

Environmental Defense Institute

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Proposed rule to strengthen the science used in regulations issued by EPA

Agency: Environmental Protection Agency (EPA)

Docket ID: EPA-HQ-OA-2018-0259 1k2-94w0-gsxc

RIN: 2080-AA14

CFR: 40 CFR Part 30

Federal Register Number: 2018-09078

Plan to Increase Access to Results of EPA-Funded Scientific Research;

EPA Open Government Plan 4.0;

Open Data Implementation Plan; EPA's Scientific Integrity Policy;

Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency.

August 16, 2018

To Whom It May Concern,

Thank you for the opportunity to comment on EPA's proposed rule to strengthen the science used in regulations issued by EPA. I am Chuck Broschius President of the Board of Environmental Defense Institute, Inc. (EDI), and herein offer attached comments on this proposed rule on behalf of EDI. I would like to raise concerns and inform you of new information regarding the impact this new proposed rule to strengthen the science used in regulations issued by EPA will have on Idaho. EDI points out that the EPA's proposed rule will not do what it implies – that it will not strength the science used in regulation.

EDI is a non-profit organization with the mission statement of advocating for sound environmental policy at the DOE's Idaho National Laboratory. EDI's website: www.environmental-defense-institute.org is a public record of our environmental advocacy on Department of Energy's Idaho National Laboratory issues. EDI's monthly newsletter is widely distributed and published on our website along with major reports we generate. EPA/INL related newsletter articles are attached below. Please see below for additional details and pertinent literature references in our Comments for the Record.

Respectfully submitted

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Comments for the record on EPA's Proposed Rule

“The mission of EPA is to protect human health and the environment. EPA works to ensure that: a. Federal laws protecting human health and the environment are administered and enforced fairly, effectively and as Congress intended and; b. contaminated lands and toxic sites are cleaned up by potentially responsible parties and revitalized.”¹ EPA has strayed very far its stated “Mission” with its regulatory enforcement at federal facilities.

Environmental Defense Institute (EDI) has been engaged with EPA regulatory oversight of Department of Energy (DOE) operations² at the Idaho National Laboratory (INL)³ near Idaho Falls ID since 1990. EPA's⁴ regulatory role at INL is through CERCLA, RCRA, and Clean Air ACT monitoring along with the State of Idaho's Department of Environmental Quality (IDEQ) INL Oversight Program.⁵ Most of INL CERCLA/RCRA/Federal Facility Compliance Act (FFCA) regulatory policy decisions are reached through EPA Region 10's administrative rulings that otherwise would be illegal under strict enforcement of applicable statutes.^{6 7}

This joint EPA/IDEQ policy lead to massive hazardous/radioactive waste dumping in unlined near surface areas in a flood zone visited by numerous inundations causing contaminate migration into the underlying aquifer.⁸ Despite being designated a CERCLA remediation area, DOE/INL will continue to dump radioactive waste in the same dump through 2020 or longer. Access to environmental monitoring data on INL operations through DOE/EPA/IDEQ continues to be restricted through bogus national security reasons. One DOE FOIA estimate for an EDI request was \$1.2 million that was later disclosed to be the requirement for a budget line item and unrelated to actual cost.⁹

EPA's claims this new policy is a way to increase transparency and enable the public to double-check research underpinning environmental authority. The Environmental Defense Institute (EDI) Inc. and Keep Yellowstone Nuclear Free (KYNF) Inc. ("Petitioners") requested¹⁰ that the

¹ <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>

² **DOE:** The United States Department of Energy, including headquarters (DOE-HQ), the Idaho Operations Office (DOE-ID), the Argonne Group - West (ARG-W) of the Chicago Operations Office (DOE-CH), the Idaho Branch Office - Naval Reactors (IBO), and any of DOE's contractors.

³ **INL Site or Site:** The site described in 54 Federal Register 48184 (November 21, 1989).

⁴ **EPA:** The United States Environmental Protection Agency, including Region 10 **HWMA:** The Idaho Hazardous Waste Management Act of 1983, as amended, Idaho Code 18 §§ 39-4401 to 4432 and its implementing rules in IDAPA 16.01.05.000 to .05.999.

⁵ **Department or IDHW:** The State of Idaho Department of Health and Welfare, **Division of Environmental Quality or DEQ:** The Idaho Department of Health and Welfare, Division of Environmental Quality.

⁶ **LDR Mixed Waste:** Mixed waste that is restricted from one or more methods of land disposal or storage under IDAPA § 16.01.05.011 (RCRA, 42 U.S.C. § 6924; 40 C.F.R. Part 268).

⁷ **HWMA:** The Idaho Hazardous Waste Management Act of 1983, as amended, Idaho Code 18 §§ 39-4401 to 4432 and its implementing rules in IDAPA 16.01.05.000 to .05.999.

⁸ Draft Idaho National Engineering Laboratory EIS Environmental Restoration Program Assessment May 14, 1993, Pg. 4.7-15

⁹ Broscius, C., Citizens Guide to INL. <http://www.environmental-defense-institute.org/publications/>

¹⁰ Broscius, C., Wollon, M., March 13, 2007 letter to Bill Roderick Acting Inspector General U. S. Environmental Protection Agency Office of Inspector General 1200 Pennsylvania Avenue, NW. (2410T) Washington, DC 20460.

U.S. Environmental Protection Agency Office of Inspector General conduct a formal investigation of EPA Region-10 February 26 2007 final ruling on our 11/9/06 petition opposing EPA's Idaho Authorization of State Hazardous Waste Management Program Revision.¹¹ Petitioners believe that EPA Region-10 ruling offered inadequate and inconclusive legal and regulatory justification to substantiate their ruling to re-authorize Idaho Department of Environmental Quality (IDEQ). Petitioners offered in Attachment A, our joint comments to IDEQ on their "Intent to Permit" a new mixed hazardous and radioactive treatment operation. These comments articulate significant continuing deficiencies in IDEQ's RCRA/HWMA current permitting process stated in:

1. Preliminary Comments on U.S. Department of Energy Class 3 Modified Permit to the Volume 14 for the Idaho Nuclear Technology and Engineering Center (INTEC) at the Idaho National Laboratory, Permit Number EPA ID No. ID48900089521 INTEC Liquid Waste Management System and the Integrated Waste Treatment Unit. IDEQ Public Notice of Intent 1/26/07 to approve Class 3 Permit Modifications of Volume 14, Docket Number 10HW-0701.
2. EPA Region 10 relies on CFR 270.72 "Subpart G Interim Status, Changes During Interim Status" in its ruling. However, EPA fails to document how these new INL operations were under Interim Status. Moreover, IDEQ's "Intent to Permit" IWTU contains no apparent reference to Interim Status and only characterizes it as a "Partial Permit."¹²

EDI requested (submitted August 8, 2000 and September 18, 2000) for EPA and DOE Inspector Generals to conduct a full scale investigation of the State of Idaho Department of Environmental Quality, EPA Region 10, and Department of Energy Idaho Operations Office, concerning Resource Conservation Recovery Act, Toxic Substances Control Act, and Clean Air Act permitting procedures at the US Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL) now called INL. The issues included:

1. Notice of Intent to Sue DOE over DOE's failure to comply with federal laws in operation of the New Waste Calcine Facility incinerator, April 11, 2000.
2. Notice of Intent to Sue the State of Idaho and EPA's over failure to comply with federal laws in the operation of the New Waste Calcine Facility incinerator, May 5, 2000.
3. Request for Investigation by EPA and DOE Inspector Generals over failure to comply with federal laws in the unpermitted operation of hazardous waste facilities under extended "interim status," August 8, 2000
4. Notice of Intent to Sue DOE, State of Idaho, and EPA over DOE's failure to comply with federal laws in operation of WERF incinerator, September 6, 2000
5. Request for full scale investigation to EPA and DOE Inspector Generals over unpermitted RCRA operations at the Specific Manufacturing Capacity operation at INEEL, September 18, 2000
6. Petition to State of Idaho for declaratory ruling; imposition of financial sanctions against DOE for failure to furnish a New Waste Calciner Facility incinerator RCRA Closure Plan, September 19, 2000.
7. Complaint to State of Idaho over non-compliance of unpermitted RCRA operations at the Specific Manufacturing Capacity operations at INEEL, September 23, 2000.¹³

EPA's CERCLA/RCRA actions at INL include a regular 5-yr. updating on the Site Cleanup Plan that lays out the various programs at the designated 10 Operable Units that cover the Idaho

¹¹ Janis Hastings, Associate Director, Office of Air, Waste, and Toxics, U.S. EPA Region 10, 1/26/07.

¹² Robert Bullock, Hazardous Waste Permit Coordinator, Idaho Department of Environmental Quality, 1/26/07, Dear Citizen Letter, Public Notice: Intent to Approve a Permit Modification Request.

¹³ David McCoy, Esq. RE: DOE Inspector General Request for Investigation September 29, 2000, Data Base Enter Submitted via mail (ray.madden@hq.doe.gov) TO: Gregory Friedman C/O Ray Madden Inspector General U. S. Department of Energy 1000 Independence Avenue SW Washington, DC 20585 FROM PETITIONERS: Environmental Defense Institute, Inc. (primary) Keep Yellowstone Nuclear Free, Inc.

National Laboratory Site Treatment Plan INL-STP Revision 36A November 2016 that states in pertinent:

“The United States Department of Energy (DOE) is required to prepare a plan for developing treatment capacities and technologies for each facility at which DOE generates or stores mixed waste (MW), pursuant to Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 USC 6939c (b), as amended by Section 105(b) of the Federal Facility Compliance Act, Pub. L. 102-386 (1992) (FFC Act). Upon submission of the Idaho National Engineering Laboratory (INL) plan to the appropriate regulatory agency, the Idaho Department of Health and Welfare (IDHW), Division of Environmental Quality (DEQ), the FFC Act requires the DEQ to solicit and consider public comments, and approve, approve with modification, or disapprove the plan within six months. The regulatory agency is to consult with the U.S. Environmental Protection Agency (EPA) and any state in which a facility affected by the plan is located. Upon approval of a plan, the regulatory agency must issue an order requiring compliance with the approved plan.”¹⁴

EPA continues to fail at fulfilling the requirements of the FFC Act, RCRA, HWMA and CERCLA

1. CERCLA ruling on INL Site Treatment Plan:

“This STP is the statutorily required document described in the FFC Act Section 105(b) as a "plan for developing treatment capacities and technologies" to treat the mixed waste at INL pursuant to EPA standards promulgated pursuant to Section 3004(m) of RCRA. This STP is also discussed by DOE in the Publication Schedule for Submitting Plans for Treating Mixed Waste Generated or Stored at Each Site as Required by the Federal Facility Compliance Act of 1992, 58 Federal Register 17875 (April 6, 1993). This STP provides overall schedules with milestones and planning dates for achieving compliance with LDR, a general framework for establishment and review of milestones and planning dates and the conversion of planning dates into milestones, and other provisions for implementing the DEQ approved STP enforced under the Consent Order.”¹⁵

“**1.4.2** This STP and Consent Order fulfill the requirements contained in the FFC Act, RCRA Section 3021, and the Idaho Hazardous Waste Management Act (HWMA). Storage of covered waste at INL, pending the development of treatment capacities and technologies and completion of LDR requirements pursuant to the STP, shall be considered in compliance with this STP, Consent Order, and applicable RCRA and HWMA requirements.”¹⁶

DOE/INL with IDEQ and EPA Region 10 Administrator concurrence has allowed the flagrant violation of LDR at the Radioactive Waste Management Complex Subsurface Disposal Area.¹⁷ EDI report lays out the Department of Energy’s Idaho National Laboratory Radioactive Waste Management Complex/Subsurface Disposal Area CERCLA cleanup process and the policy decisions that went into how DOE is compromising Idaho’s water future. How did we get to where we are today and why DOE is leaving hazardous nuclear waste buried at the INL and calling it “clean enough”? DOE’s decision to leave 90% of the buried waste in the dump and violate the 1995 Settlement Agreement and Federal Court Consent Order with the State of Idaho

¹⁴ Idaho National Laboratory Site Treatment Plan, November 2016, INL-STP Revision 36A, Prepared for the U.S. Department of Energy DOE Idaho Operations Office, Section 1.4.1, Hereinafter INL-STP.

Site Treatment Plan or STP: This plan for developing mixed waste treatment technologies and capacities for INL covered waste, as approved by DEQ pursuant to the FFC Act of 1992, Pub. L. No. 102-386, 106 Stat. 1505 (1992).

¹⁵ INL-STP, Section 1.4.1.

¹⁶ INL-STP, Section 1.4.2.

¹⁷ Broscius, C. Review CERCLA Review of the Mixed Hazardous Radioactive CERCLA Waste Cleanup Policy at the Radioactive Waste Management Complex Subsurface Disposal Area Department of Energy’s Idaho National Laboratory.
<http://www.environmental-defense-institute.org/publications/RWMCERCLA4.pdf>

is a crucial threat to our states' safe water future by failing its commitment to cleanup its nearly 70 year nuclear legacy waste. DOE's a priority to spent \$1 trillion on building new nuclear bombs rather than spent \$ ~600 million to cleanup the huge environmental disaster from the last bomb legacy represents the value the federal government places on Idaho's water future that is unconscionable by any human rights standards.

This report also reviews both the policy setting Environmental Supplement Analysis for the Treatment of Transuranic Waste and the Record of Decision for the RWMC because they both cover the same policy area and contain the same fundamental flaws related to the DOE's mismanagement of the RWMC. EDI's primary focus is on both the existing waste "Accelerated Waste Retrieval" problems (illegally leaving mixed hazardous/radioactive waste in-place) at the RWMC/SDA and the importation of additional TRU waste to INL from other DOE nuclear sites. At risk is the underlying Snake River sole source aquifer that most of Idahoans are and will be dependent on for millennia. Radioactive and hazardous waste continues to migrate from this buried waste contaminating the aquifer; so without a comprehensive cleanup required by law DOE is compromising Idaho's future in order to save money for more bombs. Mixed radioactive waste is the most hazardous and biologically dangerous material in the world. When DOE wants to treat it with less environmental protection (when miniscule particles can cause death) than garbage, the public must take action to ensure an appropriately adequate cleanup even when current state leadership no longer cares.

DOE continues to demonstrate a consistent pattern of violations of environmental laws, hazardous waste regulations and the Federal Court Consent Order's 1995 Settlement Agreement. The following are examples:

1. Changed the definition of what waste is to be removed from the RWMC from "all TRU and Low-level Alpha" (aLLW) * (because of the 1970 unilateral change of definition of TRU to > 100 nCi/g) to only "stored TRU" and continuing to allow aLLW to remain buried at the SDA stipulated in the 1995 Settlement Agreement and Consent Order for removal;
2. Even the aLLW "stored" on Pad A originally classified in as TRU (>10 nCi/g) * is left in place;
3. Offers no independent data confirming what waste left in the SDA is not TRU and that the alpha detection methods used in ARPS can accurately detect TRU;
4. Violates Land Disposal Regulations (LDR) in: IDAPA 58.01.05.009 and 58.01.05.011; 40 CFR 265.13 and 268.7; and NRC under 10 CFR part 61 to include:
 - a. Leaving SDA surface waste pile on Pad A waste in place;
 - b. Leaving 90% of SDA buried mixed hazardous/radioactive waste in place;
 - c. Once a waste dump is remediated, all the contaminated material –including soil – is considered a new waste and thus must be managed according to RCRA/LDR/NRC regulations.
5. Continues SDA burial LLW in a flood zone in violation of Land Disposal Regulations;
6. Use economic leverage as largest employer to capture State leadership, EPA and IDEQ to compromise policy and commitments to former Governors' Andrus, Batt and the public to cleanup buried nuclear waste that continues to contaminate the underling Snake River Aquifer.

* Alpha Low-Level Waste [aLLW] refers to previously disposed of radioactive wastes having a concentration of transuranic (TRU) radionuclides between 0 and 10 nCi/g. They may include some wastes that contain hazardous constituents regulated under RCRA and Toxic Substances Control Act (TSCA), i.e., mixed waste.

“The STP provides overall schedules for achieving compliance with LDR requirements for mixed wastes at INL. The schedules include those activities required to bring existing waste treatment facilities or technologies into operation, and those required to develop new facilities and capacity for treatment. The STP schedules show milestones and planning dates for treatment technologies and facilities for covered wastes.”

DOE has consistently missed cleanup milestones¹⁸ which were the primary driver for Governors’ Andrus and Batt to initiate Federal Court Consent Order to force compliance. We will list these missed milestones later. SDA Active Low-level Waste Disposal Facility (Pits 17 to 20) will continue to receive waste through 2020 despite the fact that it does not qualify under EPA regulations as a city dump. The legal frame work is:

“Ultimately, the entire SDA (including the [Active Low-level Waste disposal Facility]ALLWDF) will be closed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC § 9601 et seq.), in accordance with the Record of Decision (ROD) for the RWMC Operable Unit (OU) 7-13/14 (DOE-ID 2008b). Until final closure occurs, DOE is responsible for self-regulation of the ALLWDF, in accordance with the Atomic Energy Act (42 USC § 2011 et seq.) and management requirements within DOE O 435.1 Chg. 1, for ongoing waste disposal operations through final closure, including interim closure procedures.”¹⁹ [emphasis added]

“2.2.1.2 Milestones are fixed, firm, and enforceable dates as set forth in the STP. Milestones 2.2.1.227 correspond to the categories of milestones set forth below in Section 2.2.3. Extensions or Revisions to milestones are subject to approval, approval with modifications, or disapproval by the DEQ according to the process and framework set forth in this STP. Milestones are set based on planning dates, in accordance with the process in Section 2.2.2.”²⁰

EPA new rule “document proposes a regulation intended to strengthen the transparency of EPA regulatory science. The proposed regulation provides that when EPA develops regulations, including regulations for which the public is likely to bear the cost of compliance, with regard to those scientific studies that are pivotal to the action being taken, EPA should ensure that the data underlying those are publicly available in a manner sufficient for independent validation.”²¹

EPA fails to admit that its decade’s long failure to enforce “regulations for which the public is likely to bear the cost of compliance” is huge. But of course, it was not just the EPA acting in a criminally negligent manner. The movie "Atomic Homefront" points to state and federal political leaders who failed to help, and various agencies - all failing to protect people, failing to be honest, at all federal facilities and Superfund sites.

The new EPA rule would require the agency to use only studies in which the underlying data are available for public scrutiny when formulating new “significant” regulations, which typically are regulations estimated to impose costs of \$100 million or more.

Specifically, the proposed rule says that EPA is seeking transparency for “the dose response data and models that underlie what we are calling ‘pivotal regulatory science.’” The agency does not

¹⁸ Tami Thatcher, *Idaho To Miss Important Idaho Settlement Agreement Milestones*, Environmental Defense Institute, News on Environmental Health and Safety Issues June 2018, Volume 29, Number 6.

¹⁹ RPT-1267, Annual Performance Assessment and Composite Analysis Review for the Active Low-Level Waste Disposal Facility at the RWMC FY 2013, RPT-1267.

²⁰ INL-STP Section 2.2.2

²¹ Docket ID No. EPA-HQ-OA-2018-0259, at <https://www.regulations.gov>.

define pivotal regulatory science, but says it could include studies that “are critical to the calculation of a final regulatory standard or level, or to the quantified costs, benefits, risks, and other impacts on which a final regulation is based.” It isn’t that EPA messes with the doses. It’s that the EPA believes the official radiation models which underestimate the harm. The EPA assumes people aren’t harmed and aren’t getting cancer from the Formerly Utilized Sites Remedial Action Program (FUSRAP) exposures. ²²

The various vintages of International Commission for Radiation Protection (ICRP) models are relied upon by U.S. agencies. The methods for estimating radiation dose and the limits for radiation dose vary somewhat among DOE, NRC, and EPA. There are two aspects: (1) how the radiation dose is estimated and (2) how the health harm (cancer risk) is estimated. Both of these aspects for any U.S. agency rely heavily on the ICRP methods and models which do evolve over time. ²³

This explains the relationship of the Federal Guidance Series reports, now overseen by the EPA such as FGR 11, 12 and 13; and ICRP 26/30, 38 and ICRP 60. Basically the EPA’s Federal Guidance Reports 11, 12 and 13 rely on and use ICRP reports. The cancer risk from a particular radiation dose is based on ICRP 60 (1990).

The overall approach for internal radiation is based on the physics (how much energy) is deposited in the body, rather than how much it actually harms the body. The risk coefficients [called “dose conversion factors” or “dose coefficients” dictate how much cancer risk for a unit of radiation dose and these are still wrong - still underestimate the cancer harm and ignores

²² [EDI April 2018 Newsletter - Environmental Defense Institute](#)

www.environmental-defense-institute.org/publications/News.18.April.pdf

Apr 8, 2018 - nuclear FUSRAP waste is sent to Idaho. Critical Nurse Staffing, LLC presented “Atomic Homefront,” a documentary about the uranium ...

[PDF] [EDI May 2018 Newsletter - Environmental Defense Institute](#)

www.environmental-defense-institute.org/publications/News.18.May.pdf

What the FUSRAP are These Radioactive Waste Dumps. Doing in Idaho? A program called the “Formerly Utilized Sites Remedial Action Program” (FUSRAP) ...

[PDF] [The West Lake Landfill - Institute for Policy Studies](#)

www.environmental-defense-institute.org/.../Alvarez%20West%20Lake%20Draft%20...

by R Alvarez - 2013 - [Related articles](#) Nov 21, 2013 - responsibilities under the Formerly Utilized Sites Remedial Action Program (FUSRAP) managed by the U.S. Army Corps of Engineers and the ...

²³ Nov 20, 2017 - Update on New Federal Guidance for Dose and Risk Assessment ... Report 13 Cancer Risk Coefficients 1999 (EPA) ... Report 10 Radioactive Concentration Guides (out of date) 1984 (FRC) ... FGR 11 dosimetry is out of date (based on ICRP 26 and 30 from 1976); but still needed to comply with some US ... [This link to an EPA PowerPoint presentation is helpful: The Role of Federal Guidance in Radiation Protection] llwforum.org/wp-content/.../20.-Michael-Boyd-Fall-2017-LLWF-10.17.17-AM.ppt

Nov 20, 2017 - Update on New Federal Guidance for Dose and Risk Assessment ... Report 13 Cancer Risk Coefficients 1999 (EPA) ... Report 10 Radioactive Concentration Guides (out of date) 1984 (FRC) ... FGR 11 dosimetry is out of date (based on ICRP 26 and 30 from 1976); but still needed to comply with some US ...

other health harm such as heart disease and genetic effects and is still based on the ICRP models.

So, while the EPA describes that their radiation dose and risk modeling is, they still rely heavily on the ICRP models that are universally considered by independent researchers to be out dated. Generally, the EPA relies on ICRP models for estimation of (1) the radiation dose and (2) the cancer risk from a particular radiation dose. [This link describes the EPA's radiation modeling <https://www.epa.gov/radiation/tools-calculating-radiation-dose-and-risk>] There are certainly many devils in the details that make ICRP/EPA methodology opaque to the general public. The Department of Energy also relies on the ICRP models for estimation of (1) the radiation dose and (2) the cancer risk from a particular radiation dose.

The regulatory standards for dose limits to a radiation worker and to the public can be set differently in different regulations. There are regulations for NRC, EPA, DOE, and the setting of drinking water standards, for example, set by EPA (and also by DOE on DOE sites although EPA standards are used for comparison, DOE regulations can dictate higher allowed levels of contamination). "The dose-based regulatory structure for radiation protection in the United States today is complicated. The U.S. Environmental Protection Agency (EPA) and the NRC still have regulations in place that require use of the ICRP 2 methodology, but for the most part their dose-based regulations follow ICRP 26. The Occupational Safety and Health Administration's (OSHA) radiation protection regulations continue to be based on ICRP 2. The Department of Energy has recently adopted an ICRP 60 approach for calculating the doses to its workers. Europe, along with most other countries with radiation protection programs, has adopted ICRP 60. It is expected that these countries will now begin the process of adopting ICRP 103."²⁴

So, by official models, I am referring to the various U.S. agencies that may have various vintages of approaches but all of the approaches come down to some vintage of International Commission on Radiological Protection (ICRP). And as there are evolutions in the ICRP models, the adoption of a particular ICRP model can be delayed depending on pressure from industry lobbying groups.

The ICRP radiation dose limit for workers, of 2 rem/yr., has never been adopted by the U.S. But the NRC, DOE, EPA do rely on various aspects of ICRP radiation dose modeling. The harm, typically limited to the cancer risk from the estimated radiation dose, is from "official" acceptance of assumptions plus the manipulated study of Japan's bombing survivors, the Life Span Studies.

EPA relies on ICRP Radiation Model Inadequacies

"The officially-sanctioned International Commission of Radiological Protection (ICRP) model masquerades as being scientifically based. It is being used to underestimate cancer and other

²⁴ This link helps explain the radiation models issue:
<http://www.wmsym.org/archives/2009/pdfs/9444.pdf>

detrimental health risks of radiation exposure, misrepresent nuclear accident risks, dismiss actual health findings, and excuse inadequate monitoring of the contamination levels.

“After millions of dollars spent every year since the 1940s to study radiation health effects, you might have thought there would be no doubt that ionizing radiation, even at low doses, involves risks to health, including increased likelihood of cancers, leukemia and genetic effects. Prominent scientific bodies have concluded, repeatedly, that there is no threshold: even a low dose causes some increased risk, and higher doses cause more risk. A single photon or a single high-speed particle can cause unrepairable damage to our cells, including genetic damage.

“The risk of cancer from radiation exposure doses, as presented by the industry, does make the risk of cancer appear relatively small in many cases - the problem is that these predictions are based on biased studies and the risks are higher than the widely accepted International Commission on Radiological Protection (ICRP) model predicts, at least by a factor of 100.

“To understand the damage from low radiation doses, begin with Dr. Alice Stewart's 1956 Oxford survey. The exposures in Stewart's study were less than one track per nucleus—and doses don't get lower than that. The Oxford study results showed that x-rays to children in utero increased the likelihood of death by childhood cancer and leukemia.

“Stewart's result was controversial for years because neither the nuclear industry nor the medical industry wanted to accept her findings. But several subsequent studies verified her results.

“The European Committee on Radiation Risk (ECRR) was formed in 1998 because of criticisms of the ICRP risk models. The ECRR consists of scientists and risk specialists from within Europe but takes evidence from experts worldwide. It presented its findings in 2003 and again in 2010. The ECRR describes important flaws in the ICRP risk model and provides new weighting factors to modify the ICRP model.

“Several accessible information resources include:

[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.](#)

[Gofman, John W., M.D., Ph.D., "Radiation-Induced Cancer from Low-Dose Exposure: An Independent Analysis, 1990, Committee for Nuclear Responsibility, Inc.](#)

[Kohnlein, W, PhD., and Nussbaum, R. H., Ph.D., "False Alarm or Public Health Hazard?: Chronic Low-Dose External Radiation Exposure, Medicine and Global Survival, January 1998, Vol. 5, No. 1.](#)

Radiation Workers

“The energy worker compensation act, EEOICPA, has paid out billions of dollars to workers with toxin and radiation-related cancers. This should provide some insight about DOE's effectiveness in protecting human health, especially under more lenient radiation protection standards of the past.

“The Center for Disease Control (CDC) has under its management the worker dose reconstruction analysis to determine worker claim eligibility and while some claimant favorable assumptions are applied, DOE contractor statements are assumed to be honest while workers statements are doubted. Apparently no effort is made by CDC or its National Institute of Occupational Health to see if DOE contractor claims change over time or to identify facilities with a high number of claims.

“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." (See 42 USC 7384, The Act-Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA), as Amended.)²⁵

“A NIOSH dose reconstruction document for the EEOICPA law states that at INL even in 1961, radiation was "carefully monitored and well-documented." Estimates of the radiological releases back then have been shown to be underestimates. Many of the health-significant radionuclides were not measured or estimated. Descriptions by DOE management attempting to show they were performing competently do not reflect reality.

“NIOSH IREP is used to calculate the Excess Relative Risk and Probability of Causation for radiation workers exposed in the past to radiation who have been diagnosed with cancer. You and use it online at [IREP](#)

“Inadequate monitoring of chemical vapor hazards has been in the news at Hanford recently, and chemical hazards contribute to health risks for INL workers as well. It is important to understand that a worker 5 Rem per year permissible limit is not protective of health, despite the fact that it may take a decade for cancer to occur.

“Comparisons of doses to the DOE and NRC annual dose limit of 5 rem for workers are misleading. First of all, the 5 rem/yr. dose is not protective of workers although in comparisons it is made to appear as a harmless dose. The permissible dose to the public from routine emissions of 100 mrem annually is a health compromising dose and a huge impact for people exposed for

²⁵ See the website for the Center for Disease Control, National Institute of Occupational Safety and Health, Division of Compensation Analysis and Support, [here](#). See testimony at a July 29, 2014 NIOSH meeting in Idaho Falls concerning chemical, drinking water, dose falsification and other issues, [here](#).

multiple years. While comparisons imply that people could safely attain 5 rem doses each year, it is known that such doses would greatly increase cancer and other health risks. Therefore, the industry has applied various limits to radiation workers such as a limit on the cumulative dose in any 10 year period and the lifetime cumulative dose a worker may receive. The lifetime average dose is restricted to 1.5 rem/yr. (1993 NCRP) or less than 10 rem (ICRP 1990).

“It is important to note that the permissible 5 rem annual whole body dose is not recognized as a safe dose and adverse health effects have been found for nuclear workers receiving doses far below 5 rem annually. It is natural to think that radiation permissible limits are "safe" levels of radiation, but that has never been the case. Post-1960 permissible limits were set with the knowledge that there was no safe dose; they stated that it was hoped that the benefits of the nuclear industry would outweigh the health risks. The permissible limits are set less on biological facts than on what appeared to be reasonable at the time in order to not hamper the nuclear industry.

“It is also important to remember just how low the doses are in studies of nuclear workers that have found an increased risk of cancer and leukemia. Epidemiologic studies have found the increased risk of cancer in nuclear workers even though the cumulative doses were less than 2 rem and usually accumulated in less than 40 mrem increments.

“Radiation workers may need multiple Complete Blood Counts following a suspected significant radiation exposure from external radiation or from an internal dose due to inhalation, ingestion or wound entry of radionuclides in to the body. Bioassay of urine and fecal samples is conducted to track radionuclide excretion following an intake of radionuclides. ²⁶

Radiation Epidemiology

“The National Cancer Institute has made an interactive I-131 fallout map available online. This is only for Nevada Test Site weapons fallout and does not include intentional or accidental releases from the Idaho National Laboratory. [I-131 interactive map](#). Enter the year you were born, county you lived in, and milk drinking habits and the name and date of the weapons tests affecting your area and your estimated dose will be provided.

“It is important to know DOE's history of concealing unfavorable epidemiology results in the past. DOE's misbehavior resulted in congressional hearings and a special panel convened by former Energy Secretary Wakins, ending DOE's direct control of epidemiologic studies.

²⁶ [Understanding Complete Blood Count Results Following Radiation Exposure](#), by Tami Thatcher, July 2018. And [Radiological and Chemical Exposures at the Idaho National Laboratory That Workers May Not Have Known About - How Health is Harmed by Uranium, Plutonium and Other Radionuclides and Chemicals and Possible Nutritional Support Strategies](#), by Tami Thatcher, April 2017

“Many past examples of dismissing adverse health effects of radiation exposure in the Department of Energy's weapons and nuclear complex are described in *Dead Reckoning*, a report by Steven Wing specifically about the in important to the study of radiation worker and public health. Some of the problems that have occurred in epidemiologic studies are highlighted below:

1. The wrong dose conversion factors are used to assess the significance of the doses (this is a key point from the ECRR).
2. The dose estimates are believed to be known, but in reality are not representative of the doses actually received. (This happened in the U.S. regarding the Three Mile Island nuclear accident.)
3. The control group (the group not exposed to radiation) has received elevated radiation levels, because of the distribution of contaminated food from fallout, for example.
4. The control group may not be representative, i.e., the healthy worker effect means that this group needs to be compared to other healthy and economically similar workers. (When the healthy worker effect is accounted for, the ECRR notes that nuclear workers have doubled the risk of cancer within 5 years of working in the industry.)
5. The sample group (the group exposed to radiation) is diluted with many people who have not received an elevated radiation exposure. (This is what happens when county statistics are used without regard for proximity to the nuclear facility and has been the historical basis for the NRC to state that nuclear plants don't cause cancer.)
6. Inadequate definition of endpoint, such as the focus by death from cancer while excluding the occurrence of cancer, or the exclusion of infant and perinatal mortality.
7. The wrong conclusions are drawn from the data.
8. The data has been tampered with, such as the withholding or falsification of data required by Soviet authorities in forbidding that medical professionals attribute the cause of illness to radiation or the withholding or inaccurate underreporting of the actual doses in dosimetry records by the Department of Energy.

“Data tampering? Yes, in the former USSR, but in the United States? In a letter by Ernest Sternglass, PhD to Dr. Steven Chu, the Secretary of Energy:

"Therefore, when it was discovered in the 1960's that small amounts of fission products produced much greater damage than had been expected, and not only leukemia and other forms of cancer but also premature births, low birth-weight and infant mortality, it was kept secret by our government for fear that it would endanger the deterrent value of the nuclear arsenal."

Ian Goddard Explains the Linear No-Threshold Model and Looks at Epidemiology Since the 2006 BEIR VII Report:

“Ian Goddard put together a video explaining the often debated "linear no-threshold" radiation health risk model. Nuclear proponents often argue that at doses below 10 rem there is no harm; they propose that there is a threshold below which radiation causes no harm. Other proponents argue that hormesis theory shows that radiation at low doses has a protective effect. Ian reviews human epidemiology studies that have been published since the National Academy of Sciences published its radiation health study in 2006. The BEIR VII study had concluded that the linear no-threshold model provided the best fit of

the available human epidemiology. Ian's look supports that the BEIR VII study represents or underrepresents radiation health risk and that the linear no-threshold model is still appropriate.”²⁷

The new EPA proposal is the latest in a long-running campaign to let the public and regulated industries sift through the raw data of epidemiologists whose work could affect pollution regulations.

In the 1990s, members of Congress pressed for legislation requiring scientists to disclose their raw scientific data, partly in response to a Harvard University study finding a correlation between more air pollution and lower life expectancy. Several times in recent years, the House of Representatives passed a bill requiring public disclosure of data from any new studies used by EPA to write regulations, but the proposal never made it out of Congress.²⁸

The Executive Orders below will not correct the problems discussed above.

Executive Order 13777, issued in March 2017, provides that regulatory reform efforts shall attempt to identify “those regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard of reproducibility.”

Executive Order 13783, also issued in March 2017, provides that “It is the policy of the United States that necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, and are developed through transparent processes that employ the best available peer-reviewed science and economics.”

Summary

1. EDI urges the EPA to withdraw the proposed rule change immediately.
2. The proposed rule makes the wrong assumption that the data that are not publicly available are unreliable and useless.
3. The proposed rule would allow the EPA to disqualify important scientific evidence.
4. The proposed rule, “Strengthening transparency in regulatory science” sounds like a reasonable thing, but the reality is that it will make it easier for polluters to pick and choose the science they want to embrace. It will allow polluters to dismiss earlier findings that may not have followed newer guidelines. It will give the EPA even more excuses to delay needed regulations for years
5. The proposed rule will not strengthen science, it will give more strength to polluters, including the Department of Energy, to remove or replace or delay regulations needed to protect human health. These polluters do not care about human health. They only care about being free to pollute freely. The cost of not regulating pollution is increased

²⁷ Tami Thatcher special Environmental Defense Institute report EDI Radiation Health Effects.

²⁸ [Warren Cornwall](http://www.sciencemag.org/news/2018/04/new-rule-could-force-epa-ignore-major-human-health-studies), New rule could force EPA to ignore major human health studies, Apr. 25, 2018, <http://www.sciencemag.org/news/2018/04/new-rule-could-force-epa-ignore-major-human-health-studies>

disease, premature death, birth defects, reduced IQ. The cost of later cleanup of polluted areas is often astronomical and rarely effective. The cleanup at the Idaho National Laboratory exemplifies how expensive cleanup is even when the cleanup basically consists of shifting pollution from one place to another and calling for the polluted area to forever be restricted from human use. The diseases and death from the pollution before cleanup and during cleanup claims lives, And the contamination that in not likely to remain contained will affect future generations. These costs are not born by the polluters.

We need the EPA to protect human life and not simply be there to protect polluters - especially federal facilities - from increased costs. Continued non-enforcement only transfers contaminated environment onto future generations.