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More Contamination To Come

A healthy sense of skepticism is necessary when making decisions that will impact Idaho's water and health for generations to come, writes Tami Thatcher in a guest editorial in the Idaho Falls Post Register, November 12, 2014, about INL's proposed Replacement Facility for Remote-Handled Low-Level Waste.

My friend John Tanner made one important point in his recent guest column[1]: There is no credible progress being made toward a permanent spent fuel repository. Nevertheless, he dismisses Utah's rejection of "temporary" spent fuel storage as unrelated to "honest safety concerns" despite there being no place for final disposal.

Regarding the Moab mill tailings, Tanner stated that strong opposition was based "on somewhat speculative hypotheses about a gradual shift in the Colorado River." The Department of Energy has conceded there were too many uncertainties associated with the long-term stability of the tailings on the floodplain.[2] My point was that it required a skeptical opposition to achieve this.

Regarding the proposed replacement facility for remote-handled low-level waste at the Idaho National Laboratory: It is not "if" but "when" the proposed RH-LLW facility will trickle out contaminates to our aquifer in significant amounts and for hundreds of thousands of years—longer than the geologic ages of much of the basalt rock and soil at INL.[3]

This toxic and long-lived waste, which would be characterized as greater-than-class C waste appropriately requiring a deep geologic repository, is generated at INL or imported via the Naval Reactors Facility.

This waste stream has been disposed of at INL's Radioactive Waste Management Complex, the Superfund dump slated for closure, and is currently being taken to a DOE waste facility in

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[1] Idaho Falls Post Register: "Much ado about nothing" editorial by John Tanner, October 23, 2014.

[2] See more at www.gjem.energy.gov/moab/documents/FloodMitigationPlan_Rev3.pdf and http://www.clarku.edu/mtafund/prodlib/living_rivers/MoabMillProject.pdf

[3] US Department of Energy, "Environmental Assessment for the Replacement Capability for Disposal of Remote-Handled Low-Level Radioactive Waste Generated at the Department of Energy's Idaho Site," Final, DOE/EA-1793, December 2011. http://energy.gov/sites/prod/files/EA-1793-FEA-2011.pdf

Nevada. This waste could continue being shipped out of Idaho to the Nevada where DOE predicted "no groundwater impacts." [4] Contaminants that enter the aquifer are shared downstream to Thousand Springs and beyond. Estimates of radiation dose from the vaults count on dilution, not containment.

Numerous unverified assumptions whittle down the dose estimates, including ignoring episodic flooding.[5] [6] [7] The peak concentrations, as well as peak times cannot be accurately predicted. DOE knows there are too many scientific unknowns, especially over such long time spans[8] and carefully avoided candid uncertainty estimates in its NEPA Environmental Assessment.

Problems with the comparison of background external radiation dose with radiation protection standards are many. Cancers are caused by background radiation and radiation protection standards consider only cancer mortality and not cancer incidence, genetic effects, birth defects or other adverse health effects. The fact that children are 6 to 8 times more vulnerable to fatal cancer from radiation is ignored.[9] [10]

The vaults will trickle out significant portions of the maximum contaminant levels: about 20 percent of the MCL for Iodine-129. Upon gaining experience with hexavalent chromium, California passed a law reducing the MCL by a factor of 10.[11] A toxic brew of contaminants staying below the MCLs may be palatable to regulators but is not protective of human health.

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[4] See various documents posted by the State of Nevada concerning waste burial at http://www.state.nv.us/nucwaste/nts.htm

[5] Idaho National Laboratory, "Evaluation of Groundwater Impacts to Support the Natural Environmental Policy Act Environmental Assessment for the INL Remote-Handled Low-Level Waste Disposal Project," INL/EXT-10-19168, Rev. 3, August 2011. http://www.osti.gov/scitech/servlets/purl/1032018

[6] Idaho National Laboratory, "Explanation of Significant Differences Between Models Used to Assess Groundwater Impacts for the Disposal of Greater-Than-Class C Low-Level Radioactive Waste and Greater-Than-Class-C-Like Waste Environmental Impact Statement (DOE/EIS-0375D) and the Environmental Assessment for the INL Remote-Handled Low-Level Waste Disposal Project (INL/EXT-10-19168)," INL/EXT-11-23102, August 2011. http://www.inl.gov/technicalpublications/documents/5144355.pdf

[7] Idaho National Laboratory, "Assessment of Potential Flood Events and Impacts at INL's Proposed Remote-Handled Low-Level Waste Disposal Facility Sites," INL/EXT-10-18191, September 2010. http://www.inl.gov/technicalpublications/documents/4633207.pdf

[8] US Geological Survey, "Review of the Transport of Selected Radionuclides in the Interim Risk Assessment for the Radioactive Waste Management Complex, Waste Area Group 7 Operable Unit 7-13/14, Idaho National Engineering and Environmental Laboratory, Idaho." DOE/ID-22192, USGS 2005-5026, February 2005. http://pubs.usgs.gov/sir/2005/5026/pdf/Vol1.book.pdf

[9] Department of Energy, "Draft Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-like Waste," DOE/EIS-0375-D), February 2011. http://www.gtcceis.anl.gov/guide/gtcclw/index.cfm

[10] Arjun Makhijani, PhD. and Brice Smith, PhD., Institute for Energy and Environmental Research, "Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment Facility Proposed to be Built in Lea County New Mexico by LES," November 24, 2004.

[11] In July 2014, California passed a maximum contaminant level (MCL) for chromium-6 of 0.01 mg/L or 10 ppb.[11] The EPA standard for maximum concentration of chromium-6 remains 10 times higher at 0.1 milligrams per liter or 100 parts per billion (ppb). See http://www.valleywater.org/services/chromium-6.aspx

The INL RH-LLW facility, while small in contrast to the nation's spent fuel inventory, will unnecessarily undermine Idaho's water and human health for generations. And in the absence of a healthy skepticism from our state leadership, we can expect more contamination to come.

Article by Tami Thatcher, former nuclear safety analyst at INL and a nuclear safety consultant.

Department of Energy Whistleblower: Justice over Racial Discrimination and Ethics Violations in a Right To Work State (Human Resources Ethics and Concerns)

By Dennis Patterson (Author), Michael R. Strickland (Editor)

Book Description

Publication Date: May 18, 2014

"This book is a first-person account of a Department of Energy whistleblower who fought for fairness and justice at our nation's lead nuclear research facility, the Idaho National Laboratory (INL). At the time he became a whistleblower Dennis Patterson was the "Ethics Officer" and manager of the Employee Concerns Program at the INL. Dennis was responsible for promoting high ethical standards and being an advocate for employee rights. The office was designated a "safe haven" for employees to report unethical or illegal conduct without fear of retaliation.

"While conducting an allegation of unfair termination Dennis soon discovered violations of company policy, regulations, and possible racial discrimination. During the investigation, management refused to cooperate, withheld evidence, manufactured evidence, and impugned Dennis' character. Nonetheless, justice was served and the employee was able to return to his job at the INL. Given the serious acts of misconduct Dennis desired to meet with the company president. It was at this point that Dennis became the subject of repeated and ongoing harassment and retaliation.

"This book is about Dennis' fight to make the INL a better laboratory. You will read about his efforts to make his community a better place to live as Dennis shares personal stories of his faith, family and friends and the incredible people he met along the way.

Tami Thatcher review of the kindle book by Patterson:

Important Insights About Idaho National Laboratory's BEA and the DOE's Whistleblower Program, May 24, 2014

"It is important that Patterson shares his experience because honest people with a conscience don't expect the degree of shameless lying that goes on. You get a taste of how bringing a Department of Energy Whistleblower case subjects a person to BEA's shameless lying while BEA has an open DOE budget to pay for their legal costs.

"The book gives examples that help you understand why INL Ethics Offices, in general, are meaningless with regard to nuclear workers being threatened by management for not doing what management wants, which sometimes includes the cover-up of safety problems. Anyone with the illusion that DOE is not in bed with its contractors should read this book. [12]

Ralph Stanton's brother (J.L. Stanton) has made a face book group for following issues pertaining to the ZPPR plutonium event. And they are friends with Patterson. J.L. Stanton writes: "As the brother of Ralph Stanton, another whistleblower mentioned in this book, I cannot thank Mr. Patterson enough for his contributions and efforts to make nuclear operations in the United States as safe and as transparent as possible. Unfortunately, with contractors such as Battelle Energy Alliance running things, I fear for the industry's future. Falsification of type 1 work procedures as the standard, falsification of health records, falsification of exposure levels, perjury in depositions, dishonesty, and a total lack of concern for worker safety is how this company operates across the United States. Dennis' account is an amazing look at what goes on behind the scenes in the nuclear industry and how the Department of Energy is complicit in helping contractors cover up ethics violations. A must read."

Excerpt from the book: "In another matter the Post Register ran a headline on December 12, 2013, "EX-INL worker awarded $ 100,000." The jury found that the employee's "perceived mental disability" was a motivating factor for BEA to take adverse employment actions against him. The article noted that according to court records, management had allegedly asked the employee to "engage in behavior that he deemed unethical and inappropriate." The employee was a nuclear engineer. He resigned in October 2011, "because of the hostile work environment and discrimination at INL."

This nuclear engineer was involved with MFC and refused to falsify documents.

[12] http://www.amazon.com/review/R17QKJY6BUEEJC

Peterson continues: "Over the past year I have been contacted by several former BEA employees for advice and assistance. Each of them had been recently terminated. All of them believed that their dismissal was either unjust and/ or retaliation for reporting misconduct."

Pro-Nuclear Industry Film "Energy on Trial"

Robert Alvarez's statement "With respect spent power reactor fuel storage, I think that we need to change the narrative about the nature of this hazard. Instead, discussion of spent fuel is carried out using of innocuous terms such as metric tons, assemblies fuel rods etc." What some people don't appreciate is that the release of the radioactive material from spent fuel—quickly from a spent fuel pool fire involving fresh fuel, or slowly as it trickles into groundwater—can adversely affect the health of people, especially children and all living things. Spent fuel quantities ought to be expressed in more meaningful terms, like . . .the number of Pacific Oceans it would take to dilute the waste. Even then, as we have learned with Fukushima, there are plumes. . .plumes that fish cannot escape because the waste is not uniformly distributed for a long time.

Sometime back, I saw for the second time, an INL presentation and panel discussion for students and public that featured the film "Energy on Trial", see http://energyontrial.org/

It was truly a remarkable impact this 1 hour film had on students at Idaho State University. They were all ready to stand up and promote nuclear power. Add their professors pushing nuclear courses and very impressive Idaho National Laboratory folks at the panel: the students readily received the intended message.

That the film "Energy on Trial" is extremely biased toward nuclear power and is extremely superficial as problems are glossed over. Its documentary approach and the actual sincerity of the wide range of speakers come through convincingly to people not familiar with the issues. And they really don't "get" just how biased what they are watching is, as it flips from speaker to speaker.

One clear message promoted in the film is that the main evil that must be fought is the public ignorance of nuclear power and irrational overblown fears of nuclear power. Radiation is natural – it's part of living on earth, says INL director Grossenbacher.

You've got educated, intelligent and sincere (and well-paid) people on this film pushing nuclear power. The issues are raised and then glossed over and cast aside as though resolved. The high risk of accidents, radiation health risks, and the enormous problems and expense of nuclear waste – all painted as insignificant problems in this film.

I believe that the experts actually have been brainwashed to believe that Chernobyl wasn't all that bad. This is understandable given the US government health organizations foot-dragging and rewarded bias to avoid timely and clear communication of radiation health risks.[13] And people

[13] Hoffman, FO. Testimony of F. Owen Hoffman In: National Cancer Institute's Management of Radiation Studies Hearing before the Permanent Subcommittee on Investigations of the Committee on Governmental Affairs

have said that the biggest problem now for Japan is the cost of fossil fuel—because these people don't understand the despair of those who have lost their land and homes and the radiation health risks people in Japan are facing.

So, the challenge is how to get the real story of the impact of Chernobyl and of Fukushima across to public officials and the public so that an adult conversation can actually be held.

The nuclear industry does not want you to know what a truly daunting the task managing spent fuel waste will be. With regard to Yucca Mountain, let's start by not putting the waste in a volcanic region, number 1. Then, how many folks understand that when put in a mountain like Yucca Mountain, the casks will corrode and the fuel material will mix with ground water? If not put in a mountain, you will be paying to repackaging/monitoring spent fuel every couple hundred years for more than 1 million years. Nuclear Regulatory Commission Chairman Allison MacFarlane's dissenting comments on NRC's Generic Environmental Impact Statement for continued storage of spent nuclear fuel (GEIS) provide insights into the lack of accounting for the cost of repackaging spent fuel if a repository is unavailable, and the acknowledgement of catastrophic environmental impact if the spent fuel is released to the environment.[14]

Anyone notice the high prevalence of oil tanker train wrecks in the last few years? The NRC licensed spent fuel casks fail within 30 minutes of a large fire, allowing a Chernobyl in your town.

The film does address climate change – something interesting in that the INL was allowed to participate in creating "Energy on Trial" and yet also distance itself from the film for political reasons—Republicans don't believe in climate change.

What is needed is real public education and how to promote real solutions in light of climate change—with an eye on progress made by other countries like Germany in phasing out nuclear energy and transitioning to renewables.[15]

Article by Tami Thatcher.

United States Senate. One Hundred Fifth Congress, Second Session, September 16, 1998. S. Hearing. !05-686. Washington, DC: .S. Government Printing Office. 1998.

[14] Nuclear Regulator Commission, Chairman Allison M. MacFarlane, SECY-14-0072 – Final Rule: Continued Storage of Spent Fuel (RIN:3150:AJ20). http://www.nrc.gov/reading-rm/doc-collections/commission/cvr/2014/2014-0072vtr-amm.pdf

[15] See Rocky Mountain Institute, http://thinkprogress.org/climate/2014/05/13/3436923/germany-energy-records/.

‘Day of Remembrance for Nuclear Workers’ is today

October 30, 2014

By LUKE RAMSETH

lramseth@postregister.com at the Idaho Falls Post Register.

BLACKFOOT — Velma Johnson still recalls reporting to work at the medical clinic early that January morning in 1961.

She stepped off the bus and walked past an ambulance pulled up to the curb. What she witnessed inside felt eerie, and chaotic.

It was 7 a.m. on Jan. 4. The night before, not far from where Johnson worked as an X-ray technologist at an on-site clinic, the SL-1 reactor at the National Reactor Testing Station had undergone a steam explosion and subsequent meltdown, killing three workers and exposing numerous others to a huge dose of radiation. It was the world’s first fatal nuclear reactor accident.

Johnson, 87, said she’d heard sirens that night, but didn’t know specifics.

“There was stuff that we just walked into,” she said. “But we had to take care of all these guys, all the workers. And they put us to work, boy. Taking urine analysis, taking everything.”

Today is National Day of Remembrance for Nuclear Workers — workers such as Johnson who put in decades at what now is Idaho National Laboratory and other nuclear sites around the country. Congress passed the resolution creating the day of remembrance in 2009.

In supporting the nuclear effort following World War II and through the Cold War, workers were exposed, often unknowingly, to radiation, chemicals and other workplace risks that either have been eliminated or reduced today.

Many from that era have died, but there remains a large contingent of people such as Johnson who still reside in eastern Idaho. They are cared for by several government-funded health providers, such as Nuclear Care Partners and Critical Nurse Staffing, which both have offices in Idaho Falls.

Johnson, a Shelley resident, knows she was exposed to high levels of radiation that day in 1961, and the two nonstop days of work that followed. At one point, she began feeling a slight burning sensation on one side of her foot.

She had someone put a radiation detector near it, and said the detector started beeping like crazy. Her shoes immediately came off and were placed in a bag.

“I know the others got contaminated, too, but we didn’t have time to check all the nurses and techs and everyone,” Johnson said. “It was no fun. I can remember as plain as can be.”

Blackfoot resident Jim Furniss, 79, was working the graveyard shift at a reactor site several miles away the night of Jan. 3. He recalled finishing up some refueling work and reporting to the health physics office.

That’s when he heard the radio squawking and “all hell breaking loose.” He and a few other workers climbed up on the roof and watched the flashing lights of SL-1 off in the distance.

Furniss worked for decades as a welder and pipefitter at what today is INL, as well as other nuclear sites and power plants around the country.

He recalled a radiation incident while he was working a project at Indian Point Energy Center, a nuclear plant in New York. There also were hazards at INL, where he now knows he was constantly exposed to asbestos and other toxic chemicals.

“The way they dressed us then — the clothing, the respirator — they would never dress like that today,” he said.

Furniss has beaten back throat cancer. He’s picked up pneumonia more than 30 times in recent years. His voice is gone and a long tube, equipped with a nasal cannula, is hooked up to an oxygen tank that follows him everywhere.

It’s hard to attribute specific exposures and chemicals to his array of health issues. But he and his wife, Cathy, know they played a big part.

Cathy Furniss, 71, who also worked for years in various clinical positions at the site, does much of the caretaking for her husband. In addition, a nurse from Nuclear Care Partners checks in three times a week.

Johnson, meanwhile, has a Nuclear Care Partners nurse with her 24 hours a day. She’s faced plenty of her own health scares in recent years.

Still, neither Furniss nor Johnson regret their decades of work at INL.

“I learned a lot, I really did. I was very thankful for the job,” Johnson said. “But anyone working out there has got to be careful. And I thought I was. But you can’t do much when you have 20 men coming in for blood work. You put your gown on, and you get busy.”

Additional Lawsuits Filed Over Radiation Accident

The Idaho National Laboratory accident in 2011 exposed 16 workers to radioactive material and problems leading to the accident are described in the Department of Energy Accident Investigation report [16]and the DOE Occurrence Report for the accident.[17]

Post Register article on November 12, 2014 by LUKE RAMSETH, lramseth@postregister.com

"Three years later, lawsuits still are being filed against Battelle Energy Alliance over an Idaho National Laboratory accident that exposed 16 employees to radioactive material.

The latest federal complaints were brought individually by Brian Simmons and Steve Braase, INL employees who were in the room when a plutonium exposure occurred Nov. 11, 2011. The accident happened at the Materials and Fuels Complex west of Idaho Falls.

"They're both still working," said DeAnne Casperson, an Idaho Falls attorney representing both men. "And they're both still working through issues (the exposure) has caused them."

Simmons, along with fellow nuclear operator Ralph Stanton, filed a whistleblower complaint with the U.S. Department of Labor in April 2013 against INL contractor Battelle Energy Alliance. It alleged Battelle created an unsafe work environment and then retaliated against them after they raised health and safety concerns.

The Department of Labor had a year to investigate and report a resolution. But by April, no such investigation was underway.

That entitled Simmons to file a formal civil complaint in U.S. District Court in Idaho, according to court documents. Stanton, who is represented by a different attorney, has yet to file a similar lawsuit, but could at a later date. Efforts to reach his attorney, David Whedbee, were unsuccessful.

The Simmons complaint, filed Oct. 31, makes many of the same claims as the 2013 Department of Labor complaint filed by him and Stanton, including that Simmons was exposed to plutonium due to a series of inadequate safety protocols.

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[16] Department of Energy, Office of Health, Safety and Security (HSS), Accident Investigation Report, "Plutonium Contamination in Zero Power Physics Reactor Facility (ZPPR) at the Idaho National Laboratory" accident 11/8/11 at the Materials and Fuels Complex (MFC). http://energy.gov/hss/downloads/investigation-november-8-2011-plutonium-contamination-zero-power-physics-reactor or http://energy.gov/sites/prod/files/2014/04/f14/INL_AI_Report_11-08-2011.pdf

[17] DOE Occurrence Report NE-ID-BEA-ZPPR-2011-0001 https://orpspublic.hss.doe.gov/orps/reports/displayReport2.asp?crypt=%87%C3%95%9Ba%8Etjz%5D%91

While working with a storage container, Stanton sliced through plastic and electrical tape wrapped around an old plutonium fuel plate.[18] Plutonium powder spilled out. Both Stanton and Simmons inhaled the powder into their lungs, and others were exposed.

Plutonium, if it gets in the body, can stay there for decades, increasing the risk of cancer and potentially causing damage to the kidneys.

"Simmons continued to have chills, fever, fatigue, and vomiting for several months," the lawsuit said. "He continued to have episodes of vomiting for 12 to 13 months, and occasionally still today."

Both Simmons' and Brasse's lawsuits also allege Battelle delayed and mishandled tests following the accident that would have determined the radiation dose both men received. As a result, the lawsuits claim Battelle "grossly underestimated" the dose.

Braase's complaint was filed Friday. It marked the first time the health physicist technician has been involved in litigation regarding the 2011 incident. His job is to monitor radiation levels using special equipment when workers such as Simmons are processing plutonium.

Before Stanton sliced open the fuel plate, Braase had taken a swab of it, and found it did not have elevated radiation levels. After the powder fell out of the fuel plate, another swab was taken, which Braase handled, court documents said. Braase took it to a nearby radiation detector.

"The needle of the meter, which usually must be within approximately a quarter inch of a source of alpha radiation to give a reading, jumped when it was three inches away from the swab," the documents said.

Braase told everyone to stop work. He soon detected radiation on Stanton's shoulder, and shortly after, an alarm went off that indicated airborne contamination. Everyone in the workroom then evacuated, other than Braase and Stanton.

"Braase had to ensure any radioactive powder on Stanton's hands was contained, and therefore he had Stanton remove his gauntlets and gloves, quickly wrapped Stanton's hands in a plastic bag and taped them off," the lawsuit said.

Radioactive contaminants later were found on Braase's face, in his hair and on his arms and body.

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[18] The Department of Energy's Accident Investigation report states: "The Board acknowledges that the work group appropriately stopped work when they first recognized the abnormal condition presented by the labels on the Pu fuel plate storage containers. However, the management systems governing stop work broke down when **workers were directed to proceed** and cut the plastic wrapping around the Pu fuel plate, thereby releasing the hazardous radiological contaminants.

Both men are demanding a jury trial. They are seeking compensation from Battelle and other "equitable remedies" such as additional training for management.

A Battelle Energy Alliance spokeswoman said she was aware of the lawsuits, but could not comment because she had not received approval from the U.S. Department of Energy."

EDI Comments :

EDI has provided several articles on the ZPPR accident and the numerous failings that led to the accident. But because of the short memories of BEA upper management who wish to blame the workers for the accident, it is important to reiterate here that the workers had appropriately questioned whether to proceed and were directed by management to proceed.

The Department of Energy's Accident Investigation report states: "The Board acknowledges that the work group appropriately stopped work when they first recognized the abnormal condition presented by the labels on the Pu fuel plate storage containers. However, the management systems governing stop work broke down when workers were directed to proceed and cut the plastic wrapping around the Pu fuel plate, thereby releasing the hazardous radiological contaminants." See Department of Energy, Office of Health, Safety and Security (HSS), Accident Investigation Report, "Plutonium Contamination in Zero Power Physics Reactor Facility (ZPPR) at the Idaho National Laboratory" accident 11/8/11 at the Materials and Fuels Complex (MFC).