

THE TRAGEDY OF YUCCA MOUNTAIN

NC CHAPTER HPS
MEETING

CHAPEL HILL, NC
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Aerial View of Yucca Mountain



SOURCES OF THE TRAGEDY

#1: INCOMPETENCE OF THE EPA STAFF

#2: FAILURE TO RECOGNIZE THAT RADIATION IS A WEAK CARCINOGEN

#3: LACK OF KNOWLEDGE OF RECENT ICRP PUBLICATIONS AND NCRP REPORTS

#4: POLITICAL INTERFERENCE BY KEY CONGRESSIONAL “LEADERS”

INCOMPETENCE OF THE EPA HEADQUARTERS STAFF

In stipulating that EPA would be responsible for establishing the standards for Yucca Mountain, Congress required that they request and follow the guidance of the National Research Council

The NRC recommended that, due to the temporal nature of the relationship between dose and risk (i.e., the rapid rate at which methods for the cure and/or prevention of cancer are being achieved) the standards be expressed in terms of risk

Even so, EPA rejected the NRC advice and stipulated that the standards be expressed in terms of dose

Exacerbating the situation, they later specified dose limits for one million years after closure of the YM repository!

CONFIRMING THEIR INCOMPETENCE

In seeking to establish dose rate limits, the EPA staff decided to compare the background dose rates in the Amargosa Valley to those in other areas. The conclusion of their contractor was that such information was not available, an area that DOE had described as *“the most thoroughly piece of real estate on the planet!”*

Further documenting their incompetence, the EPA staff failed to read the results of these surveys, one of which revealed that 91% of the inhabitants of the Valley live in mobile homes. As a result, the concentrations of radon to which they were exposed were comparable to those outdoors.

NAILING THE LID ON THE COFFIN

As a result, EPA estimated that the annual indoor radon dose rate was 3.5 mSv; Accounting for the fact that 9% of the residents live in conventional houses, plus other differences, the overall reduction in their annual dose rate was about 1.5 mSv, 2.0 mSv less

This is a factor of more than 13 times the annual dose rate limit of 150 μ Sv specified by EPA for releases of radionuclides from the repository

This emphasizes the wisdom of the recent statement of the ICRP (Publication 104) that “*expending disproportionate societal resources for controlling trivial exposures may not be the best possible way of implementing the Commission’s basic principle of optimization of radiological protection.*”

RADIATION IS A WEAK CARCINOGEN: STUDIES OF THE VICTIMS OF THE WORLD WAR II BOMBINGS IN JAPAN

Factor	Number	Percent
Survivors included in the original studies (1945)	86,572	100
Those alive 55 years later (2000)	~38,000	~44
Total deaths from cancer or leukemia due to all causes up to that time	~10,000	<12
Total deaths from leukemia due to radiation exposures (% of cancer deaths)	~100	1
Total deaths from solid cancers due to radiation exposures (% of cancer deaths)	~400	4

RADIATION IS A WEAK CARCINOGEN: STUDIES FOLLOWING THE CHERNOBYL ACCIDENT

Immediate deaths: Plant workers: ~50

Average doses: Recovery workers: cleanup: 240,000: 100 mSv
Evacuees: 116,000: 30 mSv

Studies: No strong evidence of radiation-induced leukemia or solid tumors, except for 5,000 thyroid cancers in children; none of these would have occurred if USSR officials had not sought to conceal the accident. Of these, only 15 had died 20 years later)

Major source of deaths: In contrast, several thousand fetuses were aborted due to dire predictions by the media of hereditary effects; this was in spite of the fact that studies of the children and grandchildren of the WW II Japanese bombings revealed no increase in hereditary effects

Nature of the Chernobyl plant: It had no containment vessel; it also had a positive void coefficient

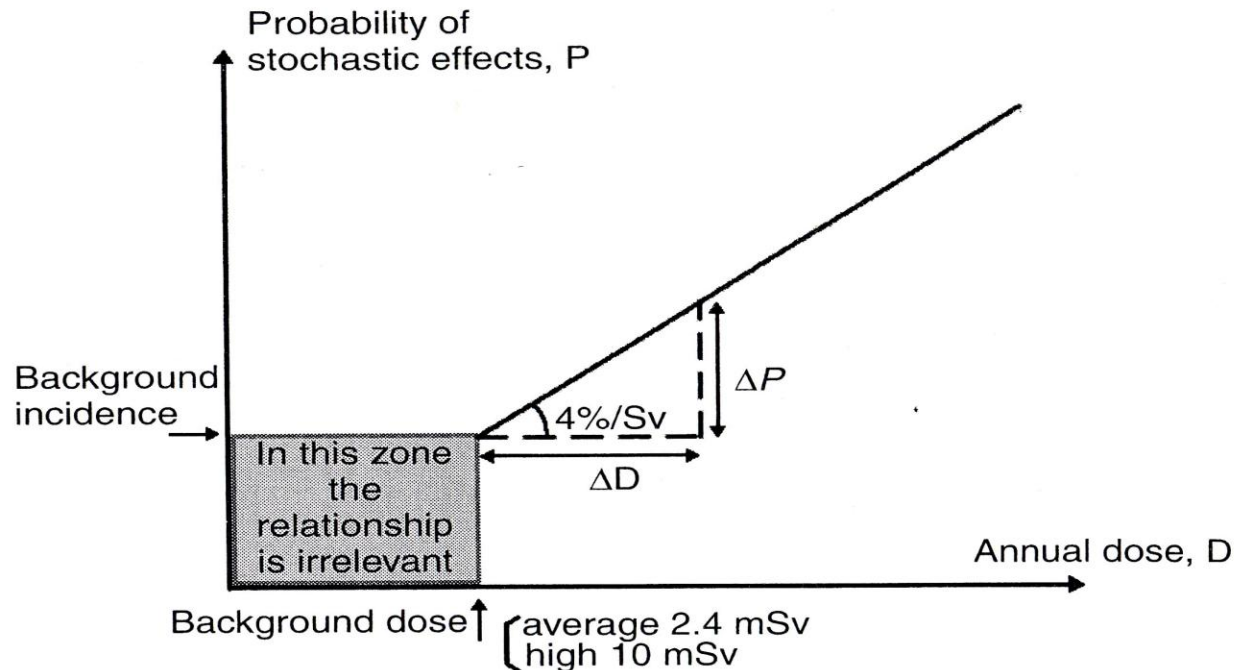
LACK OF KNOWLEDGE OF RELEVANT NCRP REPORTS

The NCRP (Report 116) stated that one of the most flagrant abuses of the LNT relationship, which was adopted solely to ensure that radiation protection standards were adequately conservative, was that, *since the relationship extends down to zero, any dose, however small, carries with it the potential for observable health effects*

In a similar manner, the NCRP (Report 121) cited the continuing erroneous use of the estimated collective dose resulting from 1 mSv to each of several million people, to claim that this would cause thousands of excess cancers

RESOLVING THE ISSUE

After patiently observing these types of abuses for decades, Dr. Roger Clarke, long-term former Chairman of the ICRP, prepared the figure shown below.



ORCHESTRATION OF A
PLAN FOR
CONSTRUCTING THE
YUCCA MOUNTAIN
REPOSITORY BUT NOT
PERMITTING IT TO BE
USED

INTERFERENCE BY KEY CONGRESSIONAL “LEADERS”

Beyond all doubt, the #1 culprit in this regard is Senator Harry Reid of Nevada

After viciously fighting the construction of the HLW repository, he abruptly arranged for Congress to specify that it would be located in his state

In so doing, he ensured that in excess of \$10 billion would be provided to Nevada contractors to construct the repository during the ensuing decade and that the state of Nevada would receive \$10 million per year to ensure that the repository “would be safe”

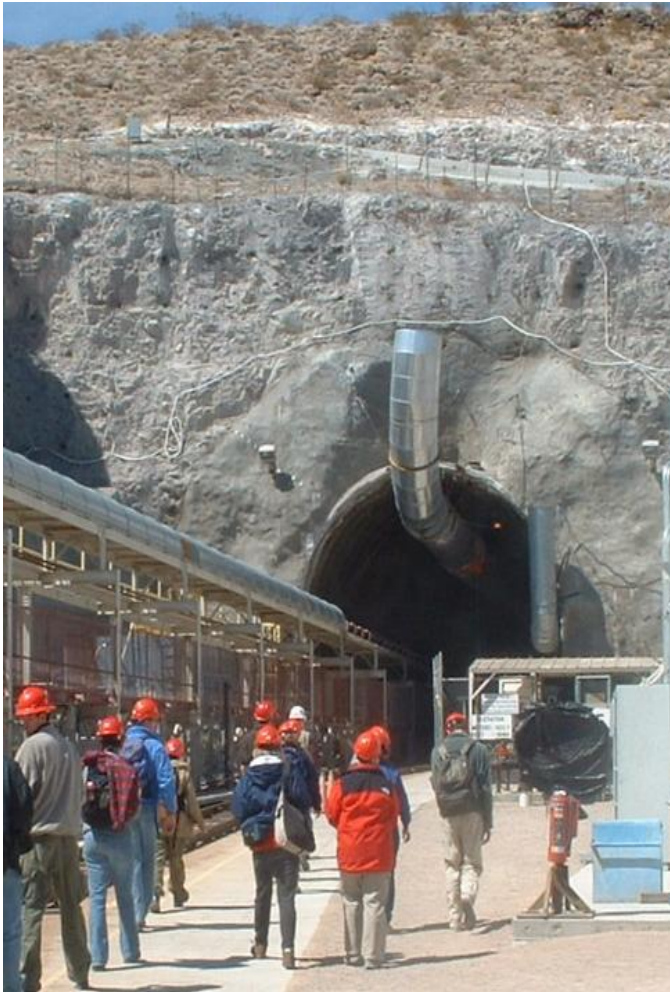
CONTINUING INTERFERENCE

Not satisfied, Senator Reid joined with the first Congressional leaders to endorse Barack Obama for President

The first week after being sworn in, he (in concert with Dr. Chu, DOE Secretary) terminated work on the construction of the repository

Not only was this a payback to Senator Reid for his endorsement, but it also ensured the State of Nevada would receive another \$10 billion to dismantle the repository. Presumably, Nevada will also be provided \$1 million annually to oversee this tragedy

YUCCA MOUNTAIN



STATEMENT OF DR. DALE KLEIN, OUTGOING USNRC CHAIR

Those who would distort the science of Yucca Mountain for political purposes should be reminded that it was a year ago today that the incoming President issued his memorandum on scientific integrity, in which he stated that “The public must be able to trust the science and scientific process informing public policy decisions.” I honestly cannot say if Yucca Mountain could ever meet the stringent tests that would allow it to be licensed. But I do know that, under the law, that licensing determination... and the technical evaluation of the science... is the NRC’s responsibility (March 19, 2010).

THE HPS NEEDS TO SPEAK OUT

EPA has a highly competent research staff at the Research Triangle Park

Are they aware of the continuing errors being perpetrated by the EPA Headquarters staff?

Do they know that those members of that staff who are qualified in radiation protection (i.e. who are CHPs) were not permitted to participate in the establishment of the YM standards?

In essence, the EPA Headquarters staff has been converted into a political organization, not one that provides scientific oversight

SPECIFIC DEFICIENCIES THAT NEED TO BE ADDRESSED

#1: The Incompetence of the EPA in the establishment of radiation protection standards

#2: The Congressional mandate that the USNRC must incorporate the EPA Standard into their regulations even when they know they are erroneous

THANK YOU FOR
LISTENING

Dade W. Moeller

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