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Public Meeting Scheduled for IWTU Permit Modification

The public comment period for the Integrated Waste Treatment Unit (IWTU) RCRA hazardous waste permit modification has been extended to from November 9 to December 20 (midnight) and although not previously scheduled, a virtual public meeting has now been announced that will be held the evening of December 20. [1]

The ramifications of the proposed changes to the IWTU suggest that certain aspects of the process gas filter (PGF) are likely to result in more frequent flowing of radioactively laden dry materials (I'll call it sticky radioactive sand) to flow beyond the PGF into portions of the process not designed to receive this material. The need for nitric acid flushes appears to be increased. And the storage of the flushed material will be allowed in a nearby tank and also, without adequate description, the flushed nitric acid and radioactive waste will be allowed to be stored at the nearly NWCF, the facility repurposed from calcining. See early EDI comment submittals in November at the Environmental Defense Institute home page. [2] [3]

The way that the Department of Energy is downplaying its various patch ups of the IWTU design problems raises many warning flags, despite the glitzy promotional video exiting Fluor Idaho created to highlight its work on the IWTU from 2016 to now. The testing of the process in miniature scale at the Hazen facility has been helpful and yet has been conducted with improper installation of equipment and various problems, according to DOE RCRA permitting documents on the DEQ website.

The 900,000 gallons of liquid radioactive high-level waste, now estimated as 850,000 gallons due to evaporation, known as the "sodium-bearing waste" was to have been converted to a

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[1] Idaho Department of Environmental Quality, Public Comment Opportunities page https://www.deq.idaho.gov/public-information/public-comment-opportunities/ with the recent notice for the IWTU at https://www.deq.idaho.gov/deq-announces-notice-of-public-hearing-on-the-intent-to-approve-a-draft-hazardous-waste-treatment-storage-and-disposal-permit-modification-for-the-idaho-nuclear-technology-and-engineering-center-liq/

[2] Public Comment Submittal to the Idaho Department of Environmental Quality regarding its Notice of Intent to Approve a Draft Hazardous Waste Treatment, Storage, and Disposal Permit Modification for the INTEC Liquid Waste Management System Partial Permit at the Idaho National Laboratory (Changes to the IWTU), November 11, 2021, by Tami Thatcher at http://www.environmental-defense-institute.org/publications/CommentIWTU2021.pdf

[3] Public Comment Submittal to the Idaho Department of Environmental Quality regarding its Notice of Intent to Approve a Draft Hazardous Waste Treatment, Storage, and Disposal Permit Modification for the INTEC Liquid Waste Management System Partial Permit at the Idaho National Laboratory (Changes to the IWTU), November 11, 2021, by Chuck Broscious, Environmental Defense Institute, at http://www.environmental-defense-institute.org/publications/EDIComIWTU2021.pdf

calcine-like dry material by 2012 but the IWTU facility has continued to be plagued with design and operational problems. The IWTU has yet to treat any of the radioactive high-level waste known as sodium-bearing waste. Equipment such as the process gas filter, PGF, have required extensive redesign.

The estimated number of canisters of treated dry sodium-bearing waste has increased from roughly 700 canisters to 1200 canisters and more storage at INL for the treated sodium-bearing waste canisters will be needed. It remains unstated whether this is due to addition of newly generated liquid radioactive waste or some other reason.

The IWTU will be releasing radionuclides and volatile organic compounds out the stack at the Idaho National Laboratory's Idaho Nuclear Technology and Engineering Center (INTEC), in addition to emissions like a coal plant such as oxides of nitrogen (NO_x) and sulfur dioxide (SO_2) because it burns powdered coal to generate heat for the process. The most recent air permit for the IWTU is on the Idaho DEQ website. [4]

The Department of Energy is continuing to pay $6000 a day in fines for not meeting previously agreed to schedules to close the storage tanks by 2018 as agreed to under the schedule negotiated with the Idaho Department of Environmental Quality under the Hazardous Waste Management Act. The fines collected by 2018 were $3.6 million and have continued to pile up. The fines can be used to fund environmental projects in the state. [5] Remediation of Department of Energy radiological contamination, however, cannot be funded by the fines collected by the State of Idaho.

Molten Chloride Reactor Experiment slated to be built at the Idaho National Laboratory

The Idaho National Laboratory is stated to be targeted as the location for building a fast-spectrum molten chloride Reactor Experiment reactor. The Department of Energy announced an agreement with Southern Company. The collaborative effort will also include TerraPower, INL, CORE POWER, Orano Federal Services, the Electric Power Research Institute and 3M Company, according to an article by *The Idaho Falls Post Register*. [6]

The promoters of the molten chloride reactor claim their reactor will address climate change and will be a truly groundbreaking experiment. A National Environmental Policy Act (NEPA) review will be conducted before construction begins.

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[4] Idaho Department of Environmental Quality air permit which includes the Integrated Waste Treatment Unit, Transmittal letter dated January 29, 2021, Idaho DEQ to U.S. Department of Energy, Facility ID No. 023-00001, US Dept of Energy – INL, Scoville Final Permit Letter (Document file name us-dept-of-energy-inl-023-idaho-falls-permit-0121-1) at the www.idaho.deq.gov website.

[5] *Exchange Monitor*, "DNFSB Cites Concerns With IWTU Safety Basis," April 24, 2018. https://www.exchangemonitor.com/dnfsb-cites-concerns-iwtu-safety-basis/

[6] *The Idaho Falls Post Register*, "INL targeted for world's first fast-spectrum salt reactor, November 19, 2021.

In the same article, a separate project was mentioned that is to demonstrate the 345-megawatt TerraPower Natrium reactor in partnership with Rocky Mountain Power in Kemmerer, Wyoming. That project features a sodium-cooled reactor with a molten salt-based energy storage system that can boost energy output.

Reduced Air Permitting Oversight by Idaho DEQ, Despite Glaring Radiological Release Omissions from INL Radioactive Waste Ponds

Changes were quietly made, under the radar, to exempt one of the largest radionuclide sources at the Idaho National Laboratory from a state air permit. The Department of Energy requested that the Idaho Department of Environmental Quality terminate the air permit for the liquid radioactive waste open-air evaporation pond at the Advanced Test Reactor Complex and so the Idaho DEQ did just as the DOE requested.

Percolation ponds for radioactive waste were in use from 1952 to 1993, at the Test Reactor Area, later renamed the ATR Complex. In 1993, the radioactive waste percolations ponds were replaced with two adjacent lined evaporation ponds (which are referred to as a single pond) and required an air permit with the State of Idaho.

The Idaho DEQ issued the decision on May 29, 2020 that an air permit for the evaporation pond would no longer be needed. [7]

The basis for the decision is the estimated low doses from the pond to a member of the public off of the INL site. The exemption is based on 40 CFR Part 61, Subpart H, Section 61.96, because the estimated dose is less than 0.1 mrem/yr.

The Department of Energy's effective whole-body radiation doses were estimated in accordance with U.S. Environmental Protection Agency methods and were reported to range from 2.85E-3 mrem/yr to 6.90E-3 mrem/yr between 2011 and 2018. This would qualify the pond for an exemption under IDAPA 58.01.01.221.02 and 40 CFR Part 61, Subpart H.

The Idaho DEQ appears to be unaware of the extra and excessive releases to the TRA Evaporation Pond at the ATR Complex from years of ongoing, repeated releases from intermittent escape of radioactively-laden resin beads from the Advanced Test Reactor which were not reported as required for airborne effluents in accordance with 40 CFR 61.

The Idaho DEQ, apparently asleep at the wheel for years, allowed the Department of Energy to not include the evaporation pond radiological effluents in stated airborne effluents when the evaporation pond replaced the percolation ponds. The Department of Energy annual surveillance reports did not include any of the liquid waste sent to radioactive waste ponds, prior to 2001.

[7] Idaho Department of Environmental Quality air permit Transmittal letter dated May 29, 2020, Idaho DEQ to U.S. Department of Energy, Facility ID No. 023-00001, U.S. Department of Energy – Idaho Operations Office Permit to Construct Termination, PTC No. 023-00001. (Document file name us-dept0of-energy-inl-023-permit-termination-0520) at the www.idaho.deq.gov website.

Portions of the liquid waste had formerly leached into soil, perched water and groundwater as well as evaporation to the air. But particularly egregious was the omission of the lined evaporation ponds as a source of INL radiological airborne effluent after 1993, between 1993 and 2001. In 2001, the liquid effluent to the lined TRA Evaporation pond was included as a radiological airborne effluent and only then was included in the public offsite dose estimates. The liquid radioactive releases to other ponds appear to be added to airborne effluents now, whether lined or unlined; however, the Department of Energy's annual environmental reports are not necessarily clear in this regard. [8] The ponds are unmonitored sources and what is reported seems to be subject to the prevailing opinion of the era.

But it is clear that no liquid radioactive waste sent to open air percolation ponds or the TRA Evaporation pond was included in INL radiological airborne effluents or the estimated radiation dose to the public prior to 2001. See the Department of Energy annual statements of airborne releases in its annual environmental surveillance reports and see our recent report, *Airborne Radiological Releases from the Idaho National Laboratory and the Increasing Radioactive Contamination in Southeast Idaho,* summarizing DOE's reported INL radiological airborne effluent releases, the Department of Energy's estimated effective whole-body dose from the airborne releases, the levels of radioactive contamination in air, milk, lettuce, wheat and soil from the DOE's environmental surveillance program, with an emphasis on 1990 through 2019. [9]

The Idaho DEQ's May 29, 2020 letter terminating the air permit states "At the time of initial permit issuance on October 26, 1990 the TRA Evaporation pond was subject [sic] the permit requirements of 40 CFR 52.21 due solely to radionuclide emissions. Since that time 40 CFR 52.21 has been amended and radionuclides are no longer subject to those permitting requirements and the requirements originating from that regulation may be rescinded in accordance with 40 CFR 52.21(w)(3)."

Interestingly, according to 40 CFR 52.21, the exemption request granted by the Idaho DEQ should only apply to permits granted prior to July 30, 1987 and should not have been granted to the TRA Evaporation pond licensed in 1990 and put into use in 1993. [10]

In addition, several new radioactive percolation ponds have been added at the Idaho National Laboratory, all deemed to not require an air permit for radiological emissions.

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[8] Department of Energy annual environmental monitoring and surveillance reports have been moved to https://idahoeser.inl.gov/publications.html (in fall of 2021) and had previously been at https://idahoeser.com

[9] Special Report, Environmental Defense Institute, *Airborne Radiological Releases from the Idaho National Laboratory and the Increasing Radioactive Contamination in Southeast Idaho*, December 2021 by Tami Thatcher at http://www.environmental-defense-institute.org/publications/INLcontamination.pdf

[10] 40 CFR 52.21 Prevention of significant deterioration of air quality, (w) Permit rescission. (1) Any permit issued under this section or a prior version of this section shall remain in effect, unless and until it expires under paragraph (s) of this section or is rescinded. (2) Any owner or operator of a stationary source or modification who holds a permit for the source or modification which was issued under 40 CFR 52.21 as in effect on July 30, 1987, or any earlier version of this section, may request that the Administrator rescind the permit or a particular portion of the permit. https://www.govinfo.gov/content/pkg/CFR-2012-title40-vol3/xml/CFR-2012-title40-vol3-part52.xml#seqnum52.21

Examining the Increasing Radioactive Contamination in Southeast Idaho from the Idaho National Laboratory – Special Report by the Environmental Defense Institute

Each year, the Department of Energy's environmental surveillance contractor issues a report summarizing the Department of Energy's estimated radiological airborne effluents and the effective whole-body dose to the public from these releases and the results of air, crop and other analysis of radioactivity. [11]

I have compiled highlights of the DOE's annual surveillance reports with an emphasis on airborne radiological effluents, with an emphasis on the years 1990 through 2019. See our recent report, *Airborne Radiological Releases from the Idaho National Laboratory and the Increasing Radioactive Contamination in Southeast Idaho,* for trends in DOE's reported INL radiological airborne effluent releases, the Department of Energy's estimated effective whole-body dose from the airborne releases, and the levels of radioactive contamination in air, milk, lettuce, wheat and soil from the DOE's environmental surveillance program. [12]

It becomes clear that the Department of Energy underreported its stated INL airborne releases, not only before 1989, but at least until 2001 because none of the radioactive liquids in open-air percolation ponds or lined evaporation ponds were reported as contributing to airborne effluents prior to 2001.

As noted in the previous article, the transition from percolation ponds to lined evaporation ponds at the ATR Complex, for liquid radioactive waste, occurred in 1993. But the lined ponds continued to be reported as liquid effluent and were not included in airborne effluents that are used in estimating the radiation dose to the public until 2001.

The TRA radioactive waste ponds have received enormous quantities of a variety of radionuclides and some of the radionuclides are detected 50 miles away from the INL in communities surrounding the INL, although the Department of Energy does not acknowledge the INL as the source of the contamination.

There is a general downward trend in the curie amounts of radionuclides over the last ten years; however, **the releases over the last twenty years have generally been higher than the releases from 1993 through 1996**, see Figure 1. With the end of spent fuel reprocessing by 1991 and the end of calcining (treating liquid radioactive waste to make a dry, powdery material) by

[11] Department of Energy's contractor for Environmental Monitoring for the Idaho National Laboratory, the Environmental Surveillance, Education and Research (ESER) contractor and surrounding areas at http://idahoeser.com/Publications.html prior to late 2021 and now moved.

[12] Special Report, Environmental Defense Institute, *Airborne Radiological Releases from the Idaho National Laboratory and the Increasing Radioactive Contamination in Southeast Idaho*, December 2021 by Tami Thatcher at http://www.environmental-defense-institute.org/publications/INLcontamination.pdf

mid-2000 (both operations conducted at INTEC), it may come as a surprise to see the escalating radionuclide releases starting by 2001.

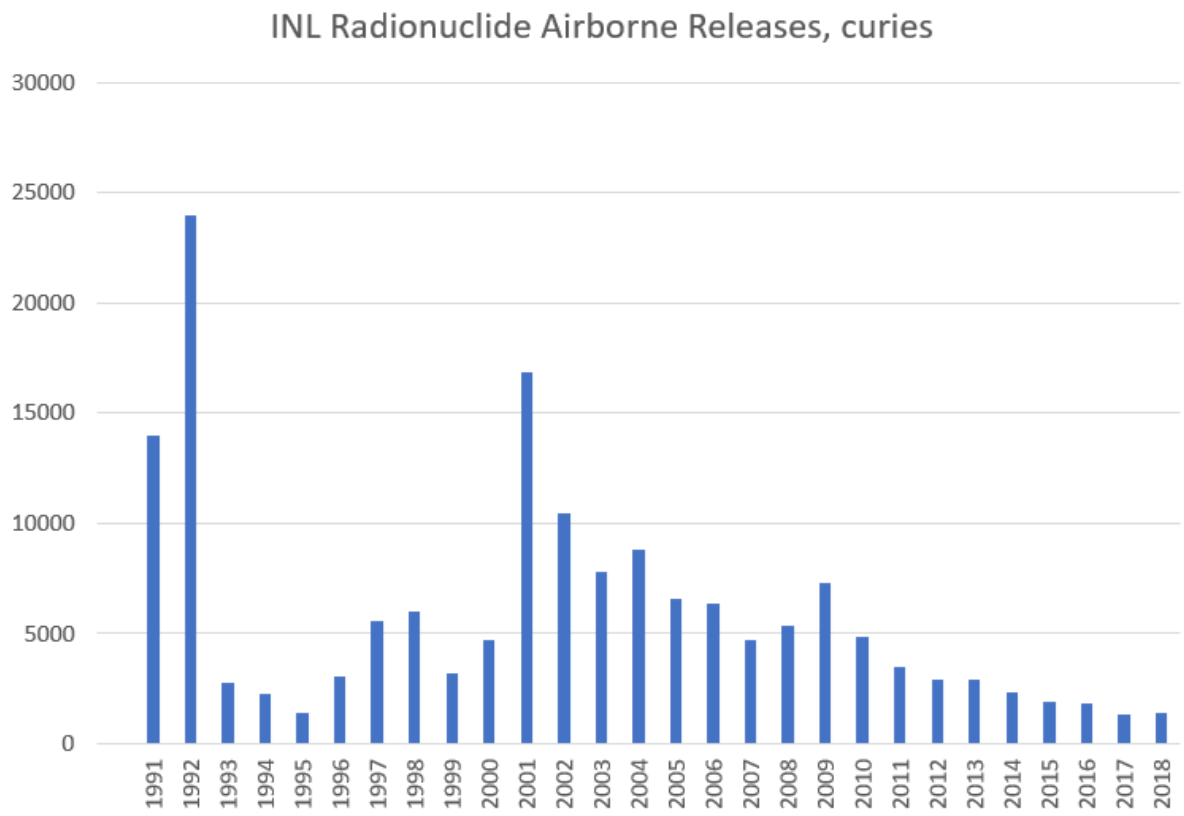

Figure 1. INL Radionuclide Airborne Releases, curies, from 1991 to 2018.

It is important to know that regarding the curie amount for some radionuclides like krypton-85, very large curie amounts yield small radiation doses. And **for other radionuclides like iodine-129, plutonium-239 and americium-241, very small curie amount releases yield large contributions to radiation dose.** The trend in annual estimated effective dose is provided in Figure 2.

As you can see in Figure 2 below, the radiation doses from the Idaho National Laboratory from 2000 to 2019 are generally higher than for the 1990s. **And the radiation dose trend over the last few years is increasing, not decreasing**. This is without accounting for ingestion of radioactive animal tissue, which I have not included here.

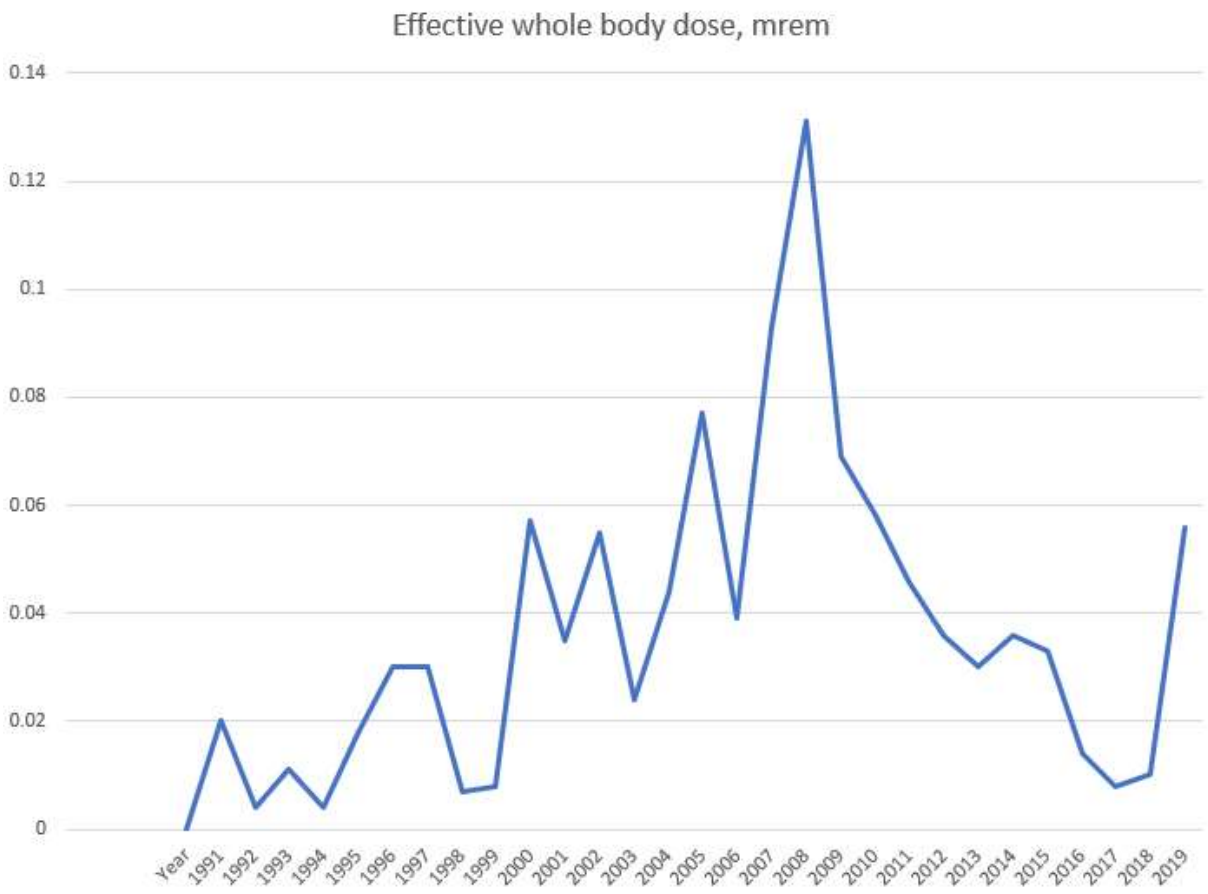

Figure 2. Department of Energy estimated annual effective whole-body dose in millirem from INL airborne releases, 1991 through 2019.

There are a few things to keep in mind whenever these seemingly negligible doses are discussed. First, they are using the effective whole-body dose which waters down the dose and does not reflect the far higher organ absorbed doses and in no way provides a reliable indicator of health risk, not even fatal cancer risk. Second, the organ doses, absorbed doses, need to be presented but are not. The thyroid doses in particular need to be displayed. **The thyroid doses from INL effluents are far above natural background levels**. And third, the 100 millirem per year that the Department of Energy keeps emphasizing as their allowable and safe level was based on faulty models limited almost exclusively to cancer mortality risk and the incorrect presumption by the International Commission on Radiological Protection (ICRP) and others that the risk was 0.0001 fatal cancers per year. This risk was the basis for various regulations selecting 100 mrem per year. But the fatal cancer risk is now admitted by the Department of Energy to be at least 0.0006 fatal cancers per year.

Minimum detectable concentrations (MDCs) specified for the surveillance program reported in Department of Energy's annual surveillance monitoring summary tables for gross alpha activity in air were 0.3 E-15 microcuries per milliliter (uCi/mL) in 1990, increased to 2E-15 uCi/mL in 1995 and 1996, then reduced to 1 E-15 uCi/mL all other years. **Increasing the MDC reduces the detection capability and hides the radioactivity.** In addition to this, in 2003, the DOE's program raised the bar of what it would deem an actual detection of radioactivity. This allows it to dismiss more radiation detections as "not detected."

See Figure 3 and Table 1 for gross alpha radioactivity in air surveillance highlights. There are some weird monitoring results for gross alpha, especially for Dubois. Yet, almost magically, the average values for Dubois are whipped into line.

The Department of Energy derived air concentration for gross alpha is 20 E-15 uCi/mL, which would correspond to a 100 mrem/yr dose if that concentration were sustained all year.

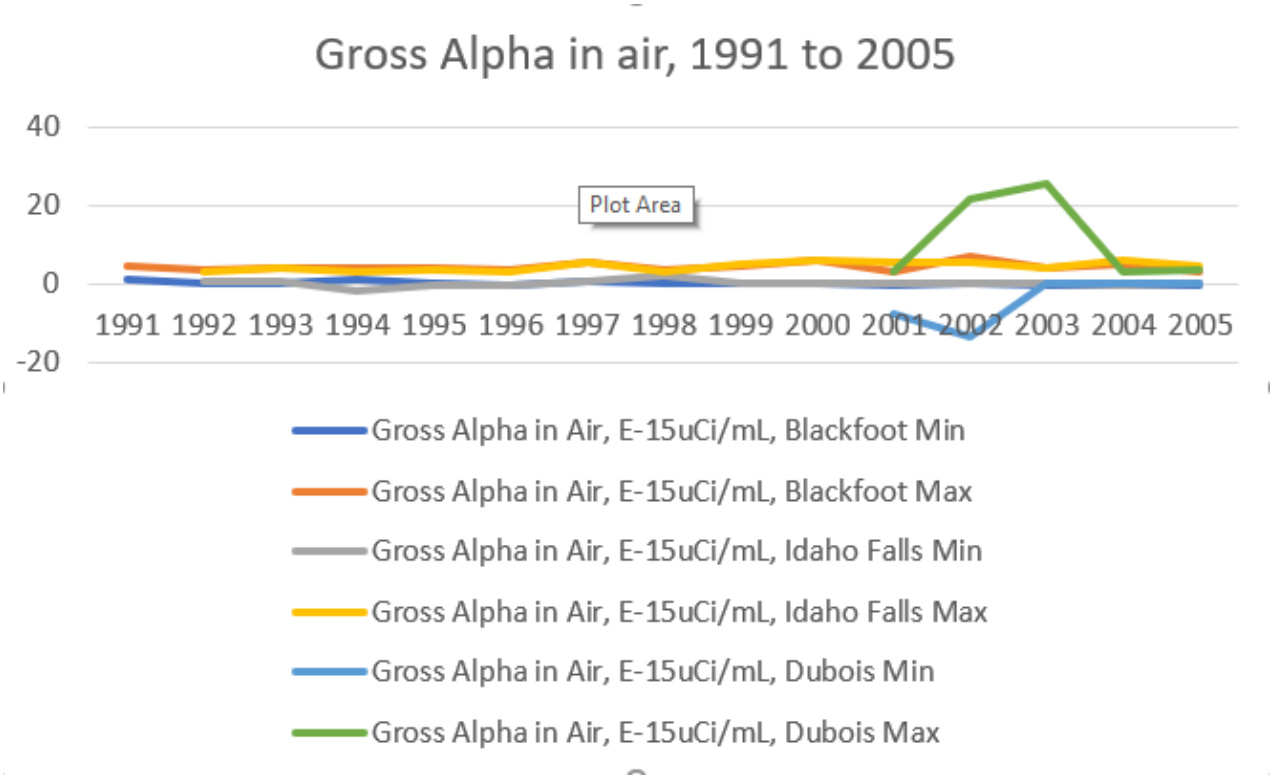

Figure 3. Gross alpha radioactivity in air for Blackfoot, Idaho Falls and Dubois from 1991 to 2005.

Table 1. Gross alpha radioactivity in air for Blackfoot, Idaho Falls and Dubois from 1990 to 2019.

Year	MDC, E-15 uCi/mL	Blackfoot, E-15 uCi/mL			Idaho Falls *, E-15 uCi/mL			Dubois, E-15 uCi/mL		
		Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
1990	0.3	0.9	6.3	2.01	0.5	3.9	1.51			
1991	0.3	1.0	4.3	2.50	0.6	5.2	1.62			
1992	0.3	0.3	3.4	1.81	0.5	3.0	1.54			
1993	0.3	0.1	4.1	1.8	0.6	3.9	1.6			
1994	0.3	0.8	3.9	2.0	-1.7	3.0	0.6			
1995	2	-0.1	3.8	1.6	-0.5	3.3	1.5			
1996	2	-0.2	3.4	1.7	-0.3	3.2	1.4			
1997	1	0.7	5.6	2.1	0.5	5.6	2.0			
1998	1	0.2	3.4	1.7	1.8	2.9	1.5			
1999	1	0.2	4.5	2.0	0.3	4.7	1.8			
2000	1	0.03	5.8	2.0	0.3	6.1	2.0			
2001	1	-0.3	2.9	1.7	0.1	5.5	2.0	-7.8	2.9	1.4
2002	1	-0.05	6.97	1.46	0.18	5.34	1.91	-13.42	21.30	1.49
2003	1	-0.18	3.93	1.66	0.27	4.16	2.10	0.14	25.2	1.58
2004	1	-0.41	4.95	1.30	-0.49	6.16	1.50	0.26	3.0	1.51
2005	1	-0.23	3.01	1.30	0.25	4.53	1.72	-0.17	3.35	1.03
2006	1	0.23	4.63	1.40	0.36	4.53	2.13	-0.26	4.83	1.67
2007	1	0.69	3.5	1.7	0.49	4.0	1.9	0.00	4.1	1.4
2008	1	0.03	3.3	1.4	0.39	3.0	1.6	0.16	2.8	1.3
2009	1	0.65	2.8	1.3	0.70	3.0	1.4	0.25	2.1	1.2
2010	1	0.30	2.7	1.0	0.31	3.1	1.3	0.03	2.4	1.0
2011	1	0.37	4.1	1.2	0.11	2.9	1.3	0.31	3.8	1.0
2012	1	0.29	7.2	1.5	0.30	4.9	1.3	0.45	4.7	1.2
2013	1	0.55	2.0	0.9	0.30	2.5	1.2	0.09	3.0	1.1
2014	1	0.55	2.27	1.1	-0.26	2.04	1.0	0.41	2.16	1.1
2015	1	-0.18	5.3	1.2	-0.05	4.8	1.3	0.30	5.0	1.2
2016	1	-0.44	3.7	1.1	-0.08	4.0	1.1	0.29	3.0	1.0
2017	1	0.32	3.0	1.1	0.36	4.9	1.5	0.33	4.9	0.9
2018	1	0.10	3.1	1.2	-0.09	4.2	1.8	0.14	3.5	1.2
2019	1	0.61	3.0	1.3	0.14	2.9	1.9	0.26	2.3	1.1

Table notes: Data source is the Department of Energy annual environmental surveillance reports which had been at IdahoESER.com until moved by DOE. Units of gross alpha radioactivity in air are in E-15 microcuries/milliliter (E-15 uCi/mL). MDC is minimum detectable concentration stated in the annual program summary which may differ for actual samples. Detection capability is improved as the MDC is decreased; likewise, detection capability is reduced as the MDC is increased. For 1990 through 1993, ANL-W data are given because no Idaho Falls data was available. For 1994, the data were EG&G as stated in the ESER report because there was no ESER data for 1994 for Idaho Falls. No data were reported for gross alpha for Dubois prior to 2001.

Gross beta radioactivity in air from 1990 to 2019, for Blackfoot and Idaho Falls, is shown in Table 2. Some very curious things happen in the monitoring program. The lower the minimum detectable concentration (MDC), the better the detection capability. **In 2000 and 2001 and again in 2004, the minimum detectable concentration that had been as low as 3E-15uCi/mL is increased to 3000E-15uCi/mL.** The wild changes in the selected minimum detectable concentration for gross beta, beginning in 2000, are not stated on the table where the gross beta results are presented. The minimum detectable concentrations (MDCs) are only stated on a program summary table elsewhere in the report.

In 2002, the ESER contractor downshifts the units for gross beta radioactivity so that 100 E-15uCi/mL is stated as 10 E-14uCi/mL. When the change in units happens, it is placed at the bottom of the table in a very tiny font.

See Figure 4 for gross beta radioactivity in air, for Blackfoot and Idaho Falls from 1991 to 2005.

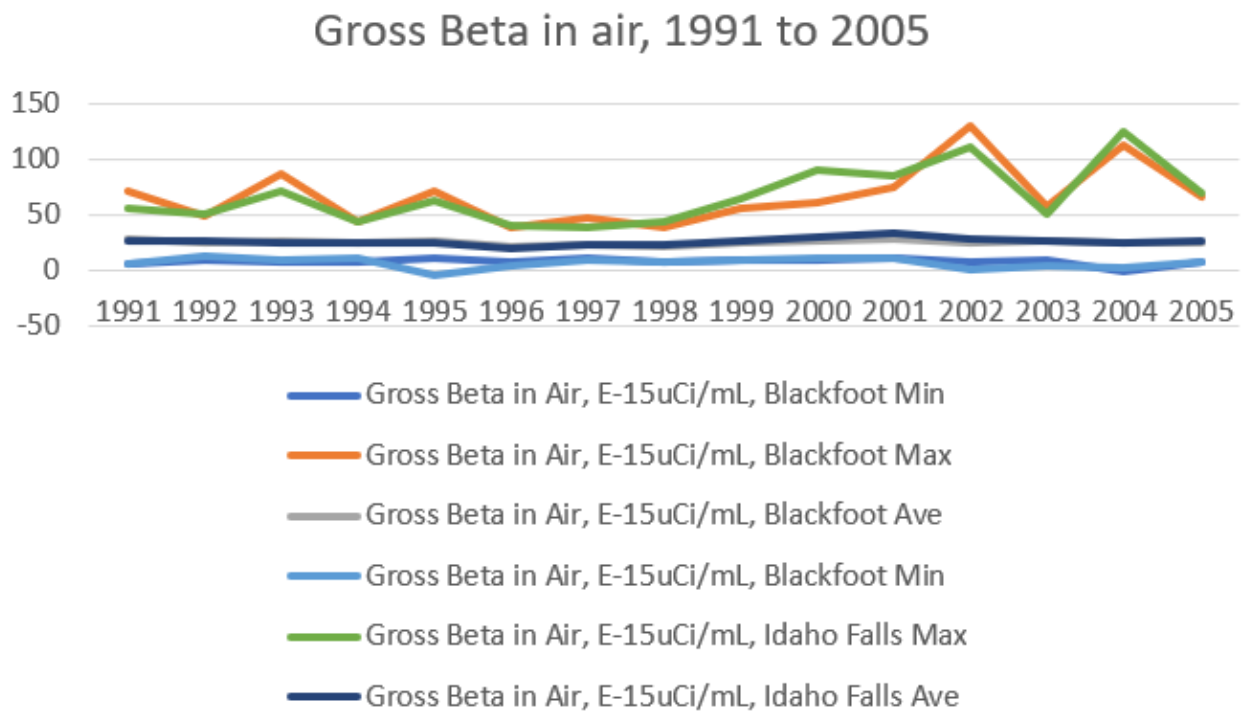

Figure 4. Gross beta radioactivity in air, for Blackfoot and Idaho Falls from 1991 to 2005.

From 1986 through 2000, the curie amounts of radiological liquid effluents were listed separately from the airborne effluents. Yet, even when the main radioactive waste ponds at the Test Reactor Area (TRA), which would be renamed the ATR Complex, installed lined evaporation ponds in 1993, these liquid effluents were still not included in the airborne effluents and were not included in radiation dose estimates to the public.

After 2000, the liquid pond effluents at various facilities were included as airborne effluents and were included in radiation dose estimates to the public.

The annual curie amounts of strontium-90 released by the Idaho National Laboratory are shown in Figure 5. From Figure 5, it can be seen that the curies of strontium-90 released by the INL and used to estimate the radiation dose to the public were significantly understated prior to 2001. Strontium-90 is only one of many radionuclides flushed to open-air ponds, even evaporation ponds, but were ignored in radiation dose estimates to the public, significantly underestimating the effective whole-body radiation doses to the public. Many more radionuclides significant to dose were omitted, but strontium-90 illustrates the problem.

I'll present more highlights from the report *Airborne Radiological Releases from the Idaho National Laboratory and the Increasing Radioactive Contamination in Southeast Idaho* next month.

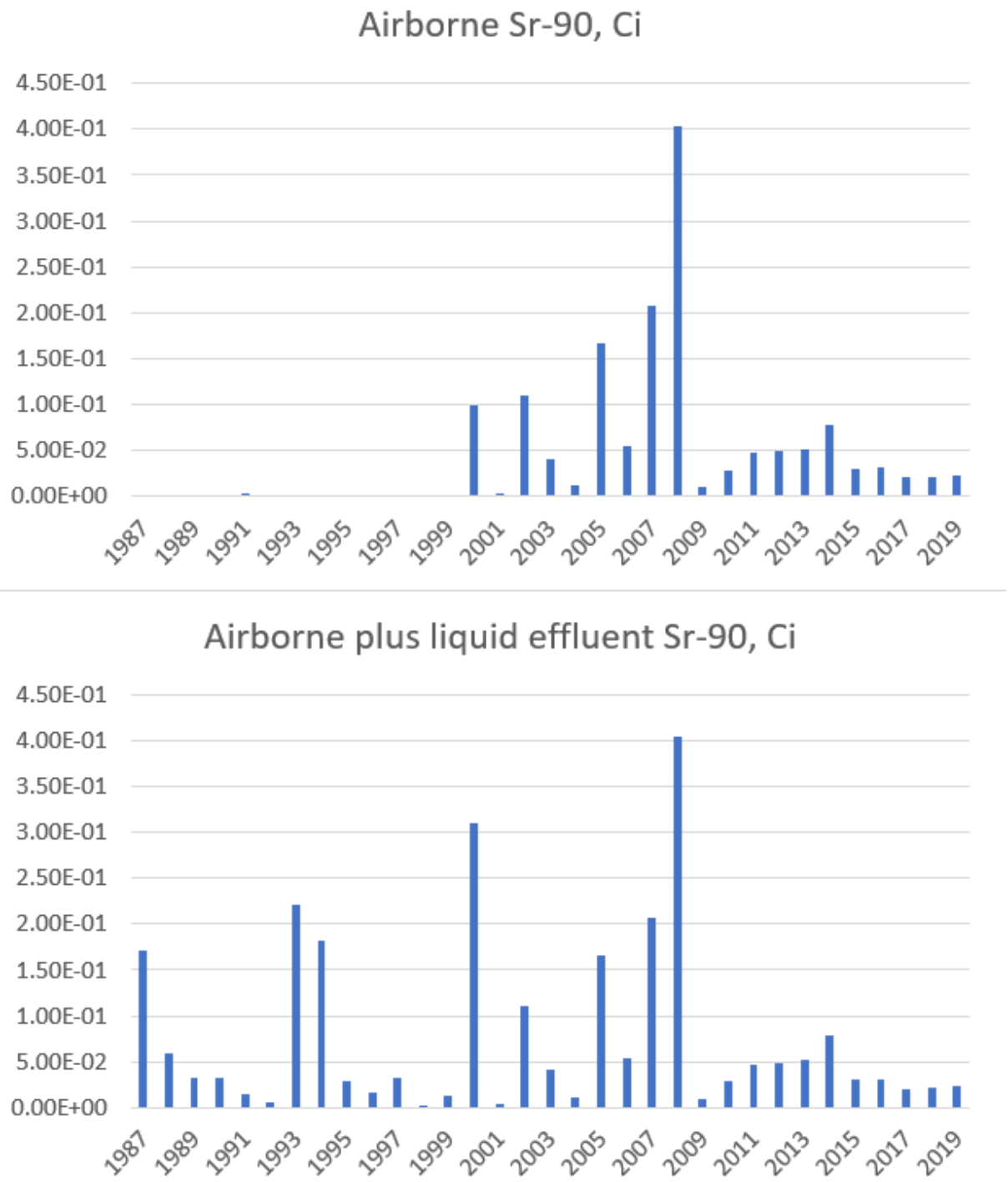

Figure 5. Strontium-90 released by the Department of Energy. Note that prior to 2001, the radiation doses were based only on the stated airborne releases and not the strontium released to the evaporation or percolation ponds.

Department of Defense's Proposed Mobile Microreactors (or Project Pele) Public Comment Submittal

The U.S. Department of Defense is proposing to build, within three years, Prototype Mobile Micoreactors as part of Project Pele. [13] The Department of Defense held two public comment meeting sessions in Fort Hall on October 20. The meeting was held live and was also available for listening or viewing virtually.

The mobile reactors are to be sized for transport by truck or airplane and to provide 1 to 5 megawatts of electrical power. The stated use for the reactors would be at foreign military bases and the goal of the project would involve transport of fresh nuclear fuel and fission-product laden spent nuclear fuel anywhere in the world by rail, ship, truck or airplane. Critics say that the nuclear reactors will be targets and that it is unwise to deploy nuclear reactors in theaters of war. [14]

The draft environmental impact statement for the proposed gas-cooled high temperature nuclear reactors is available for public comment at https://www.mobilemicroreactoreis.com. [15] The draft EIS only covers the testing of a Prototype Mobile Microreactor at the Idaho National Laboratory.

The project description given at the meeting is, as I reduce and paraphrase here from my notes, is as follows:

> The proposed fuel for the gas-cooled reactors would be tri-structural isotopic (TRISO) silicon-carbide coated fuel pellets inside cylindrical fuel compacts using high-assay low-enriched uranium (HALEU) from the National Nuclear Security Agency (NNSA) enriched

[13] Pronunciation of Pele might be "pay lay" or "pea lay."

[14] Associated Press, *The Idaho Falls Post Register*, "US military eyes prototype mobile nuclear reactor in Idaho," September 26, 2021.

[15] The Department of Defense (DoD), acting through the Strategic Capabilities Office (SCO) and with the Department of Energy (DOE) serving as a cooperating agency, announces the availability of the Draft Construction and Demonstration of a Prototype Mobile Microreactor Environmental Impact Statement. SCO is also announcing a public comment period and public hearings to receive comments on the Draft EIS. SCO prepared the Draft EIS to evaluate the potential environmental impacts of alternatives for constructing and operating a prototype mobile microreactor capable of producing 1 to 5 megawatts of electrical power (MWe). The Draft EIS is available at https://www.mobilemicroreactoreis.com. DoD as the prime agency, acting through the SCO and in cooperation with the DOE, invites Federal agencies, state agencies, local governments, Native American tribes, industry, other organizations, and members of the public to review and submit comments on the Draft EIS. Comments will be accepted during the comment period that will extend for 45 days after the U.S. Environmental Protection Agency publishes the Notice of Availability in the Federal Register on September 24, 2021. The comment period will end on Tuesday, November 9, 2021.

Additional information about the project and the public hearings can be found at this website: https://www.mobilemicroreactoreis.com. All comments, whether oral or written, will be considered by DoD as the EIS is finalized and can be emailed to e-mailed to PELE_NEPA@sco.mil.

SCO will host two public hearings regarding the Draft EIS. Meetings will be held in-person and livestreamed for those who are unable to attend the in-person setting… These meetings will be livestreamed and recorded for later playback. The recording of the public hearings will be available at https://www.mobilemicroreactoreis.com after the meeting have been held.

uranium stockpile. The fuel would be fabricated by BWXT in Lynchburg, Virginia. The mobile reactor would be fabricated at either BWXT Advanced Technologies, LLC or X-energy, LLC team facilities.

The Idaho National Laboratory is under the authority of the Department of Energy, is an existing nuclear site, has current reactor operations experience, has sufficient testing space, an established control zone, and adjacent post-irradiation examination (PIE) facilities. The testing would be conducted at the INL's Critical Infrastructure Test Range Complex (CITRC). The used reactor would be stored at the Materials and Fuels Complex, either in the Radioactive Scrap and Waste (below grade) facility or the nearby outdoor above-grade storage, the Outdoor Radioactive Storage Area (ORSA). Radioactive wastes would be dispositioned using "existing processes" or stored onsite.

The final EIS is stated to be expected in early 2022, and the Record of Decision by spring of 2022. (End of paraphrase.)

Project Pele's Mobile Microreactor project is a horrible idea. Transporting the spent fuel from a military mobile microreactor, **if deployed to a military base somewhere around the globe, puts every country in its transportation path at risk of an accident and at risk of becoming an "exclusion zone" where no one can live**. It puts troops and people around the globe at risk. The military knows this and probably would only deploy the reactors to some place like Alaska, if anywhere. The project is really a way to funnel government money to these reactor developers.

The Department of Energy emphasizes that its regulations allow it to dose the public with 100 mrem/yr. They don't mention that in the 1970s when that annual limit was created, it was assumed that the fatal cancer risk from radiation exposure was 0.0001 fatal cancers per rem. Even as the DOE accepts that the fatal cancer risk is at least 6 times higher, at 0.0006 fatal cancers per rem, [16] which would imply a limit of 16 mrem/yr, the DOE retains the same 100 mrem/yr limit.

The military's proposed Project Pele Mobile Microreactor project is ill-conceived, puts troops, the public and the environment at risk, wastes precious resources, and bases its contrived safety case on biased assumptions that they don't wish to disclose. The radiological releases from a 10 megawatt-thermal reactor could be far higher than the draft EIS discusses. The risks and costs associated with the management of its spent fuel are also very important and dismissed with vague and misleading statements that ii would be addressed by existing processes. The draft EIS is misleading, lacks transparency, and fails to protect people or the environment. I oppose the Project Pele Mobile Microreactor project.

[16] Project Pele draft EIS, page 4-36 states that a risk factor of 0.0006 LCFs per rem (person-rem) was used in this EIS to estimate risk impacts due to radiation doses from normal operations and accidents.

See our public comment submittals on Project Pele on the home page of Environmental-Defense-Institute.org. [17] [18]

*Articles by Tami Thatcher for December 2021. The article was edited on December 7 for minor editorial corrections and the addition of **bolding** to some statements.*

[17] Public Comment Submittal on the U.S. Department of Defense Draft Construction and Demonstration of a prototype Mobile Microreactor (Project Pele) Environmental Impact Statement (Issued September 2021), November 7 2021, by Chuck Broscious, Environmental Defense Institute at http://www.environmental-defense-institute.org/publications/EDIComPele2021.pdf

[18] Public Comment Submittal on the U.S. Department of Defense Draft Construction and Demonstration of a prototype Mobile Microreactor (Project Pele) Environmental Impact Statement (Issued September 2021), November 6 2021, by Tami Thatcher, at http://www.environmental-defense-institute.org/publications/Pele2021commentdraftEIS.pdf