



At the very utmost ~~minimum~~ minimum, this EIS and all EIS's which used projections of nuclear growth gathered before the accident at Three Mile Island No 2 accident must be retracted and redone using up-to-date projections of TURNING THE NUKES OFF TOMMORROW DUE TO THE OUTCRY OF THE PUBLIC REGARDING THE LACK OF SAFETY INHERENT TO THE NUCLEAR OPTION.

This point is negotiable if you want to turn off the nukes today.

Page 6 Table 1. Note c. These risks are for a 20 year span. That's ridiculous. You're not even ignoring or begging the issue of human life. The tailings will be ~~giving~~ giving off radon for millenia and longer. Radon will ~~find~~ find its way into human lungs. There will be eventually 1,200,000 premature human deaths for every year of reactor operation. The same errors are again presented in Table 6.16 Page 6-41 and again on Page 9-30. The cumulatives are taken to 3000 A.D. The only way that this assumption of a cut-off date of 3000 A.D. for human deaths from radon associated with tailings is to be true is for no human beings to be alive after the year, ~~39x~~ 3000 A.D.

I hope that the human race survives a long time past the year, 3000 A.D. I know that if human beings are around past the year, 3000 A.D., your cutoff date for premature cancer deats in Table 9.13 will appear foolish, however my loyalties are more for ~~your~~ the survival of the human race than preserving the dubious value of Table 9.13.

Page 7 At Table 2. This is another sickie.

I presume that because you are putting the very small fractional increase in deaths due to the milling industry, you are trying to say that the milling industry is justified because it has such a small impact.

I wonder if any murderers have ever used that type of justification in their trials. I guess it would go like this, "Judge," says the murderer, "sure, I hit that little old lady over the head and killed her to get her pocket book, but, judge, think of all the millions of people who have died ~~where~~ where I was not any where near. All them people died without me doing a thing. Why give me the chair just cause I killed one little old lady for her purse."

~~Your~~ Your Table 2 is just as convincing as the murderer's plea above.

Page 5-5 "The Model Mill is not designed to process low grade ores (.4%). " Well you had better look at the recent mining EIS's which you have in your list of references and the Exxon /State Game Commission negotiations. Further, your description of heap leaching is not amenable to the surface and ground water contamination problems in the Carbon Co area of Pa. N.J. has even more of a ground water contamination problem. This is an EIS which purposely has left out the most difficult areas for a milling operation.

Page 7-10, According to talking with people who were at the sight, I did not know that sheeting was placed on this accident within 3 hours. Are you sure that this accident was covered by plastic sheeting within 3 hours? How come some spectators did not remember this sheeting?

Page 12-10. Paragraph 12.3.3.3 risks to Individuals.

After talking about the control of radon emissions to background levels in the preceding section, you show your true hand. "The Surgeon General guidelines specified no remedial action is needed for homes with an inside exposure level of less than 0.01 WL above background."

Now we can see that Control of Radon to background levels is not what the NRC wants. It wants to find out how well people can survive at .01 WL above background.

Well the case of radon is different than the case of the murderer which I quoted above. The murderer was only killing one person. Radon from mining and milling will kill eventually 1,200,000 people pr year of reactor operation.

There are so many , many dangers in the operation of the nuclear fuel cycle. I know to anybody reading this that I appear opinionated and aggressive.

Please remember that you are also opinionated. You could not hold a job for long with the NRC unless you agreed with the viewpoints of that most aggressive of nuclear advocates, Chairman Hendrie.

Neither do I say that you should lose your ~~job~~ job merely to sink a dangerous and incorrect report.

However , if you do have a conscience and you do respect human life, do something.

Perhaps you can start with a small non tax deductible contribution to a anti nuclear group. I have been with the Environmental Coalition on "Nuclear Power. I am not writing these comments for them. I only mention them as a honest, hard working , anti nuclear group.

If you want to discuss anything with me in confidence , call me at (215) 934 6685 in the evenings or CU 9 5964 in the day time.

I know that there must be many conscience ridden people in the "RC. I know what a well paying job means in these days. We can work something out.

Marvin I Lewis

*Marvin I. Lewis*

*SEE enclosures: 2 Pages.*

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## PERIL IN WEST

# Uranium Ore Wastes Left to Wind, Rain

BY GAYLORD SHAW  
*Times Staff Writer*

**SALT LAKE CITY**—The abandoned industrial site along busy Interstate 15 four miles from downtown Salt Lake City looks too decrepit to be dangerous.

Behind the rusty fence, a weed-choked railroad track is flanked by a weathered red-and-white smokestack, an aging water tower and rubble from buildings razed years ago. The gate bears "No Trespassing" signs, but it is open and no guards can be seen.

Behind the fence is what Utah Gov. Scott M. Matheson calls "the largest microwave oven in the West"—3.4 billion pounds of uranium tailings, the radioactive residue left by years of processing uranium ore.

The Vitro site, as the Salt Lake City plant is known, is one of 22 abandoned uranium mills in Western states that represent a hazardous and long-neglected legacy of America's push into the nuclear age.

This is one of a two-part series on nuclear waste, written by Gaylord Shaw, winner of the 1977 Pulitzer Prize for national reporting. Shaw is Denver bureau chief for the Los Angeles Times.

From the time of the Manhattan Project in the 1940's through the Cold War of the 1950's and then into the 1960's, the mills in Arizona, Colorado, Idaho, New Mexico, Oregon, Texas, Utah and Wyoming secretly processed vast amounts of ore into enriched uranium for use in producing a stockpile of nuclear weapons.

The processing left behind 32 billion pounds of uranium tailings, huge piles of sand-like material scattered around the sites with little protection from wind and rain.

The concentrations of radioactivity in the tailings are several times greater than those concentrations found naturally in the earth's crust.

But for years the tailings were considered harmless. In fact, the material was used as foundations for hundreds of homes and other buildings in Utah and Colorado.

More recently, however, scientists

have become aware of the potential long-term hazards of low-level radioactivity, and experts have begun to warn that unless action is taken, the piles of tailings could cause scores of cases of cancer in the future.

To reduce the hazard, Congress is expected to complete action next month on legislation to spend more than \$100 million to either move the piles to uninhabited desert locations or to cover the present sites with a thick layer of soil.

It is an expensive lesson in the cost of dealing with the debris of the nuclear era. But at least authorities know how to reduce the hazards posed by uranium tailings. In contrast, the problem of disposing of highly radioactive wastes from the other end of the nuclear cycle—those deadly liquids and solids left by weapons manufacturing and electrical power generation—still perplexes government officials and scientists more than three decades after the dawning of the atomic age.

These high-level wastes are now stored temporarily throughout the country, and controversy has haunted the government's search for a place to permanently dispose of them. The latest proposal, to bury the wastes deep in the salt beds of southeastern New Mexico, has touched off such heated debate that the search for alternate disposal sites is being accelerated.

Although less controversial, the problem of uranium tailings is crucial because solving it represents "a first step toward resolving some of the problems of safely disposing of radioactive wastes—a barrier preventing the United States from placing greater reliance on nuclear power as a substantial energy source," said Monte Canfield Jr., director of the General Accounting Office's energy and minerals division.

The volume of tailings at inactive uranium mills is immense: 500 million cubic feet. This means that if the tailings were stacked on a single football field, the resulting pile would be more than 11,000 feet high.

And the tailings contain about 85% of the radioactivity originally in the uranium ore because radium and thorium—the principal contributors to radioactive emissions—were not normally removed during the milling.

Of the two, radium is the most significant, according to a GAO analysis issued this summer. The report explained why:

"It has a very long radioactive life, taking thousands of years before it loses its radioactivity. This loss—called radioactive decay—produces two distinct types of hazards. The first type is highly penetrating gamma radiation. Exposure to sufficient amounts of gamma radiation can

cause cancer, such as leukemia. The second hazard—radon gas—produces other radioactive products which attach to particles in the air and are deposited in the lungs when inhaled. Exposure to large concentrations of these radon products can increase the risk of lung cancer."

Because most of the tailings are unprotected from the elements, radioactivity is known in some cases to have spread far beyond the sites. In Durango, Colo., dust blown from a 230-foot-high tailings pile just outside town has blanketed rooftops of residences. And on the Green River in east central Utah, 14,000 tons of tailings were washed downstream in a flash flood.

Government officials say they know of no cancer cases directly attributable to uranium tailings, but one Salt Lake City businessman contends that radioactive dust from the Vitro site may have caused the malignant tumor that forced the removal of his right eye three months ago.

Richard W. Wells, president of a distributing company, said he owned property and worked near the tailings regularly for eight years, and quoted his doctors as saying there was "a very good possibility" that his cancer resulted from exposure to the radioactivity.

"If this is happening to me, it could be happening to a good many people that are involved in this situation down there," Wells said in a letter introduced at a congressional hearing.

A recent Department of Energy report on nuclear waste disposal said, "The risk of incurring lung cancer is about double the normal to population living in close proximity to the tailings." And to obtain more precise information, the department hired a consulting firm to conduct detailed studies of the cancer threat.

The private researchers concluded that remedial action at the 22 tailings sites would avoid 339 cancer cases during the next 100 years, about half of them in Salt Lake City. Officials cautioned that the estimate could vary by a factor of three or four, meaning that in the eight Western states as few as 84 cases or as many as 1,346 could be at stake.

Dr. Lyman Olson, Utah's chief health officer, said radon gas levels at the Vitro site are 30 times higher than the upper limit prescribed by the surgeon general for remedial action. And Olson frets about what the future will bring.

"It is significant to us, and a continual worry, that each time new and better scientific information becomes available, as in the case of our new technique for measuring radon, the extent of the hazard is concluded to be worse than previously thought," he said.

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When the Vitro mill began operation in 1961, it was on the outskirts of Salt Lake City. When it closed in 1968, it was surrounded by industrial development. And now, 10 years later, the abandoned plant is within a few blocks of the city's population center.

City officials have banned new construction within half a mile of the site, meaning some industrial tracts which might sell for \$30,000 an acre currently are virtually worthless.

But what's worse, according to Dr. Harry Gibbons, city-county health director, is that 22,000 tons of the tailings were removed from the site before 1968 for use as fill at an unknown number of building sites.

Eight hundred tons, compacted into a six-foot layer, went beneath Salt Lake City's main fire station when it was built in 1958. Thus, Gibbons said, firemen "have suffered years of radiation exposure at levels five times higher than those allowed for underground uranium miners, and 50 times greater than those acceptable for the general public."

As a temporary measure, fans and filters were installed to circulate and cleanse air within the fire station while authorities debate whether to jek up the building and remove the tailings or simply abandon the structure.

Inspectors have located 17 other sites in Salt Lake City where tailings were used beneath homes or businesses. One was a food processing plant whose owner quietly had the tailings dug out at his own expense—without waiting for possible government aid—for fear that publicity would ruin his business.

But authorities have been unable to account for all 22,000 tons of radioactive fill removed from the Vitro site. "For all we know, there may be kids playing with it in sand boxes," Gibbons said.

Salt Lake City's search for the missing radioactive tailings, however, is dwarfed by the well-publicized experience of Grand Junction, Colo., a city of 30,000 on the western slope of the Rockies.

From 1950 through 1966, Grand Junction's contractors availed themselves of a uranium mill's offer of free tailings, which compacted so well they were widely used as building material. More than 700 homes, businesses, schools and churches—plus downtown sidewalks and city streets—were built on 300,000 tons of tailings hauled from the mill.

In the early 1970's, state Health Department officials became concerned about high levels of radioactivity in Grand Junction. Their investigation led to a federal-state program to locate and remove the tailings. Six

years and roughly \$7 million later, the program is only half completed.

Meanwhile, Dr. Anthony Robbins, Colorado Health Department director, said 1975 studies show that Mesa County, where Grand Junction is located, "has an acute leukemia rate twice the state average."

The figures are preliminary and "there is no scientific evidence yet to indicate an association with uranium mill tailings," Robbins said, "but the reason for concern is clear."

Robbins said Colorado's problems with uranium tailings go far beyond the nine abandoned sites in the state. "We have problems with mines, operating mills, tailings repositories and even with transportation," he said. "There are places in Colorado where there is roadside radioactivity left by trucks that rolled along those roads in the 1950's and 1960's."

In New Mexico, he state that produces about half of the nation's uranium concentrate, official concern also has been expressed about pollution caused by uranium mining and milling. Radiological dangers have been "severely underestimated" in the state in the past, a state health agency reported last December.

Several years ago, New Mexico officials sought an Environmental Protection Agency survey of groundwater contamination in the vicinity of several uranium mills near Grants, a fast-growing community in the western part of the state.

The researchers discovered that seven of 72 locations had radium concentrations in excess of standards. And downstream from one mill, their report said, "The shallow aquifer . . . has been grossly contaminated with selenium, attributable to excessive seepage from a nearby tailings pond."

The toxicity of selenium resembles that of arsenic and, if exposure is sufficient, can cause death, according to EPA documents.

The EPA study called for tightening of antipollution procedures at the uranium facilities, and the Nuclear Regulatory Agency is preparing new requirements for active sites.

Meanwhile, those who live or work near the abandoned tailings piles are frustrated by years of waiting for government action.

The owner of a garage door manufacturing firm, initially located near Salt Lake City's Vitro site, has moved elsewhere but has found no one interested in buying or leasing his empty buildings.

He would like to sue someone—but whom? "The upsetting part is that we really don't know where to point the finger," the owner, Jay Smart, told a reporter. "I just personally don't know what to do. What the hell kind of thing is this to live with anyway?"

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