

April 14, 2001

Chairman Joe Skeen
Subcommittee on Interior and Related Agencies Appropriations
B-308 Rayburn House Office Building
Washington D.C. 20515

Dear Chairman Skeen,

I am a citizen scientist and a mother, and I am writing to recommend that your committee cut all funding appropriations for the \$1 billion Fire Abatement Plan over the next 20 years for the **Bureau of Land Management in Nevada**. The impact on **Public Health** from exposure to low level internal radiation and increased toxicity from complex chemical mixtures has not been addressed, investigated, or even more worrisome is the absence of basic research in the open literature. Practically no research has been done on the health effects from the interaction of radiation and chemical mixtures, a most serious matter to be considered in Nevada. This is an irresponsible and careless plan to poison Pinyon pine on public lands, with components of Agent Orange, and then incinerate 3.5 million acres throughout the state of Nevada. It will remobilize radioactive fallout from above-ground testing in the upper dust level, and combine it with other chemicals during incineration of plant material. The presence and potential danger of remobilizing depleted uranium (DU) throughout Nevada from past activities such as burning DU munitions at the Sierra Army Depot, licensed testing of DU at the Nevada Test Site, Tonopah Test Range, Nellis AFB and other sites has not been addressed. The likelihood that DU munitions were also tested on the bombing and test ranges around the Fallon Naval Air Station, in violation of Naval regulations, points to DU as the likely cause of the recent Fallon leukemia cluster. The issues of air movement, particle size, and distance of transport for DU have not been investigated, but were mentioned in a letter from the State of Nevada to Col. Michael Fukey, Nellis AFB (State of Nevada 1997). This is an even more compelling reason to use the precautionary principle in implementing any planned burns. Secondly, this is an **Environmental Justice** issue which will disproportionately impact Native Americans living throughout the planned burn areas. These populations have already suffered the devastating health effects from exposure to radiation from above-ground testing which has resulted in epigenetic and structural chromosome aberrations expressed as permanent damage to their reproductive potential, DNA, and all future generations of those exposed, as well as death and illnesses from radiation related diseases. The **Environmental Impact** on the biosphere should be carefully considered, the Basin and Range is a fragile ecosystem. The Native American reliance on Pinyon pine nuts as a traditional dietary supplement should also be respected. The impact of reducing this food source for wildlife by this magnitude is serious. Burning organics in the presence of chlorides (present in most plants) produces dioxins which were not present before and are known carcinogens, as well as phosgene gas from herbicides, a lethal gas used in WWI. These issues have not been addressed and should be before a plan of this magnitude is implemented.

Public Health: The impact on public health in Nevada from exposure to internal radiation is part of a larger global health issue of grave and immediate concern. Present radiation health standards need to be revised and should be based on new research on the biological effects of internal ionizing radiation from inhalation, ingestion and X-rays (Gofman 1999), not on the existing standards based on faulty studies (Busby 1995). World radiation exposure standards have been based on studies of Hiroshima and Nagasaki survivors. These survivors were exposed

primarily to external flash radiation from gamma rays. Internal exposure to inhaled or ingested radiation (radioactive isotopes) from fallout was ignored or omitted in the Hiroshima and Nagasaki studies. In Figure 1 the estimated level of exposure (distance from ground zero) is clearly proportional to the amount of damage to the Glycophorin on red blood cells (Bigbee 1992). The background level of damage from radiation (at zero estimated dose) which occurs naturally in the environment represents pre-1945 levels before man-made radiation. Since 1945, man-made radiation from nuclear testing and nuclear reactors has had a global effect on public health. Man-made radiation is many times more damaging than natural background because it is internal (Mangano 1999) and has a second-event effect (Busby 1995). In 1963 President Kennedy halted above-ground testing in response to mounting evidence that fallout was causing the deaths of a great number of U.S. citizens as well as others. The greatest impact was on the health of Native Americans, local populations, and New Yorkers and others in the fallout path of the Nevada Test Site.

The exposure of the global population to internal radiation from Chernobyl fallout further alerted the global scientific community to the dangers of internal and low level radiation (Figure 2).

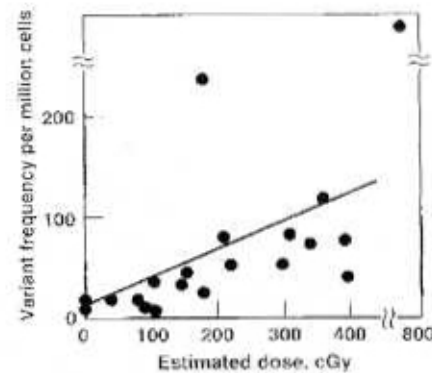
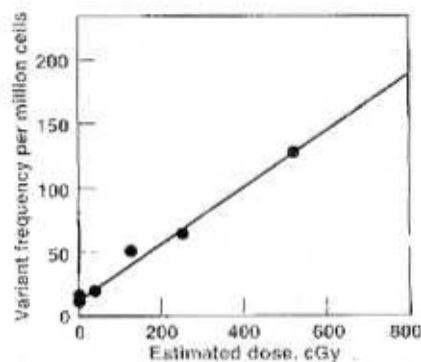


Fig. 1: Exposed in Hiroshima during 1945. Fig. 2: Exposed to radiation at Chernobyl.

Frequency of damaged variant cells in blood samples from individuals exposed to radiation. The variant frequencies are plotted as a function of estimated radiation doses for pooled groups of survivors (Hiroshima) and for individual victims (Chernobyl). (From Bigbee 1992)

Three additional groups of individuals exposed to ionizing radiation, workers at the Sellafield nuclear fuel reprocessing plant in England, X-ray workers in China and the U.S., and a recent study by the Radiation and Public Health Project on communities in the U.S. living within 100 miles of nuclear reactors, provide mounting evidence that there are no “safe levels” of radiation.

On March 28, 2001, the Radiation and Public Health Project [<http://www.radiation.org>] released a new study, *Environmental Radiation from Nuclear Reactors and Increasing Children’s Cancer in Southeastern Florida – A Special Report on the Florida Baby Tooth Study*, the results of a privately funded study on the health effects of low level radiation on populations living within 100 miles of nuclear reactors in Florida. This is the first study conducted in the United States on the health effects of low level radiation on people living near nuclear reactors. The study showed increased levels of radiation-related diseases in children when nuclear reactors were operating at St. Lucie and Turkey Point, and decreased levels when the reactors were shut down.

I am the Bay Area Coordinator for the *Baby Tooth Study* in California, which may hold the key to the nationwide study. In order to document increased levels of childhood cancers and leukemia, we are collecting 10,000 baby teeth from the U.S. to analyze for Strontium-90, a man-made radioactive isotope which is a product of nuclear explosions and nuclear reactors.



Fig. 3 High Risk Counties Within 100 Miles of Nuclear Reactors. These counties had more than 2/3 of all breast cancer deaths 1985-89.



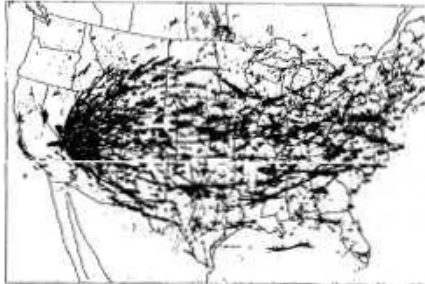
Fig. 4 Nuclear Reactors in the U.S.

Measurements of Strontium-90 in the baby teeth are proof of cancer-causing fission products in the body of the mother and child at the time of birth. The health study correlates proximity to nuclear reactors (Figure 3&4) with increased levels of breast cancer, AIDS, low birthweights, prostate cancer, other radiation-induced immune deficiency effects including Lyme's Disease, and increased deaths from pneumonia. This physical evidence supports earlier statistical evidence from J. Gould's book *The Enemy Within*. I am asking your committee to carefully consider the implications of these studies and the public health danger of remobilizing existing radioactive isotopes in the upper dust level throughout Nevada, further exposing Native Americans and other communities to radiation from man-made burns.

The Fallon leukemia cluster, now under investigation by State and Federal agencies, like the "canary in the coal mine" is the beginning of an epidemic of leukemia and other diseases in Nevada if DU is the causative agent. During the Nevada Legislative Committee investigation of the Fallon leukemia cluster in February 2001, it was clear from testimony by experts that air was the pathway of exposure. The tight clustering in the timing of the diagnoses for 11 out of 12 cases of leukemia (Acute Lymphocytic Leukemia) in a town of 8000⁺ suggested a catastrophic exposure, such as range fires mobilizing aerosol particles of DU. Because of my experience managing the sampling plan and sample database on the Superfund project at the Lawrence Livermore National Laboratory, I testified to the Committee that DU should be considered as a possible contaminant, and made recommendations on sampling methods. Although the Navy was restricted to battle conditions only for use of DU munitions, this regulation was violated on Vieques Island, Puerto Rico by the Naval officers there, resulting in exposure of the entire population of 9000⁺ to DU and heavy metal poisoning. Until the agent of exposure is identified for the Fallon leukemia cluster, and the danger of remobilizing Nevada Test Site radionuclides is investigated, there should be no further controlled burns in Nevada. Absence of proof is not proof of absence.

The global effects of internal exposure to radiation from Chernobyl (Gould 1990), depleted uranium in the Gulf War and Balkan States (Low Level Radiation Campaign <http://www.llrc.org>), and the Radiation and Public Health Project (<http://www.radiation.org>) study on low level radiation from emissions from nuclear reactors makes it crystal clear that there is no safe level of exposure to radiation.

Environmental Justice: For six decades the Native Americans living in Nevada have disproportionately suffered severe health effects from exposure to radioactive fallout on traditional tribal grounds due to above ground testing at the Nevada Test Site. I have visited their communities and gatherings, joined their prayer circles at dawn and circle danced at night around their campfires. I have heard their stories of suffering from leukemia, birth defects,



Areas of the Continental United States Crossed by More Than One Nuclear Cloud from Aboveground Detonations

breast cancer, prostate cancer, brain cancer and the continuing loss of family members. Radiation damage to their DNA and the additional epigenetic effects are permanent and forever, it impacts all future generations. To subject these downwinders to further assaults on their health from exposure to radiation is unconscionable, especially from the burning of Pinyon pine, part of their traditional diet. Native Americans should be respected for the richness of their culture and as representatives of our indigenous population.

Environmental Impact: The Basin and Range is a diverse and fragile ecosystem. The use of chemical agents to kill Pinyon pines for planned burns has resulted in the death of the insects necessary to pollinate the trees. There is no pinenut crop where these chemicals have been used. The chemical zones on the ground around the Pinyon pines will remain sterile where nothing can grow for seven years, many lifetimes for some animals. Pinyon pines take 65 years to mature before they can bear cones and many animals rely on pine nuts for food. How this plan will impact other parts of the ecosystem and contaminate water supplies is unknown.

Stop this insane plan.

Leuren Moret
President, Scientists for Indigenous People
Past President, Association for Women Geoscientists

<leurenmoret@yahoo.com>
(510) 845-3139

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