

ROCKY FLATS STEWARDSHIP COUNCIL

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Kim Griffiths

Periodic Update – 2019, Issue #1

Do Low Doses of Ionizing Radiation Increase Lifespans?

Throughout the Department of Energy complex and elsewhere, one of the biggest uncertainties and areas of disagreement concerns the effects of low doses of ionizing radiation. At Rocky Flats, this question emerges in the debate over the protectiveness of the Rocky Flats National Wildlife Refuge. A new study out of Japan suggests that human exposure to low doses of ionizing radiation increase lifespans.

To understand that study, one has to first understand the linear no-threshold model. As explained in a 2009 edition of Radiology,

The carcinogenic risk induced by low doses of ionizing radiation is controversial. It cannot be assessed with epidemiologic methods alone because at low doses the data are imprecise and often conflicting. Since the 1970s, the radiation protection community has estimated the risk of low doses by means of extrapolation from the risk assessed at high doses, generally by using the linear no-threshold (LNT) model...**The LNT relationship implies proportionality between dose and cancer risk.** (emphasis added)

The Rocky Flats cleanup was based on the LNT. A new study examining Hiroshima and Nagasaki survivors concludes that not only is LNT without merit, but that survivors who were exposed to low doses of ionizing radiation had longer life spans than the general population in Japan. As explained in the abstract,

The US National Academy of Sciences (NAS) presented the linear no-threshold hypothesis (LNT) in 1956, which indicates that the lowest doses of ionizing radiation are hazardous in proportion to the dose. This spurious hypothesis was not based on solid data. NAS put forward the BEIR VII report in 2006 as evidence supporting LNT. The study described in the report used data of the Life Span Study (LSS) of A-bomb survivors. Estimation of exposure doses was based on initial radiation (5%) and neglected residual radiation (10%), leading to underestimation of the doses. Residual radiation mainly consisted of fallout that poured down onto the ground along with black rain. The black-rain-affected areas were wide. Not only A-bomb survivors but also not-in-the-city control subjects (NIC) must have been exposed to residual radiation to a greater or lesser degree. Use of NIC as negative controls constitutes a major failure in analyses of LSS. Another failure of LSS is its neglect of radiation adaptive responses which include low-dose stimulation of DNA damage repair, removal of aberrant cells via stimulated apoptosis, and elimination of cancer cells via stimulated anticancer immunity. LSS never incorporates

consideration of this possibility. When LSS data of longevity are examined, a clear J-shaped dose-response, a hallmark of radiation hormesis, is apparent. Both A-bomb survivors and NIC showed longer than average lifespans. **Average solid cancer death ratios of both A-bomb survivors and NIC were lower than the average for Japanese people, which is consistent with the occurrence of radiation adaptive responses (the bases for radiation hormesis), essentially invalidating the LNT model.** Nevertheless, LNT has served as the basis of radiation regulation policy. If it were not for LNT, tremendous human, social, and economic losses would not have occurred in the aftermath of the Fukushima Daiichi nuclear plant accident. For many reasons, LNT must be revised or abolished, with changes based not on policy but on science. (emphasis added)

The study is currently available at:

<https://genesenvironment.biomedcentral.com/track/pdf/10.1186/s41021-018-0114-3>

Groups Sue to Gain Access to Rocky Flats Grand Jury Records

One of the hallmarks of the cleanup and closure of Rocky Flats is the cyclical nature of public concern. On January 11, 2019, seven citizen organizations, most of whom are engaged in ongoing litigation against the US Fish and Wildlife Service (USFWS) over the opening of the Rocky Flats National Wildlife Refuge, filed a petition in federal court seeking access to the Rocky Flats grand jury files. A prior request to have the files unsealed was denied.

While somewhat opaque in the filing, the petitioners' reason for requesting the seal be lifted must be connected to identifiable litigation, pending or foreseeable. Their attorney, Pat Mellen, stated upon filing the motion, "The Grand Jury documents offer a unique opportunity to evaluate the cleanup and bridge the gap between concerned community groups and advocates for aggressive economic development. We look forward to ending the current standoff over Rocky Flats' future and moving this conversation forward in a more productive, evidence-driven way." She was quoted by the Associated Press saying "There's a perception that we're hoping to dispel that every inch of the refuge was considered and tested, and they went looking for the contamination until they found it. That was not the procedure."

Notably, in 2004, in response to an inquiry from Representative Udall, US Attorney for Colorado John Suthers (later the Colorado Attorney General) granted DOE, CDPHE and EPA access to 65 boxes of information that were gathered as part of the grand jury's work. CDPHE determined that the information contained therein was copies of documents the agencies already possessed and had considered as part of the cleanup.

Udall and Suthers' exchange is attached. The petition can be found on the Rocky Flats Ambushed Grand Jury website: <https://rockyflatsambushedgrandjury.com/whats-happening/>

One final item of note: In January 1993, Judge Finesilver released a redacted version of the grand jury's report. In later years, unredacted versions appeared on the internet, though Stewardship Council staff cannot vouch for their authenticity.

How Clean Must A Site Be?

There's an interesting nexus between the request to unseal the grand jury documents and pending litigation against USFWS over opening of the Rocky Flats Refuge. The petitioners in the action above and the plaintiffs in the pending litigation overlap.

In July 2018, during a hearing in federal court challenging the opening of the Refuge, the plaintiffs' attorney stated "the lawsuit does not challenge EPA's determination that the refuge is safe."¹ The court rejected the plaintiff's request to enjoin USFWS from opening the Refuge, explaining in part

Plaintiffs stated at the hearing that they did not challenge the EPA and CDPHE's findings about the expected health effects of the plutonium levels in the Refuge's soil....Both the EPA and the CDPHE, agencies with expertise in the health risks associated with environmental contaminants, have repeatedly certified that the Refuge is "suitable for unlimited use and unrestricted exposure" by workers and visitors spending significant amounts of time at the Refuge. These agencies have not found that the Refuge is absolutely safe; rather, the agencies' estimates acknowledge that the levels of radiation present at the Refuge carry an actual, but extremely small, increased risk of cancer. In fact, the EPA and CDPHE noted that the risks presented by the contamination levels found in the Refuge are "at the very low end of the CERCLA risk range for excess cancer." Plaintiffs' evidence, at best, shows that the agencies' findings underestimate the health risks by failing to account for windblown plutonium generally and that trail use will produce some additional windblown dust. But plaintiffs have not, for example, shown that any of their members will be exposed to a risk that exceeds an established threshold for exposure or produces a health risk beyond the very small, but nonetheless non-zero, risk resulting from exposure to even minute quantities of radioactive materials....Regulatory action often involves managing the levels of risk, and plaintiffs have not shown a basis to claim that agencies are required to eliminate every added risk of plutonium exposure or that such mitigation would even be possible.

DOE Reports a "Reportable Condition" for TCE

On December 19, 2018, DOE issued the following notice:

INFORMAL NOTIFICATION OF A REPORTABLE CONDITION AS SPECIFIED IN THE ROCKY FLATS SITE ADAPTIVE MANAGEMENT PLAN (AMP)

This is an informal notification of a reportable condition at the Rocky Flats Site, under the *Rocky Flats Legacy Management Agreement (RFLMA)*, Attachment 2, Section 6.0, "Action Determinations," for trichloroethene (TCE) at Area of Concern (AOC) well 10304.

Analytical results for the fourth-quarter 2018 sample collected October 11, 2018 from AOC well 10304, located downgradient of the 903 Pad/Ryan's Pit Plume, were validated on December 3, 2018. The concentration of TCE in this sample was reported at 5.43 micrograms per liter ($\mu\text{g/L}$). The corresponding RFLMA standard is 2.5 $\mu\text{g/L}$. As discussed in the second-quarter 2018 Rocky Flats Site monitoring and maintenance report, the concentration of the sample collected during that quarter (26 $\mu\text{g/L}$) also exceeded the TCE standard. Because this fourth-quarter sample represents the second consecutive routine semiannual sample in which TCE concentrations have exceeded a RFLMA standard, in accordance with RFLMA Attachment 2, Figure 7, a reportable condition for TCE exists at this AOC well.

¹ The statute of limitations for challenging the cleanup decision, including the decision to release the lands that now comprise the Rocky Flats National Wildlife Refuge for "unlimited use, unlimited exposure," is six years. The final regulatory documents were approved in 2006.



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April 19, 2004
RECEIVED

APR 29 2004

Mark E. Udall
DC Office

Congressman Mark Udall
115 Canon House Office Building
Washington, D.C. 20515-0602

Dear Congressman Udall:

I am in receipt of your letter of April 13, 2004, and the attached e-mail from Wes McKinley, et. al.

Congressman Udall, I don't want to become involved in a public debate about the merits of the accusations detailed in *The Ambushed Grand Jury*, but suffice it to say that there is another side to the story. For that reason I have enclosed a copy of the 1994 report by the Department of Justice reviewing the handling of the Rocky Flats case by DOJ and the U.S. Attorney's Office for Colorado.

There has been an enormous amount of environmental testing at the Rocky Flats site ever since the prosecution of this case concluded over a decade ago and no one in our office believes that there is any evidence of contamination at Rocky Flats contained in Justice Department files which is not otherwise known to the multiple agencies that have been responsible for the clean-up. Nevertheless, we would be willing to have agents of the Department of Energy, the EPA and the State of Colorado Department of Health and Environment review the 65 boxes of documents to determine if any information would be useful to them in the continuing clean-up process. If there was any question about whether the information was governed by Rule 6(e), we would ask the Court to allow its disclosure. But, I reiterate our belief that it is highly unlikely that any of the documents in our possession would shed any new light on the clean-up effort.

It is my understanding that there have been multiple Freedom of Information Act requests for the material in our files in the past decade and that, upon review of the material, it was not deemed to be of a nature subject to disclosure under FOIA.

Thanks for your continuing efforts in the public's interest.

Sincerely,



John W. Suthers
United States Attorney
District of Colorado

JWS:db

Enclosure

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Congress of the United States
House of Representatives
Washington, DC 20515-0602

April 13, 2004

COMMITTEE ON RESOURCES
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WWW.HOUSE.GOV/MARKUDALL

John W. Suthers, Esq.,
United States Attorney, District of Colorado
1225 17th Street, Suite 700
Denver, CO 80202

Dear Mr. Suthers:

I have received the enclosed e-mail from three people who evidently were associated with the grand jury investigation of matters at Rocky Flats that is the subject of a recently-published book entitled *The Ambushed Grand Jury*.

The e-mail seeks the release of "all documentary evidence of contamination at Rocky Flats which now lies sealed in the basement of the Justice Department offices in Denver."

As you know, the cleanup of Rocky Flats is now underway pursuant to an agreement among the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the State of Colorado. If the Justice Department has any information that would be useful to this important work, I think it should be provided to those responsible for the cleanup.

Thank you for your attention to this matter.

Sincerely,

Mark Udall