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INL Managers Deny Any Responsibility for ZPPR Accident

By Tami Thatcher

A recent article in the Boise Weekly about the 2011 Zero Power Physics Reactor (ZPPR) accident at the Idaho National Laboratory's Materials and Fuels Complex (MFC) included interviews of INL managers.[1]

The ZPPR accident contaminated workers with plutonium when damaged fuel plates were exposed. The DOE accident investigation report[2] concluded that the accident was preventable and that the safety chairman for MFC had twice given written information about his concerns about the continued use of the hood and the higher likelihood of finding damaged ZPPR plates.

The Department of Energy accident investigation report stated that "Battelle Energy Alliance (BEA) continued operation of the ZPPR Facility with known safety basis deficiencies and without adequately analyzing the hazard to the worker."

Interviewed for the Boise Weekly, Phil Breidenbach recalls the meeting with the safety oversight chair as cordial and soft-spoken. "This letter, when it's looked at outside the context of what goes on here every day, creates the image that someone ran in here and said, 'No, stop, danger, danger, danger.'" John Grossenbacher said. "That's not the case."

DOE and its contractors should take note: all safety issues of *actual* importance require the person describing it to say "Stop" and then say "danger, danger, danger" at least three times.

Breidenbach said one simple action could have prevented the exposure: Ralph Stanton and others could have stopped the work once they found the plastic-wrapped plate. "I'm not a rocket scientist or a Ph.D.," Grossenbacher added, "but if I'm a rad-con tech and I think, 'Well, what

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[1] Article by Jessica Murri, "Half-Life: How an Accident at the Idaho National Laboratory Changed a Family," *Boise Weekly*, April 2014. http://www.boiseweekly.com/boise/half-life-how-an-accident-at-the-idaho-national-laboratory-changed-a-family/Content?oid=3094301&showFullText=true

[2] 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.

happens to this stuff after 30 years of being wrapped in plastic, anybody know?' And if the answer is no, I would say, 'You know what, let's stop.'"

These two INL managers have forgotten the DOE accident investigation report that describes Stanton and others who questioned several times whether to proceed and it describes the operations personnel including the facility manager – who confidently directed that the work proceed. They have also forgotten the finding that BEA management failed to report the Safety Chair's findings as an Unreviewed Safety Question.[3] [4]

Breidenbach said, "the stars aligned in such a way that too much equipment was out of service." But, BEA had problems far beyond the work room's ventilation and inadequate alpha alarm placement.

For INL managers who had been briefed on the safety problem but never acted on it, never bothered to find out if operations people understood the increased risk, never questioned whether the controls were adequate – for them to state that it was the fault of the rad-con techs reflects an uncorrectable mentality.

Grossenbacher also said that when it comes to the health effects of plutonium inhalation: "We know what kind of radiation exposures will result in physical impacts on a person's health, and none of these exposures came anywhere near that."

The problem is that estimated doses have are large uncertainties and questionable cancer risk prediction adequacy.[5]

I would also like to remind Grossenbacher that the Energy worker compensation act (EEOICPA) points out that "studies indicate than 98 percent of radiation-induced cancers within the nuclear weapons complex have occurred at dose levels below existing maximum safe thresholds." [6]

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

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[3] 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

[4] See the October 2013 EDI newsletter article about ZPPR: http://www.environmental-defense-institute.org/publications/News.13.Oct.-Final.2.pdf

[5] December 2013 EDI Newsletter article, "How Believable are Estimated Radiological Doses Following Plutonium Inhalation?" by Tami Thatcher. http://www.environmental-defense-institute.org/publications/News.13.Dec.Final..pdf

[6] 42 USC 7384, The Act--Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA), as Amended.

Boise Weekly Half-Life Article Debate

By Ralph H. Stanton

Though I respect Nicole Stricker's [INL/Battelle Spokesperson] response to Jessica Murri's [Half-Life] article, based on answers she has provided representing Battelle Energy Alliance's (BEA) opinions, it is understandable why she is a media spokesperson and not a radiological professional.

Nicole's letter indicates that Jessica's article failed to show that low levels of radioactive contamination can be measured with accuracy. Fair enough. But Nicole's letter failed to show that HIGH levels of radioactive contamination can be measured with accuracy as well. Prior to the accident, I began to cut away the layers of plastic wrap from the Plutonium plate. Americium and Plutonium powder fell out, signifying a breach of the plate. Steve Braase took a sample of the powder and after verifying its radioactivity, threw it away in a contamination receptacle next to the work hood. As shown in the Department of Energy's (DOE) accident report, that sample was later shown to have a dpm/100 cm2 reading of 5,500,000, or 5,499,980 dpm/100 cm2 higher than is recognized by all the various nuclear commissions as being good for one's overall health. DPM (disintegrations per minute) is a measurement of radioactive breakdown. A sample with a 20 DPM or higher is something a person wouldn't want to have anything to do with. With that said, does BEA consider 5.5 million dpm/100 cm2 to be a 'low level of radioactive contamination'?

After over four minutes of exposure to the radioactive powder, the Vault CAM (Constant Air Monitor) located 15 feet behind us and upstream of a ventilation fan, went off, signifying that the Alpha contamination had gone airborne. The CAM eventually reached a DAC (Derived Air Concentration) reading of 4657. A DAC reading of 0.03 would require the use of respirators. In other words, over the course of those four plus minutes, the Alpha contamination fought its way past the ventilation fan's airstream to make its way to the CAM and post a DAC reading 150,000 times the amount where workers would be required to wear respirator units. Though Alpha contamination cannot penetrate the skin and is the easiest surface contamination to prevent, it is the worst contamination to inhale, as the isotopes, once lodged inside the lungs, cannot be removed. The contamination, once inside the lungs, begins to change the cell structures of individual cells, mutating them and causing a host of cancers over time as proven through a multitude of research throughout the years. So, over the course of those four plus minutes, my fellow workers and I were exposed to readings that by anyone's sane definition would be anything BUT 'low level'. And trust me, none of us held our breath during those four plus minutes, so those of us closest to the event received quite a bit of inhalation exposure.

After the evacuation of the work room into the control room, we stood around for over an hour waiting for help from the response teams. When they didn't arrive, a manager took a co-worker and me to the EBR 2 facility for treatment, exposing himself and his vehicle to contamination (the 17th individual exposed, but never reported in the DOE or other reports). Other workers also went to various facilities in government vehicles, contaminating the vehicles. At the EBR 2 facility, first responders weren't wearing protective clothing or respirators, thereby exposing

them to contamination. When we were sent to the CFA Medical facility, the staff was not adequately protected via hazmat suits or respirators and were therefore, exposed to the contamination coming from the initial 16 victims. After that, we were all taken at various times to the Lung Counting facility where a device was used to count the particle signatures of Americium 241 in our lungs. Once again, workers at the Lung Count facility were not protected against the contaminants coming off of the 16 original victims.

Depending on the actual number of individuals working that day, between 20 and 50 additional (possibly more) workers may have been exposed at the various response facilities and taken contamination home that day. Also, EBR 2, CFA Medical, and the Lung Count facilities all received exposure to the radioactive contamination coming off of the initial 16 victims. I'm not sure why, but the DOE and BEA have never bothered to mention the possibility of additional victims due to the inadequate response to the disaster. Also, as an aside, BEA has never explained why the most basic of protections (decontamination showers) weren't in proper working order. When the most basic of protections is overlooked or not provided, how can one say that the safety of the workers is their company's #1 priority?

In the case of my lung counts, my initial lung count was thrown out (it was a very high reading). BEA tried to explain it away as being a skin contamination issue, though this wasn't the case with others who had lower readings. As with all readings associated with this accident, BEA has made an effort to find excuses for throwing out any readings that could be damning to their version of events while keeping lower exposure readings, much as the cigarette companies did when fighting allegations that cigarettes caused cancer in the late 1900s. As information comes out over the coming years, one should note that any readings considered low by industry standards will be accepted at face value by BEA, but anything considered unsafe will be deemed to be inaccurate, with the testing methods being brought into question. It wouldn't surprise me if BEA questions its own testing procedures before this story is completely told.

After the accident, the first urinalysis (the most important for figuring out exact exposure levels) given by the four most exposed were deemed unusable by the company. An excuse was given. Anyone who knows how urinalyses are done knows that a sample is divided into an A and B sample. In case the A sample is unusable, the B sample is used instead. So why wasn't the B sample tested using the proper techniques once improper testing was discovered during the A samples' testing? The next most important urinalysis to test after a nuclear incident is the second urinalysis. What were the odds that the samples provided by the four most exposed would come up unusable for the second time in a row? You guessed it. For some reason, the testing facility couldn't properly handle the second set of urinalysis as they hadn't for the first. The importance of these tests to our future health cannot be underestimated as they would show in a very accurate manner the amount of exposure we received. Coupled with historical information regarding exposure levels, we would know what to expect from future health issues related to this exposure and take steps accordingly in prolonging our lives. Unfortunately, the urinalysis would also show just how bad the accident really was. It is not in BEA's best interests to allow such information to become public. BTW, the odds of the four most contaminated samples to be deemed unusable two tests in a row while the 12 least contaminated samples were deemed usable is 1 in 3.3 million.

Nicole says in her letter that none of the workers went home with detectable levels of contamination. Without showers and personnel using an alpha detector to check us out during decontamination efforts, it is silly of Nicole to say that none of us went home with detectable contamination. She states that, "Home samples analyzed by an independent lab found nothing above background levels known to exist in soil from fallout deposited during atmospheric nuclear testing conducted by several nations mainly in the 1950s and 1960s". This is an excuse offered up by contractors, the DOE, and its precursor the Atomic Energy Commission (AEC) in virtually all nuclear accidents where radioactive contamination has been released into the public. It is the first line of defense when dealing with allegations such as mine. What Nicole failed to tell you in her response is that the particle residue for the atmospheric testing is different than that from a direct source of exposure such as ours. The isotopes that have gone through the atomic explosion have residue from the explosions attached to them, whereas the isotopes we brought home do not have this residue on them. Contamination that didn't go through a nuclear reaction is called virgin contamination. Six months after the accident, several of us sent samples from our homes to the Boston Chemical Data Corporation for testing. We were made aware that we had brought contamination home to our families through the testing done on the samples, as they tested positive for Americium 241 and Plutonium 239. All were virgin samples, showing no signs of having been through a nuclear reaction. Therefore, the contamination couldn't come from the atmospheric testing conducted during the 1950s and 1960s. What Nicole fails to mention regarding the home testing done by the Oak Ridge University (for BEA) is that only 4 of the 16 accident victims allowed the survey group into their homes. What she fails to mention is that one of the individuals whose home was tested had a positive reading in his vacuum cleaner. The reading was for a virgin contamination (not contamination from atmospheric testing). This person also had a positive testing from the lab we sent samples to. BEA's excuse for dismissing the positive result was that they couldn't confirm the history of the vacuum in question (where it had been throughout its lifetime) and therefore, the positive test result in their view counts as a non-positive. This example of BEA refusing to accept an 'independent lab's' test results is just one of the reasons 75% of the 16 victims refused to allow the company into their homes.

Historically, the AEC and DOE learned after the down winder lawsuits of the 1970s and 1980s to spread a lot of grant money as far and wide as they could in order to keep a host of professionals in the nuclear field from testifying against them in the various lawsuits that were popping up during that time (and currently). Academics were threatened with having their funding dropped if they were to testify against whatever views the various agencies held. So, when reading about independent labs cited by BEA and others, take into account where the majority of their funding comes from and where their allegiances lie.

Nicole talks about my saying the INL and BEA did nothing for the affected employees and then cites an example featuring Sharon Dossett, the INL's Environment, Safety and Health Director. Nicole states that I said Dossett didn't reply to an email of mine concerning possible contamination of homes and businesses. She didn't reply via email, but she did choose to drive from Idaho Falls to the INL site 45 miles away during bad weather to have a chat with me. She never would commit to having the businesses surveyed. Why she wouldn't give this response via the safer method of an email is beyond me. Maybe she wasn't interested in leaving a paper trail

for later consumption. In the name of transparency, I asked Sharon to come with me to two affected businesses so she could explain to them how their businesses possibly came to be contaminated and what BEA and the DOE were going to do to help them. I CC'd several of the highest ranking members of BEA in all my correspondence with Sharon, including CEO John Grossenbacher and Site Head Philip Breidenbach among others. The only response via email that I received from any of the listed was from Chere Morgan, the director of radiological control telling me a home survey was scheduled for my home the next day. My response to her was as follows:

"Chere, I was waiting for Sharon Dossett to respond to my December 5, email, regarding the surveying of businesses and homes connected to my home. Has Sharon spoke with you regarding this issue since you are doing the scheduling? Please let me know. Best Regards, Ralph"

Sharon Dossett never responded via email to my concerns. To this day, BEA has never bothered to contact the businesses that were possibly contaminated. CEO John Grossenbacher has never responded. Philip Breidenbach has never responded. No one at BEA has ever responded. For some reason, the safety of businesses that may have been affected by this unfortunate accident are of no concern. Hopefully Nicole can go ask Sharon, John, and Philip some questions so we can finally get the answers as to why they are not interested in surveying the two businesses that may have been contaminated.

As for help and assistance, when I asked Phil Breidenbach if I could borrow an Alpha Detector to survey my home for contamination, he refused. Subsequently, I and others were forced to pay thousands to have tests run on samples from our homes. Does that sound like BEA had our best interests in mind?

And then there's the little matter of my whistleblower lawsuit that Jessica really wasn't able to get into due to lack of space. Three weeks prior to the accident, a manager approached myself and a co-worker. He had a request. He wanted us to falsify 25 Type I Work Procedures, an act that is a federal offense. He wasn't asking us to do this for a small facility, but a Nuclear Category 1 Facility. As we weren't interested in going to jail if anything were to happen, we declined his offer. After he left, we approached his manager and told him what had happened. The second manager told us they were in a tight spot and that it would really help them out if we could sign the papers. We took the issue to Phil Breidenbach, head of the site. As he was in charge, you would think that safety would be at the top of his list. You would think that lower level managers falsifying Type I Work Procedures at a Nuclear Category 1 Facility would be something he was interested in. Nothing happened. Philip didn't do his job. After the accident, the co-worker and I told DOE investigators who had come to investigate the accident about the falsification efforts (which were eventually falsified before the accident by other employees under duress). The DOE was very interested and intended to call a second investigation due to BEA's breaking of federal laws. This isn't something you do at a Nuclear facility. But on February 29th, 2012, the second investigation was called off for no reason. In addition, someone at the DOE leaked what the co-worker and I had said during the accident investigations regarding the falsification attempts. After that, BEA attempted a variety of ploys to get us fired, including sending us to a psychologist, hoping to get us listed as unfit to work (so we would lose our Nuclear Work Clearances). Hence, we were forced to protect ourselves and our families by

filing a complaint with the Department of Labor.[7]

As for why the DOE would call off an investigation where federal crimes actually occurred is beyond me. I can only assume it has something to do with Bill Gates' TerraPower project, for which BEA is a primary partner. To have an investigation of safety violations and federal crimes at a nuclear site where Bill Gates' project is front and center could hold up the project and eventually cost BEA the contract and billions in profits. Of course, this wouldn't be the first time the DOE has protected BEA and its financial interests. My lawyer and I have attempted to get several documents from BEA and the DOE via the Freedom of Information Act. In one such attempt, the DOE refused to give us copies of communications between the DOE and BEA because, "FOIA exemption (b)(4) is being invoked by BEA to withhold some of the responsive records because it believes its communications with DOE-ID contain commercial or financial information/data that are privileged and confidential and would cause competitive harm if released." Basically, they allowed BEA to withhold everything, including health reports and other items that had nothing to do with BEA's finances. Even test results on my own body are considered work product by BEA and thus, in their opinion, I don't have a right to know as the results are their property.

Hey Nicole, could you do me a favor and get some answers and get back to me?

If BEA had our best interests in mind, why would they allow work to be done when three of the four ventilation fans inside the hood weren't working properly?

Why would they remove the Upstream Alpha/Beta detector located within the work hood ventilation which would have immediately detected the escaping contamination and allowed for an immediate evacuation of the ZPPR workroom?

Why would they remove decontamination showers from the ZPPR plant, the most basic of protections against skin contamination?

In 2009, why would they not notify the radiological workers of the information provided in the White Paper detailing the safety problems regarding the work Hood, the Stainless Steel Cladding that housed the Plutonium samples, and the lack of decontamination showers?

Why didn't they notify the workers when that paper was again presented to management in 2010 due to management's ignoring it the first time around?

Did management feel the workers, who actually do the radiological work, weren't qualified to have that information at their disposal?

Why would Sharon Dossett refuse to answer my questions via email? John? Philip? Anyone?

Why would a company so concerned with safety allow managers to falsify 25 Type I Work Procedures at a Nuclear Category 1 Facility? To do so IS a federal offense after all.

[7] http://www.mhb.com/cms/wp-content/uploads/2013/07/simmons-osha-complaint.pdf

Do these managers still work for BEA? If so, why? Were they ever prosecuted?

You can see why I'm a little upset. All I did was go to work one day, hoping to provide for my family. That I got caught up in one of the biggest nuclear accidents in the United States since Three Mile Island wasn't in the plans, but it happened. There's more to this story that will be revealed over the coming months and years. All will be proven with documentation and testimony in civil and criminal courts of law.

The facts will be proven to be so numerous that bystanders should give thoughtful pause when considering the believability of Battelle Energy Alliance's story. So much so, that even Nicole will be impressed.

Ralph H. Stanton, Battelle Energy Alliance accident victim and former employee.
PS: Please join the following group for more information regarding this story.
https://www.facebook.com/groups/540510642736772/

Unbiased Nuclear Radiation Epidemiology a Rarity

By Tami Thatcher

In response to Arthur S. Rood's letter[8]: Far too many researchers who have sought to bring clarity to the subject of cancer risk from radiation exposure have been subject to having publications censored, funding removed, and reputations ruined when their results did not produce the desired result which was that low doses of radiation did not pose health risks. Alice Stewart, Steven Wing, and Thomas Mancuso are some famous examples.[9] [10] [11]

I agree that the causes of childhood leukemia are not clearly understood and nuclear radiation is not the only cause of childhood leukemia.

[8] A letter to the editor from Arthur S. Rood printed in the Idaho Falls Post Register April 20, 2014.
[9] Gayle Greene, "The Woman Who Knew Too Much – Alice Stewart and the Secrets of Radiation," The University of Michigan Press, 1999.

[10] Steven Wing, "A Critical Review of the Department of Energy Efforts to Investigate the Human Health Effects of Plutonium," 1992. *rmpjc.org/wp-content/uploads/2012/02/Wing-Pu.doc*
[11] Geiger, H. J., "Dead Reckoning – A Critical Review of the Department of Energy's Epidemiologic Research," Physicians for Social Responsibility, 1992.

Anyone concerned about the use of scientific method and evidence to support radiological health effects should be concerned about the ICRP radiation models[12] that were developed before the discovery of DNA, underpredict radiation cancer risk by at least 10 fold and actively ignore any information that would lead to acknowledging increased risks.[13] This faulty ICRP data is used to dismiss actual epidemiologic data.[14]

Alice Stewart, who made unpopular discoveries about the effect of prenatal X-rays and Hanford nuclear worker cancers was the first secretary for the European Committee on Radiation Risk. This committee has studied considerable evidence and provided alternative risk coefficients, higher than the ICRPs.

As you have moved from citing those who believe no increases in leukemia were caused by weapons fallout to citing studies that concede increased childhood leukemia deaths near nuclear plants, I see this as tremendous progress and predict that if you keep researching, you'll be anti-nuclear by the Fourth of July.

Letter-to-the-editor printed in the Idaho Falls Post Register, April 29, 2014. By Tami Thatcher, former nuclear safety analyst at INL and a nuclear safety consultant.

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[12] International Commission on Radiological Protection, "Compendium of Dose Coefficients Based on ICRP Publication 60," ICRP Publication 119, Volume 41 Supplement 1 2012.

[13] ECRR – 2010 European Recommendations of the European Committee on Radiation Risk – The Health Effects of Exposure to Low Doses of Ionizing Radiation, Regulators' Edition: Brussels 2010. http://www.euradcom.org/2011/ecrr2010.pdf

[14] See the February 2014 EDI Newsletter article, "The 2010 European Committee on Radiation Risk Report Highlights the Underestimation of Harm from Internal Radiation," by Tami Thatcher.