

**Diana, Sherri A. (CDC/NIOSH/EID) (CTR)**

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**From:** Tami Thatcher  
**Sent:** Wednesday, December 16, 2015 1:54 PM  
**To:** NIOSH Docket Office (CDC)  
**Subject:** INL's Test Reactor Area and Test Area North Merit a Much Closer Look

Dear NIOSH at 'nioshdocket@cdc.gov'

It is a very important finding that was reached because of investigation of Special Cohort Petition 219. Specifically, the finding that for the Chemical Processing Plant at the Idaho National Laborator between 1/1/1963 and 12/31/1974, bioassay data were insufficient to support reconstruction of internal exposures the Uranium, Neptunium, and Plutonium as well as other related transuranics.

The topics I discuss here for the Test Reactor Area and Test Area North (TAN) merit a much closer look and what I discuss is by no means everything that should be examined. This is only a cursory glance.

I want to be quite sure that you are aware of the large and apparently unrecorded transuranics dumped into waste water at the Test Reactor Area at the INL, now called the ATR Complex. CERCLA evaluation documents in the early 1990s found perched water levels of Americium-241 at the Test Reactor Area of 2110 picoCuries/liter, far exceeding 15 pCi/L that relates to alpha emitters. (See EGG-WM-10002 on ar.icp.doe.gov) The source of the exceedingly high Americium levels would likely not have arisen from normal reactor effluent. However, the MTR did run on plutonium for a few years.

If NIOSH has not studied the CERCLA findings, they could easily be missed because deeper perched water and the aquifer water monitoring do not yet yield such high alpha radionuclide levels. It is particularly important for NIOSH to study early CERCLA findings in addition to recent reports.

At the Test Reactor Area, over time, the Americium-241 has moved from shallow perched water into the soil and will migrate to deep perched water and then to the aquifer. The monitoring of the leaking retention basin and related shallow perched water has often not addressed alpha contamination, for some unknown reason. The alpha contamination may be in the soil now when the shallow perched wells are dry. But that does not change the fact the enormous quantities of alpha emitters were flushed through the warm waste piping to the retention basin and pond. The record keeping was deliberately inadequate and estimates of the discharges from the 1950s and 1960s, especially, are only guesses at best.

Again, the laboratories at the Test Reactor Area were doing rather secretive work involving significant quantities of Americium-241 and probably other transuranics. The work and subsequent amount dumped to the warm waste system, as system which focused more on gamma than alpha content, is largely undocumented and unknown. Records do not exist and little effort has been made to derive and explain the quantities involved in laboratory work or dumped to the warm waste system which was piped to the retention basis and open air percolation ponds. The CERCLA documents for the Test Reactor Area appear very weak in this regard. MTR canal contamination levels should also be examined. Reactor and canal water cleanup systems in the early and middle decades were probably non-existent to very ineffective at the Test Reactor Area.

Thus, it is important that NIOSH understand that alpha monitoring deficiencies were a problem at the Test Reactor Area, in addition to the Chemical Processing plant.

In addition, during the 1960s while efforts were made to stay below 5 rem/yr even though the annual limit was 12 rem/yr, it is remarkable that so many workers received greater than 5 rem external radiation doses that later

were thought to be an error. Yet, it is not credible that John Horan, NIOSH consultant and previous Department of Energy Health and Safety Director who was the chief editor of INL health and safety reports did not comprehend how and when these recorded doses occurred in the 1960s.

It was John Horan who stopped issuing health and safety reports that he had previously issued between 1959 and 1963. The reports covered in some fashion, worker and environmental radiation exposures, but the reports lapse between roughly 1964 and 1969. Perhaps partly to hide the effluent blowing in from below ground weapons testing after the 1963 above ground weapons test ban, the environmental monitoring records are "disappeared." And partly because the actual SNAPTRAN releases were probably understated by the Department of Energy. In fact, one of the SNAPTRAN tests at INL in 1965 seems to have totally been "disappeared" yet is mentioned in the DOE's Human Radiation Experiments document collection. SNAPTRAN tests were at the Test Area North. USGS water monitoring ceased for about a decade from NRF to Mud Lake due to some odd coincidence.

NIOSH needs to take an in depth look at the Test Area North (TAN) and the highly contaminated soils remaining after 47 truck loads of contaminated soil were trucked away from TAN for burial in 1966 at either CFA or the RWMC. The subsequent highly contaminated soils were found decades later in CERCLA investigations at TAN, so the cleanup in the 1960s was not entirely effective.

John Horan claimed that the wind direction changes so frequently that the radioactive effluents from a discharge wouldn't blow offsite. The NIOSH analysts claim that INL workers were not exposed because releases were timed to blow offsite. John Horan claims he didn't know why the external radiation doses for 61 workers were so high in 1965, yet it was his job to know what the human and environmental exposures were. John Horan goes out of his way to claim that a deliberate action of an unstable crewman caused the SL-1 accident despite a congressional board that absolved the crew and despite the autopsy conclusion that the supposed unstable man's hands had not been the hands that pulled the rod. When NIOSH hired John Horan as an expert, they were hiring among the most skilled nuclear apologists of all time. He knew his job was to promote public acceptance of nuclear energy. When John Horan claims that all radiation exposures at INL were carefully planned, monitored and recorded, NIOSH should look again.

See Idaho National Laboratory Federal CERCLA Cleanup documents at [ar.icp.doe.gov](http://ar.icp.doe.gov) S.M. Lewis et al., Remedial Investigation Report for the Test Reactor Area Perched Water System (Perable unit 2-12), EGG-WM-10002, June 1992.

See J. R. Horan, "Occupational Radiation Exposure History of the Idaho Field Office Operations at INEL," EGG-CS-11143, October 1993. At [www.iaea.org/inis](http://www.iaea.org/inis).

See the Department of Energy Human Radiation Experiments documents collection (of the small subset publically accessible) including J. R. Horan, "Annual Progress Report 1963, Idaho Operations Office of the US Atomic Energy Commission," 1964, and INEL-HRE-TO70228 and the SNAPTRAN collection at <http://www4vip.inl.gov/library/searchreadingroom2.shtml>

Sincerely,  
Tami Thatcher