the Declaration on the Rights of Indigenous Peoples," he said. "A number of them tried to get a provision added that would forbid the transportation of hazardous wastes across native lands. We ultimately didn't succeed because the issue was too complicated, but there were notable levels of concerns and demands that something be done."

The U.N. declaration does include language prohibiting the storage or disposal of radioactive waste on native lands without prior informed consent. Just like the mega-loads, though, nuclear

waste storage pits those with environmental concerns against those who see a safe and profitable business opportunity.

Eastern Idaho business leaders, for example, are concerned about potential lost opportunities at INL, which provides an estimated 24,000 direct and indirect jobs in the region and has a \$3.5 billion economic impact. Should the state refuse to modify Batt's '95 agreement, they fear its mission will be undermined.

Gov. C.L. "Butch" Otter created the Leadership in Nuclear Energy, or LINE, Commission in 2012 to evaluate those concerns and recommend ways to maintain and build on the lab's expertise.

In its final report earlier this year, the commission noted INL is "well-positioned to capture a significant share of DOE funding directed at nuclear energy and nuclear technology."

While firmly discouraging the idea of Idaho becoming a permanent waste disposal site, the commission said the lab could conduct valuable research on long-term nuclear waste storage. To do so, however, "INL may need the ability to receive and store additional amounts of spent fuel (over and above what's allowed by the '95 agreement)."

Otter hasn't acted on the recommendations, but Brailsford suggested the economic development potential of nuclear waste storage is overstated. "A DOE assistant secretary talked about a 'gigantic industrial opportunity' for communities, but interim storage creates almost no jobs," she said. "The 'industrial opportunity' is in reprocessing spent fuel rods. You take irradiated fuels, dissolve them in acid and pull out the plutonium and other valuable parts. What's left over is incredibly nasty stuff."

The LINE Commission argued that storage technology has improved over the years and said it's "in the best interests of Idaho to strengthen and capitalize on its nuclear competencies."

Otter has expressed similar thoughts regarding megaloads. Rather than put roadblocks in their way, he's suggested there's an opportunity to capture even more business by providing fabrication and assembly services here, before the loads head out of state.

Idahoans have opposed nuclear waste shipments time and time again, Brailsford said, but "no" will never really mean "no" as long as jobs can be dangled in front of communities. "I think Idaho will always be on the target list for nuclear waste," she said.

And if that dispute serves as any kind of guide, the battle over using Highway 12 as an industrial transportation corridor may be only beginning."