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Premeditated Deceit: The Atomic Energy Commission Against Joseph August Sauter

Clifford T. Honicker
University of Tennessee, Knoxville

To the Graduate Council:

I am submitting herewith a thesis written by Clifford T. Honicker entitled "Premeditated Deceit: The Atomic Energy Commission Against Joseph August Sauter." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Sociology.

Donald A. Clelland, Major Professor

We have read this thesis and recommend its acceptance:

Thomas C. Hood, John P. Gaventa

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Vice Provost and Dean of the Graduate School

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"PREMEDITATED DECEIT"

THE ATOMIC ENERGY COMMISSION AGAINST JOSEPH AUGUST SAUTER

A Thesis

Presented for the

Master of Arts

Degree

The University of Tennessee, Knoxville

Clifford T. Honicker

June 1987

DEDICATION

This thesis is affectionately dedicated to my parents, my wife, and my kids. To my parents, I give thanks for telling neither Linda, Jan, Russ nor myself how to live our lives. Instead, they provided a living example for which we could follow. In the face of overwhelming adversity, insurmountable obstacles, they persisted in fighting for the things they believed in: truth, protection of the environment, and social justice. They sought to make our country a better place to live, no matter the personal consequences. If I can set such an example for my own kids, then I will know that I have been a "successful" father.

To my wife, Jackie, it could not have been done without her. It was her inspiration that got me back into the radiation research area five years ago. It was her insight, her penetrating analytical mind that kept me on the right track. And it was her selfless giving in raising the kids, while I was glued to the IBM tube, or away on research trips that made this dream a reality.

To Myles and Nick, boys, I am sorry for all the time I spent away from home. I worked so hard on all

this because I saw that some decent honest people had been wronged by our government. I thought if I did not do something about it, not only would they, but others would continue to be hurt by government officials that break the laws in protecting their own self-interest, rather than protecting you, me, and we, the people. That is what is was all about. If, by shedding light on what happened in the past, we can prevent it from happening in the future, in my own sons' lifetimes, then it was all worthwhile.

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The first two people I want to especially thank are V Weinberg and Wade Greene. Wade and the Rockefeller Family Associates helped in a number of ways. Alida Dayton at Rockefeller Family Associates provided the first foundation support of the Radiation Research Project. They have supported our work continually. I simply could not have done this work without their support. On a personal level, if there was any one person who stood out in my mind over the past three years, it would be Wade Greene. Being a former newspaper editor, he reminded me of my father, also a newspaper editor. I got from him the sense of "Get the story: get the facts straight, get the whole story. Do it right." If it took longer than I planned, it was for the reasons stated above.

When the going got rough, I knew there was one person from the foundations I could call, day or night for support. I turned to my dearest friend from the CS Fund, V Weinberg. Though responsible for tracking over 300 projects, she gave me the confidence to continue; hope that a hopeless problem could be fixed; and wisdom to accept failures along with successes. The financial support of the CS Fund

was appreciated, but no pot of gold is worth the kind of support that V gave. Without it, I probably would have thrown in the towel long ago.

Don Clelland went above and beyond the call of duty in helping complete this thesis. I think of no other man that the phrase "a gentleman and scholar" more aptly applies. Doc never, as Mark Twain said, "let education get in the way of learning."

To all the other people who have helped make this whole project a reality, I would like to thank more profusely than space allows. Nevertheless many thanks to Mary Lou Sauter Young for permission to write about her father, Joseph August Sauter; technical, legal, community, support from these people is greatly appreciated: Joseph Egan, Richard L. Miller, Barbara Johnson, Patty Kakac, Becky Glass, Norman and Diana Fleishman, Jim Hare, Kathy Donahue, Dr. Roland Finston, Dave Dotson, Chuck Shuford, Paul Deleon, Charles Thomas, Valeria Crumley, Drs. Barton Hacker, John Gaventa, Belton Burrows, and Tom Hood. And for helping clear the cobwebs, special thanks to Ruth Darling.

To those fine people at the foundations that supported my work, and the work of the Radiation Research Project these past years, I would like to

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Many thanks are due to Alan Gullette for his work as chief computer person on the Radiation Research Project, and Anne LaCava, at the University of Tennessee--they knew exactly what they were doing.

Finally, I would gratefully, respectfully like to thank the people of Minnesota, such as Retired Federal Judge Miles Lord, Dr. William O. Caster, the late Dr. Maurice Visscher, the late Senator Hubert Humphrey, and others, who sought to protect the rights, the health and safety of Minnesotans against the deleterious effects brought about by the federal government's actions during the height of nuclear weapons testing in the late 1950's. Their courage, their persistance, their willingness to take a stand is a lesson for all of us to learn.

ABSTRACT

About 130 miles northwest of Minneapolis, lies the farming community of Farwell, Minnesota (pop. 103). This is the case of Joe Sauter, a sheep farmer who in 1958 filed a claim against the Atomic Energy Commission for loss of livestock, damage to trees, and personal injuries that he believed were the result of radioactive fallout. This case will detail the efforts of the AEC to cut short the claim of radiation injury by suppressing key radiological data which would have substantiated Sauter's claim and proved damaging to the AEC.

Officials within the AEC knowingly and willfully made false statements and representations, not only to Sauter, but to the agricultural representatives who investigated the sheep deaths on Sauter's farm on behalf of the AEC.

Later, Sen. Clinton Anderson (D-MN), chairman of the Joint Committee on Atomic Energy, and Sen. Hubert H.Humphrey, chairman of two subcommittees on disarmament and international health, both made specific requests to the AEC for radioactive hotspots in Minnesota and North Dakota. The AEC withheld the information learned on Sauter's farm in order to protect the broader interests of the AEC in producing nuclear warheads and promoting nuclear energy.

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HISTORICAL OVERVIEW

The dawn of the nuclear age can be seen as the product of three points on a triangle; 1) an idea that it was possible to build an atomic bomb; 2) a country rich enough to devote vast sums of money in turning that idea into a reality; and 3) the power to keep the idea secret while the bomb was being made. Fully explaining any one of these three points on the triangle that led to the successful explosion of the Trinity shot on July 16th, 1945 could be a book in itself. The first two points of the triangle are richly illustrated in the government's own official historical accounting of the times (see Hewlett and Anderson, Jr.: 1962). While much as been written on the first two points, little has been written on the systematic use of secrecy and coverup to influence the direction and momentum in the development of the American nuclear programs. There are several obvious reasons for this, the most obvious reason of course being the difficulty in gaining complete access to the necessary information, even thirty years after the fact. For instance, it was necessary to initiate and direct a Congressional investigation to obtain much of the material contained in this thesis. As

this thesis will point out, the full story is still being withheld.

The heart of the thesis is a detailed case study of Joseph August Sauter, an obscure Minnesotan sheep farmer. The case will be presented in the historical context of the atomic fallout issue in the state of Minnesota. The study will focus on a socio-historical account of one man's struggle with the Atomic Energy Commission in gaining the truth about fallout with its possible damaging effects to both livestock and vegetation. The AEC was charged with the impossible duty of both protecting the health and safety of the American public against the deleterious effects resulting from nuclear weapons testing, as well as the creation, production and testing of new nuclear weapons for the US atomic arsenal. This thesis will demonstrate how Atomic Energy Commission officials broke specific laws in in order to protect their own organization. They failed not only in the area of protecting the health and safety of the American public, but committed transgressions against American citizens' basic rights of due process as guaranteed under the US constitution.

It should be noted the subject at hand is an extremely difficult one to study without getting immersed in scientific and technical details, from the makeup of the bomb, to the process of a fissionable chain reaction, to the radiobiological effect of ionizing radiation as it

penetrates the human body. Since it is important to understand the scientific rudiments of the story, technical explanations will be given in lay terms. The study will demonstrate that high ranking officials of the Atomic Energy Commission, in their capacity as "scientific experts" made political decisions based on questionable scientific grounds, at best.

I will begin with a very brief history of the development of the atomic bomb and the subsequent development of the Atomic Energy Commission.

The Men Behind the Bomb

The two men most credited with the idea that the bomb could be built were Leo Szilard a Hungarian born physicist and Albert Einstein. Szilard became convinced 1) that an atomic bomb could be built that would release tremendous amounts of energy and 2) that Hitler, who controlled the only known large uranium mine (located in Czechslovakia) was working on developing it. In 1939, he went to France and England with his ideas, but was scoffed at by the military officials. He then came to America and convinced Albert Einstein to write to President Roosevelt on his idea.[1]

After a meeting with Einstein, Roosevelt appointed a secret advisory scientific committee to determine the

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[1]See Pringle and Spigelman (1981) for a more comprehensive overview of this period.

feasibility and funding of an atomic weapon program. In 1942, the S-1 Committee so recommended in order to guarantee that Hitler would not be the only one to have an atomic bomb. In September, 1942, General Leslie Groves became director of the top secret bomb-building project code-named "Manhattan Engineer District" (MED). The best and brightest scientists in the field of physics, engineering, and radiobiology were lifted from their various fields and drawn together for the single greatest experiment of mankind. The prestige and challange that the project offered were unparalleled. The design and machining of the bomb began in ernest. MED was given a "blank check" for expenses.

The Manhattan project would become the most expensive and the most secretly conducted government program in history.

> The Manhattan Project was the most expensive single program ever financed by public funds. The physicists' bill for working out the theories had been paid in modest sums of $100,000 here and there, but the engineer's bill to construct the first atomic bomb came to more than $2 billion (Pringle and Spigelman, 1981: 16).

For men like General Leslie Groves, the director, the project had to succeed, or else they would be spending the rest of their lives explaining their failures.

Despite massive operations in Oak Ridge (Tennessee), Chicago, Hanford (Washington), and Los Alamos (New Mexico), the thousands upon thousands of workers, scientists,

engineers, doctors, truck drivers were all sworn to secrecy as to their immediate occupational tasks, and most did not know their own ultimate role. Work was compartmentalized so that one group of people did not know what other people were doing. Massive redundancy between the different sites was a byproduct of the compartmentalization of knowledge. Some of the top physicists risked their security clearances in a visit to Oak Ridge by telling the Oak Ridge scientist that a particular experiment they were conducting was no good. The same experiment had been tried at Argonne and simply didn't work (personal interview with Allan Kline, March, 1986).

In April, 1944, the allies became aware that the Reich had not come close to creating an atomic weapon but had merely begun the chain reaction process in a graphite pile reactor, a "first step" technically. But the momentum to complete building the bomb was great, spurred by the problems of how to win the war in the Pacific decisively and quickly.

The first continental test of an atomic bomb, code-named Trinity, was on July 16, 1945. The bomb was set on top of a 100 foot tower in the New Mexico desert called Jornado del Muerto (Journey of Death)and detonated just before dawn. There was some debate that the oxygen in the Earth's atmosphere would ignite, but scientists set the odds at 3 in 1,000 and decided to chance it. Wagers were made between the physicist on the explosive force of the bomb.

After the first explosion of a nuclear bomb J. Robert Oppenheimer made the remark that has oft been quoted "I am become death, shaterer of worlds." Historical accounts of this event often color the event in sorrowful, somber tones. Personal interviews with two physicists on the team that developed the Nagasaki bomb painted a different picture to this author. One responded,

> Our first reaction was one of elation, `it works, we did it!' Our second reaction was, the war is over. Simple as that. We were elated over both facts. The first thing that we did was go into town, get our haircut almost down to the scalp [hot particles from the blast had stuck in their hair] and go have a beer (interview with Allan Kline March, 1986).

The nuclear arms race between the USSR and the US began six hours after the Trinity shot on July 16, 1945, when, over the table at Potsdam, Truman decided not to tell Stalin of the Allies' atomic success. A coded message arrived from General Groves, informing him that the baby had been born and was larger than all previous estimates. What Truman did not know was that Stalin was kept apprised of every step of the development of the bomb by a Soviet spy on the Los Alamos team of physicists, Dr. Klaus Fuchs (Pilat, 1952).

The campaign of secrecy worked extremely well with both the Japanese and American populace. The two bombs dropped on populated areas in Japan were chosen for their symbolic value so as to demorilize the enemy. People in Hiroshima did not even seek cover when the Enola Gay flew overhead. A

single B-29 plane, they thought it was simply a weather reconnaisance plane.[2] Americans were equally shocked, but they were elated that a long and painful war had come to an end.

No less surprised by the revelation of the bomb was the United States Congress. It had never been officially informed of the Project. Even Vice President Truman had not been told of the project until Roosevelt was on his death bed. The bomb was dropped when Congress was in summer recess. Upon their return however, there was a flurry of activity on how to control the awesome force of the atom. Between September and December, 1945, no less than fifty bills were introduced by legislators on the control of the new nuclear weapons and power program. The central issue of contention was whether the military should continue control, or whether control should be turned over to the civilians. The issue was settled in a characteristically politically expedient compromise: the ultimate control of the new program would rest in the hands of civilians, while the military would oversee the production, development and testing of nuclear weapons (Ball, 1986: 20).[3]

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[2]For a graphic, unforgettable account of the human destruction of the nuclear bomb, see Hersey (1946).

[3]For a more comprehensive look at struggle over civilian versus military control of the nuclear weapons and

(Footnote Continued)

Immediately after war, the government went to great pains to control adverse information about radioactive "after effect" of the bomb. MacArthur imposed a ban on any Japanese newspaper articles dealing with reports of A-bomb damage, calling them "inflammable" and "needling." However, others found that "in the long run, the radiation from the bomb was more significant than the blast or the thermal effects" (Miller, 1986: pg 61).

Many of the scientists at Los Alamos who were on the teams that developed the first atomic bombs returned to their positions at universities or went on to prestigious positions in industry. Though they could now tell their relatives, friends and colleagues that they had worked on the bomb, they could tell no one the specifics of the making of the bomb. The penalty for disclosure--up to life in prison.

Some, embittered over their involvement in the project left the field of nuclear physics altogether.

By August 1, 1946 Truman signed the McMahan bill, creating the Atomic Energy Commission law. Five civilian commissioners would make up the board of the AEC. The commissioners gave broad latitude to the field managers in the day to day operations of the directed operations offices

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(Footnote Continued)
energy program, see the debate in Congress over the McMahan bill and the May-Johnson bill, in Smith (1965).

across the country. At the time of its inception, the combined operations of the AEC were larger than even those of General Motors. The chairman of the AEC, according to H. Peter Metzger was head of the "glamour agency" and was number four on the protocol list in DC. This entitled him to appear at state functions just after the Vice-President, the Secretary of State, and the Speaker of the House (Metzger, 1972: 81).[4]

In 1946, two months before the AEC bill was signed into law, the military set up the first, publically announced nuclear weapons test in the Pacific Marshall islands. Code-named "Crossroads," the test involved the detonation of two nuclear bombs, with 42,000 servicemen watching from ships eight miles away. The tests created so much radioactivity that a third nuclear explosion was cancelled. According to Congressional records, the Radiation Safety Officer was threatened with a court martial for his stand that the third shot be cancelled due to the radiological "nightmare" created by the fallout.[5] Nevertheless the 42,000 men at the test were told they received an insignificant amount of radiation and were soon shipped home.

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[4]See also Ball (1986), for a discussion of the development of the new agency and the management problems soon encountered because of the enormous size of the agency.

[5]See Bradley (1948) for an account of the Crossroads experiment.

The logistical difficulties of moving over 5,000 miles precision equipment, with thousands of men and support material, led the military to find a site closer to home for "proof-testing" their newly designed nuclear bombs. In January, 1951, the AEC began testing of nuclear weapons at the Nevada Test Site. The above ground testing at Nevada would continue for over a dozen years. In all, over 110 nuclear explosions were detonated in the twelve year period. More than a quarter million servicemen participated in the atmospheric nuclear weapons tests. Some viewed the tests from airplanes, others from trenches eight miles away. A few in volunteer programs were stationed as close as five hundred yards from ground zero. The explosive force of some of the nuclear shots were as little as 400 pounds (Titania 10/30/58, in the Operation Hardtack II series) others topped the scales at a wolloping 74 kt (Hood 7/5/57 in Operation Plumbbob series) or over three times the explosive force of the bomb that decimated Hiroshima (Allen et al, vs USA, 1984: Appendix C of the Memorandum Opinion).

An inevitable byproduct of the nuclear weapons test program was radioactive fallout. It was known from the days of Madame Curie (discoverer of Radium) that radiation caused injury to human cells and tissue. Radiation can affect a living human cell in one of three ways. In the case of gamma rays, the ionizing radiation may pass directly through a cell, causing no damage whatsoever. Or, the radiation may

pass through the cell, destroying everything in its path. In either of these two cases, no long term harm is done. The damage is done when the radiation passes through a cell and partially destroys the genetic code of the cell. The cell may lie dormant for a number of years. Then, for reasons that are still not clear, the cell will begin replicating at a fantastically rapid pace under the new genetically altered code. The altered cells are known as "cancer".[6]

Scientists, legislators, and citizens in the 1950's were extremely concerned about fallout from the nuclear weapons test site in Nevada. Of the short lived isotopes, Iodine 131 was the most damaging. By mimicking stable iodine, the I-131 bombarded the thyroid and could later lead to thyroid cancer, or diseases and disabilities related to thyroid destruction.[7]

The isotope that worried most people however, was strontium 90. Sr90 is chemically similar to calcium. The

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[6]For a more scientific explanation of radiation and the carcinogenic process, see the opening chapters of Gofman (1981) and Allen Vs USA, a Memorandum Opinion "II. Background: Basic Principles of radiation and Nuclear Physics," 10-50; 98-129; and 318-406.

[7]See Ball (1986) "Association Between Radiation Exposure from Nuclear Fallout and Cancer: the Medical Controversy, 1961-1985," particularly references to the Knapp study (1963) and the Rallison study (1974) on radioactive iodine and cancer induction.

predicted pathway to humans was that fallout would settle on vegetation which grazing cows would then consume. Strontium 90 would then concentrate 50-100 times above normal in the cows' milk.[8] The strontium 90 would again concentrate in the bones and teeth of children drinking the milk by factors of 50-100. With its relatively long biological half-life of 28.3 years, and its tendency to deposit in the bones, Americans were extremely concerned that the weapons testing would lead to increases in bone related cancers such as leukemia and osteosarcoma.[9]

Managing the fallout, both physically and politically was the most difficult obstacle in the carrying out of the nuclear weapons testing program by the Atomic Energy Commission. Max Weber (1946) warned of bureaucracy's natural tendency to centralize power for its own benefit. The response of the AEC to potential political conflict and redirection of its goals was the use of secrecy and

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[8]"Above normal" is really a misnomer, since strontium 90 does not occur naturally in nature; there is no "normal" or "natural background" level of strontium 90.

[9]On the concern Minnesota scientists had over strontium in Minnesota wheat, see chapter four below; at the national, Congressional level, see the discussions of concern over strontium throughout the 1957 hearings on the "Nature of Radioactive Fallout and its Effect on Man" before the Special Subcommittee on Radiation of the JCAE May 27 through June 3, 1957, particularly 141-161.

classification of information as a means of self-protection. Such control of knowledge is a form of power. As has been indicated by Edelman (1964) and Muller (1973), government bureaucrats have the resources to reconstruct "reality" in their own interest through the suppression of information and the manipulation of politically charged symbols.

I will return to this historical account in the concluding section, in which I will apply Lukes (1975) conception of power in an analysis of how the Atomic Energy Commission became one of the most powerful governmental institutions in American history. By rigidly controlling the flow of information and the production of knowledge on fallout, the AEC was able to persuade the public, Congress, and the Courts as to the safety of the nuclear weapons testing program despite, evidence to the contrary. As this thesis points out, however, intellectual dishonesty and political expediency often got in the way of the true facts of fallout and its effect on livestock, vegetation and ultimately man.

CHAPTER II

METHODOLOGY

"Special Cases:" Congressional Investigations

The work for this thesis began over three years ago, when I discovered a unique set of files in the personal collection of Dr. Stafford Warren, MD., in the Radiological Archives of the University of Tennessee. Dr. Warren was the medical director for the Manhattan Division from 1943 through 1945. In 1946, he turned down the position of director of the Division of Biology and Medicine for the Atomic Energy Commission, and instead opted for heading the Los Angeles Atomic Energy Project at the University of California, Los Angeles. From time to time, in the 1940's and 50's, Dr. Warren was called by the AEC to act as a medical consultant on cases where individuals claimed injury to radiation.

The set of files that I discovered dealt with approximately 20 individuals: some atomic workers from the Manhattan Project days; some people downwind from nuclear tests who claimed injury from weapons fallout; others were servicemen who took part in the Atmospheric Nuclear Weapons Tests. Many of the people in the files exhibited classic symptoms of radiation injury. All the cases were denied diagnosis, treatment, or compensation for their radiation

injury. However, in some cases the radiological records documented overexposures, and/or individuals were surreptitiously studied as "research cases." Physical exams were set up by the Atomic Energy Commission, in their own words "Solely for Public relations."

In some cases, individuals who claimed injury repeatedly requested the radiological information. After conferences, telexes, phone calls, and internal agency memos, one very meritorious claimant was told that the records he requested simply did not exist; if the records which he requested were collected at all, they were collected out of personal curiosity of the scientists involved, the records simply no longer existed. Yet the records to which the top level AEC officials referred to were found in the 250+ page AEC medical/legal dossier kept on this man. The chief medical consultant directing the investigation of the case, Dr. Stafford Warren, had copies of both the letter denying the existence of the records, and the non-existing records in his file.

The policies and practices found in the files touched on the lives of the 250,000 servicemen who were participants in the nuclear weapons tests from 1945-1962; the countless number of people exposed to radiation downwind from nuclear tests; and the 600,000 people who have worked in nuclear weapons facilities across the country including the 120,000 people currently employed. There are over a thousand

lawsuits in today's courts that have been brought by people alleging radiation injury from past government nuclear operations. Most cases are lost by the plaintiffs for lack of evidence. Radiation injuries, in most cases, leave no smoking guns. Radiation affects the human cellular structure in one of three ways. Two of the three ways are not harmful. The first way, is that a wave of gamma radiation, for example, may pass cleanly through a cell and not cause any cell disruption. The second way is that the cell may be completely destroyed by a burst of radiation, in which case, new cells are produced to replace the old one. The third way radiation disrupts the cell is by passing through and destroying pieces of the DNA structure. By doing so, it changes the code of the DNA. The cell might lie dormant for twenty years, then begin replicating itself with the altered DNA code. That altered code may result in any of a number of cancers.

Unlike other diseases such as asbestosis, bysinossis which can be traced back to their origin, and sillicosis, radiation induced cancers are nearly impossible to prove. That is why complete, honest accounts of one's exposure to radiation are so important to literally thousands of people in today's society.

After reviewing the hundreds of pages of documents in the set of Warren files, I concluded there was at least an unspoken policy to protect the interests of the Government

in radiation injury cases in the 1940's and 50's. The 1940's and 50's were a time of rapid development of both America's nuclear weapons and nuclear energy programs. "Adverse publicity" as a result of these, and other documented cases of radiation injury coming under public scrutiny could have hindered the momentum of these two areas vital to the development of America's national security. So, in the interests of broader American interests, certain government officials chose to subvert the rights and due process of American citizens by withholding crucial information.

That is why the conclusion of every case in the files closed with words to the effect that there was "no connection between your condition and exposure to radiation" despite the fact that some of the cases had documented records showing over-exposure to radiation.

In persuing my research, I later discovered the file of Joe Sauter which became the main focus of this study. His case is a classic example of governmental abuse in suppressing critical radiological information.

I chose to do my master's thesis on this subject because I thought it would be helpful not only to the 1100+ people with over 2 billion dollars of claims against the government for radiation injuries, but I thought it would be extremely important to have an accurate account of what happened during the formative years of both the American

nuclear weapons and power programs. I realized that getting more information than what existed in the original files I had found would be difficult to impossible. Going through the process of the Freedom of Information Act would be vitually useless, as the Privacy Act of 1974 forbade the government from releasing documents that contained information that would consitute invasions of privacy of American citizens. Needless to say, sensitive medical and legal records fall under the provisions of the Privacy Act.

I wanted to get into the central repositories of the Department of Energy's predessor agency, the Atomic Energy Commission. If consultants to the AEC kept their files on radiation injury cases, surely the government would have them housed in their main repository in Washington, DC.

The only governmental agency that could help me, I decided, was a Congressional committee or subcommittee assigned as a watchdog to the Department of Energy. On the recommendation of an executive director from one of the foundations that has funded my work in the past, I went to the Energy, Conservation and Power subcommittee. Before meeting with them, I had written, for their review, summaries on cases from the files that represented the government's treatment of a nuclear worker, an atomic veteran, and an individual claiming injury from fallout.

On April 24, 1984, I met with Jeannine Hull and Allison Freeman of the Energy, Conservation and Power Subcommittee,

chaired by Representative Richard Ottinger (D-NY), of the House Energy and Commerce Committee. I invited Geoff Sea, health and stafety representative of the Oil, Chemical, and Atomic Workers Local 3-689, Piketon, Ohio, and Atty. Cooper Brown, general counsel of the Washington, DC, office of the National Association of Atomic Veterans. I asked them to speak on how the research affected the rights of nuclear workers and atomic veterans.

I requested the assistance of the subcommittee in gaining access to the central files of the AEC, in order to not only document the cases (such as the Sauter case) which we already had, but to attempt and uncover any policy papers which justified or ordered the suppression of critical information from alleged radiation victims. The number one priority that I had set for working with the subcommitee was that no information would be released prematurely, otherwise DOE would be given a virtual "roadmap" on where to find similar incriminating documents and bury them even deeper in their respositories, if not destroy them altogether. The subcommittee staff agreed.

The initial response of the subcommittee to my findings was overwhelming. Within an hour after our meeting, they drafted a letter to the DOE Secretary Donald Hodel, stating that a Congressional investigation was now underway on the entire medical/radiological record keeping system of the Atomic Energy Commission. They requested that I come to

Washington and lead a Congressional investigation on the matter, and they would lend me the needed subcommittee staff to do the job. I accepted.

Three weeks later, I joined the subcommittee on an unpaid/temporary basis; I would lead the research effort into the AEC/DOE Division of Biology and Medicine (DBM) archives. DBM was the leading branch in the AEC responsible for evaluating, and subsequently suppressing the critical radiological and medical information from the public. The division within DOE that had assumed the responsibility of the AEC's Division of Biology and Medicine was the Office of Health, Environment and Research (OHER). OHER was headed by Dr. Charles Eddington.[1]

I met, along with two staffers from the subcommittee, with Dr. Eddington, his assistant Dr. Thiessen, and the head of records for OHER, Mr. Joe Diel. The meeting took place the last week of May, 1984, in the DOE complex in Germantown, MD. The complex, built during the the 1950's,

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[1]Dr. Eddington had been with the DOE and AEC for over two decades. He was involved in the 1960's human experiments in which prisoners from Washington and Oregon had their testicles irradiated, some up to 600 rads. The experiments were designed to simulate the effects of cosmic radiation that future NASA astronauts might incur from space flights. The only other place that experiments of this type were conducted on humans was in Nazi Germany in the early 40's. Dr. Eddington had been involved in getting the experiments funded (ABC World Evening News Special by Karen Burns, November 19, 1984).

originally housed the Atomic Energy Commission central offices. In the lobby, a scaled-down model of the Trinity bomb commemorates the development of the atomic bomb.

For an hour, we discussed the record keeping policies of the AEC/ERDA/DOE. Each of the officials assured us that records were scrupulously kept on individuals working in the DOE facilities. All the while, the officials asked indirect, and finally directly, what exactly was it that we wanted? At the end of the hour, we answered with a question: "Where are the records of the Division of Biology and Medicine."

Each DOE official looked at the other, waiting for the other to respond. Finally, almost in unison they answered that they did not know where they were. This is despite the fact that three men had worked in the AEC, had risen from the ranks of the Division of Biology and Medicine since the 1950's and 60's. They said they would research the matter and get back with us. Without telling them what we wanted, they had still gotten more information out of us than we had gotten out of them.

The next day, I unwittingly broke Congressional "protocol" by setting up a meeting with the Chief Historian of the Department of Energy, Dr. Jack Holl. Congressional protocol is an unwritten code of ethics that is applied to Congressional investigations. When setting up the meeting with Dr. Holl, the correct procedure would have been to

first contact the Congressional Liaison office of DOE and have them not only set up the meeting, but have a person from their office attending the meeting. The liaison official would take notes of the conversation, often interjecting on behalf of the DOE official in fielding difficult questions.

Being with the subcommittee less than week, I was not aware of the unwritten laws of Congressional protocol. Dr. Holl met with me and after a 30 minute chat told me the exact location of the files I was seeking. Dr. Holl is in the same office complex as Dr. Eddington, Thiessen, and Diel.

According to Dr. Holl, one of the last acts of the Atomic Energy Commission was to appoint a custodian to the old AEC records. Holl is the successor to the original custodian of the files. When asked of the location of the DBM files, Dr. Holl said they were stored in 17 different vaults and secured areas within the DOE complex in Gernmantown. In addition to the 17 areas, records were kept in the DOE Records Center, also in the Germantown complex. The files in the Records Center were in transition, being sent from the central DOE archives to one of the regional Federal Archive Records Centers. Within each Division in the AEC, there was a custodian of the records who was responsible for keeping an index of the files which went from the Records Center to the regional Federal Archive

Repositories. Given the length of time which Eddington, Thessen and Diel had been with the DOE/AEC and given the fact that Diel was the head of records for that Division which was responsibile for the DBM files, it was hard to believe they did not know of the location of their own files, only three floors away from their own offices.

The subcommittee notified Dr. Eddington and the DOE Congressional Affairs office that we had located the files. DOE's response was surprising. I did not expect DOE to contratulate me for so quickly locating the fiels, but neither did I expect a DOE attorney to call up the staff director of the Energy Conservation and Power subcommittee and admonish him for letting his staff people contract DOE personnel without first going through the DOE Congressional Affairs office. The subcommittee informed the DOE attorney that I was new on the staff and would not do it again.

Though the subcommittee requested immediate access to the files, the DOE denied access for over two weeks. On June 8, 1984, I drew up a procedure paper for reviewing the files once DOE had given us access to them. Conflict was beginning to rise between me, DOE and the subcommittee. I believed that DOE was not justified in delaying the subcommittee access to 25-38 year-old files; I believed that the subcommittee was not pushing hard enough to gain quicker access to the files. I felt that if the AEC had in the past systematically suppressed information which would prove

damaging to the agency, then the DOE would be very hesitant to come forward with that information, even though over twenty years had elapsed.

In the procedure paper, I outlined the "best of all possible worlds" method that the subcommittee should have used when reviewing the files: first, a congressional investigator security-cleared for reviewing classified documents should go over the papers--a close accounting should be taken of the number of pages in the file folders so as to make it harder for the DOE to lift material from the files; second, the subcommittee staff should have the right to copy the material rather than have a DOE employee copy it; third, the subcommittee should have the right to bring the material directly from the DOE secured vaults to the reviewing rooms to insure that DOE did not take material out of the files.

I felt that these procedures, if used, would increase our chances of obtaining unaltered files, but I told the subcommittee there was a good chance the files were already in the process of being reviewed and gutted by the DOE. I was told by the subcommittee that DOE had never stalled more in providing the subcommittee with records this old, and that there was nothing the subcommittee could do but wait. I called up Rep. Ottinger's personal secretary to set up a meeting with him, in order 1) to find out if he was even aware this investigation was underway; and 2) to confirm

that the subcommittee was doing all it possibly could in gaining immediate access to the files. However, I was informed by Ottinger's secretary that since I was now part of the subcommittee staff I would have to go through the staff director of the subcommittee to have an appointment made. I immediately requested a meeting to be set up with Ottinger through the staff director, but he refused to set up the meeting. I was openly critical of the way the investigation was being handled, and the staff director seemed not to want this dissension to reach Rep. Ottinger.

On June 12, 1984, the subcommittee was given access to the AEC's Divison of Biology and Medicine files. It was clear that DOE had already gone through the files and taken out incriminating information. The subcommittee has both direct and indirect proof of this. The physical appearance of the folders was the first indication the files might not be complete. Folders which were over 30 years old had what appeared to be brand new metal prong brief fassteners attaching the papers to the folders. Indentations in some of the file folders told of an earlier time in which the folders held many more papers than the single page which they now held.

Examples of questionable files included: A file labeled "Medicine Health and Safety Medical Services, Case Histories" contained in it a single page with the partial details of a single case history of a worker suffering from

exposure to beryllium (Box 3354, File 20). Yet, in another file labeled "Treatment and Illness," this research found references to 21 other beryllium cases in AEC or AEC contracted facilities for the same time period as that covered in the "Case Histories" file; another file entitled "Medicine Health and Safety Claims--1953" held only a single claim.

Material was also improperly filed. A man claiming he was exposed to radioactive fallout while prospecting for uranium in 1955 was found in the file folder "Embalming and Autopsy Procedures--1953."

Despite the brand new brief fasteners; despite the files labeled "Case Histories" and "Claims" each containing only a single page of paper; despite the file folders with creases in the sides which obviously meant the files previously held much more--despite all this, the assistant to the director of the DOE History Division, Mr. Prentice Dean, told me that the files had not been altered in any way since they had come into the historian's possession (Memo, Honicker to Hull, 6/20/84).

I informed the subcommittee in detailed memos of the evidence strongly suggesting the files had been altered. The subcommittee staff responded that there was no way we could "prove" the files had been altered as a result of the congressional investigation, short of a DOE "whistleblower" coming forward and admitting that he or she had seen files

being gutted. At the end of the two weeks spent in the files (and with no replacement help forthcoming from the subcommittee staff after my helper had left to work on the Mondale campaign), I requested that my wife, Jackie Kittrell (a lawyer who is also a health and safety technical advisor to the Atomic Trades Labor Council in Oak Ridge) be brought into the research, again on a voluntary basis, to help systematically and thoroughly document the inconsistencies in the altered files. The subcommittee rejected the request out of hand, citing the fact that two people from the same non-profit organization (the Radiation Research Project), who were also married, would be viewed as nepotism and would cast a bad light on the image of the subcommittee. The subcommittee offered to look around DC for help, or to have an intern work on the project, but no one with the proper qualifications was found. I questioned their reason of nepotism as the basis for refusing to bring Ms Kittrell into the investigation, since nepotism, by the very definition of the word, implies a paying job; the subcommittee staff, in effect, turned down free, experienced and qualified help to work on the investigation, when no other help was to be found. My confidence in the subcommittee's direction of the project was quickly eroding.

At the end of June, 1984, I requested an index of the Division of Biology and Medicine files from Dr. Eddington's office, files which were stored at the Federal Artchive

Center in Suitland, Maryland. Among the 200+ pages of index file names were five pages of "Special Cases" listings. Over 80 "special cases" were listed under the title "ASEV Central files for 1945-1962" (Radiation Exposure Files). Nearly half the cases were classified, confidential, restricted, or secret. Other cases were marked "Official Use Only," which was not a security classification, but which nevertheless restricted public access. Some of the cases listed in the index were the same as the original files that launched the investigation. I knew we had found what we were looking for.

Given the questionable integrity of the files which the DOE had already provided to the subcommittee, I thought it imperative to develop a different strategy whereby the files could be immediately seized, rather than giving the DOE ample time to edit out the sensitive papers.

I was informed, however, by my subcommittee supervisor, Jeanine Hull, that there was no other way to obtain the files rather than filing a request with the DOE and giving them a reasonable time to provide the files to the subcommittee.

To determine what a "reasonable time" was, I called the Suitland repository and asked how soon the records would be accessible to the subcommittee. Mr. Jack Saunders in the Records Certer informed me that if the material had an accession number and the subcommittee had the approval of

the DOE division that "owned" the files, then the files would be available at the repository for review the following day. I immediately called the DOE Congressional Affairs Liaison, Mr. Harold Kneeland, and asked him how long it would take to get the files once the request was made. He replied that it would take no more than a few days.

On July 10, 1984, I drafted a request on official subcommittee stationary, requesting the specific files and also requesting specifically that the files not be altered, removed, or destroyed. The letter was to be signed by the Chairman of the subcommittee. I gave the draft letter to his subcommittee supervisor, Jeanine Hull. Ms Hull ordered me to redraft the letter, leaving out the paragraph which requested DOE not to alter the files. Her explanation was that she did not want to offend the Congressional Affairs Liaison person. She further instructed me to: 1) direct the memo, not to Secretary of Energy Donald Hodel, but to the Congressional Affairs Liaison Harold Kneeland; 2) not to have the memo come from the chairman of the subcommittee, Rep. Ottinger, but from me and her; and 3) not to have the memo go over on official Energy, Conservation and Power Subcommittee stationary, but on a plain sheet of paper. Her reasoning was by doing it "informally" through the congressional affairs person "that things would get done quicker" than sending over a formal request.

Rather than providing the files to the subcommittee in one or two days, DOE took ten days to give the subcommittee access to four boxes of files which were over twenty years old and which were within arm's reach of the Suitland archive records official. When I expressed frustration with DOE congressional affairs staffperson Harold Kneeland at taking so long in providing these files to the subcommittee, he responded that his reviewers worked hard to get the files reviewed and to the subcomittee in ten days, and that he did not know it was an urgent matter. He said he would have gotten the material to us sooner had we made an "official" request, rather than making the "unofficial" request to him on plain stationary.

Again, unfortunately, it was the same story as with the files which we had already reviewed from the DOE archives in Germantown. It was even harder to justify why twenty- to forty-year old files would have brand new metal prong fasteners attaching the files to the folders unless it was done in an attempt to hide the discrepancy in the bend of the older fasteners if a large amount of papers had been removed. Unlike the other files reviewed earlier, these four boxes did not contain any box or job classification numbers which a researcher would normally need to identify and call up the boxes for research purposes. For these reasons, this research believes the DOE gutted the files provided to the Energy Conservation and Power subcommmittee

as a direct response to the subcommittee investigation of 1984.

Although DOE provided the subcommittee with the DBM files marked "Minnesota Fallout Data--1957-1959," the Sauter file was not to be found. This is despite the fact that the primary AEC official in charge of coordinating the investigation, suppressing the damaging information, and denying the claim, was the chief of the Nuclear Weapons Test Effects Branch which was part of the Divison of Biology and Medicine. Much of the information in the second chapter was gathered through the congressional investigation. As such, it can be seen as a reflection of the fallout controversy from a filtered point of view. The first chapter is more a reflection of what really happened, how scientists in government stepped out of their roles as scientists and made highly charged political, non-scientific decisions.

The subcommittee requested that I file a detailed report of the investigation, listing specific files and boxes in other repositories that had not been reviewed. A letter would then be sent to DOE by the subcommittee requesting that they neither remove, alter, or destroy the additional files listed.

Given both the DOE and subcommittee's track record over the summer in gaining access to these files, I refused at first to file a report, on the basis that writing up any part of the project would only provide the DOE with a better

roadmap in which to seek out and bury more incriminating information.

After many insistent phone calls from the subcommittee staffer Jeanine Hull, I agreed on one condition. I asked that she have the chairman of the Subcommittee (Rep. Ottinger) either write or call an individual whom I wanted to testify in the hearings. I would not write a Congressional report without his permission. His story would be a crucial part of the report. Ms Hull agreed to my request, and said she would try and get the man's permission to use his story and participate in the hearings.

I later found out (after the man had again refused permission to let me use his story for the Congressional report) that Ms Hull from the subcommittee made no effort to contract the man: she had not even read the 76 page report documenting his case which I presented to her in April at our first meeting.

Given that she had not read the documented reports I had written earlier, it is clear to see the reason for her complete lack of understanding as to the thrust of the investigation.

Despite DOE's being mandated by law to comply with the subcommittee's requests for information, documents, records and files, and despite the subcommittee's reputation as being one of the premier watchdogs of the DOE, the Energy, Power and Conservation subcommittee failed in its attempt to

gather the "truth and nothing but the truth" from the DOE in their investigation.

Any number of reasons can be given for their failure: a lack of understanding on the part of the subcommittee staff as to the scope and direction of the investigation; an ever-present protocol that allows for the government agency being investigated to have plenty of advance notice so as to cover their tracks; a lack of resources on the subcommittee side with which to attack the problem, and an abundance of resources on the DOE side to obfuscate the issue.

Whatever the reason, a common theme can be drawn from the experiences of the investigation, to Sauter's attempt to gain the truth about fallout on his farm, to the state of Minnesota's attempt to gather information from the AEC about radioactive hot spots in Minnesota. When a governmental agency is unaccountable to the people for its actions, no amount of letter writing from constituents, meetings with state and congressional representatives, speeches, articles in newspapers, or Congressional investigations is going to make the agency accountable for its actions.

Finally, it should be noted that several questions in the first chapter remain unanswered. The man who made the claim of injury from radioactive fallout, Joseph August Sauter died in 1971, 13 years before I learned about the case. His sole surviving daughter, Mary Lou Sauter Young, was not living with him in the late 1950's, the time the

claim was made. His closest nephews, Joe and Willie Sauter, only vaguely remembered the details of the claim, and as they lived more than 50 miles away in Morris, Minnesota, it is understandable their recollections are hazy at best.

As such, the reconstruction of this case is made primarily from documents obtained during the Congressional investigation and subsequent Freedom of Information Act requests from Mary Lou Young. Additional information was obtained in personal interviews with more than 20 people who knew Sauter or were personally involved in fallout controversy in the 1950's. I am indebted to Mary Lou, Joe and William Sauter for their invaluable help and in sharing their personal memories of Joseph Sauter with me.

CHAPTER III

THE CASE OF JOE SAUTER

On April 28, 1900, Joseph August Sauter was born in Morris, Minnesota. He was the son the German immigrants, Joe Sauter and Caroline Hunecke. He was born into a large farm family. He was one of 9 children; two died in their youth, another child was adopted. Joe worked on his father's farm from the time he could walk until he was 16. To most kids of our generation, 16 marks the turning point in their lives; the freedom of mobility that comes after passing the test for a driver's license. To Joe, it marked the time when he felt duty-bound to enlist in the U.S. Army, Infantry Division.

A year after signing up, Joe sent his closest sister, Barbara a picture postcard of himself and his army "buddy." The postcard picture was taken in France where he was mustard gassed by German troops. He was not a tall man, but he was broad across the chest, square shouldered. He looked into the camera with bright brown eyes. His face was long, but full. At 17, he looked proud to have served in the last months of World War I, even if he did have to lie about his age to get into the Army.

Joe came back from Europe in 1918 and returned to the family farm in Morris, a small farming community in western

central Minnesota. Joe asked his father to let him have one of the farm's outbuildings to live in. It was hardly more than a one-room tar paper shcack. Its only heat was a coal furnace that Joe kept stoked by shovelling in coal through the front window of the house.

Joe's nephews William and "little Joe" Sauter of Morris, Minnesota, both saw their uncle as an independent, self-contained man. "He didn't like to see you coming," Willie said. He was particular about the way his farm was run and the way his animals were treated. He was a man not to be crossed. Willie worked the farm the year before Joe died in 1971. Though Joe paid him well, Willie knew he was extremely demanding about how jobs were to be done on the farm. One day Willie plowed an extra field for Joe while he was in town for supplies. Joe returned, and instead of thanking Willie, cussed him out for plowing the field wrong. Willie had plowed the field from north to south instead of east to west. To most farmers that would not make much of a difference, but to Joe it did. Willie noted, however, even though Joe had his notions of how even the smallest job was to be done, there was almost always a pretty good reason behind doing the job that particular way. And if you did a job wrong, Joe never held back from telling you the mistakes you had made.

Despite the care and attention he took in running the farm, or because of it, Joe's small log farmhouse with rough

clapboard siding was a shambles on the inside. There was not much more than a large room with only an old woodstove that was used for heating and cooking (although Joe was never a very good cook), an ancient Fridgedaire refridgerator with the electric motor housed in the round casing above the cooler, a wooden table, a few rickety chairs, magazines, newspapers and books stacked in the corners around the room. Off to the sides were two sleeping areas, one used by Joe, and the other by Joe's closest relative and friend, his older sister Barbara Sauter.

Barbara taught school in Morris, Minnesota. She later became superintendent for county schools in Morris. She made the fifty mile trip from Morris to Farwell often to visit her brother. She cooked for Joe, straightened his house and cleaned his clothes. He also helped satisfy Joe's thirst for knowledge. Willie was amazed how Joe was always into something, be it taking correspondence courses in diesel mechanics, studying animal husbandry, checking for parasites in his animals' feces with a microscope to studying the lives of the mid-western Indians. Barbara brought Joe books, magazines, and kept him up to date on current affairs by bringing the major Minnesota newspapers with her on her trips to his farm.

Most of Joe's life was spent outdoors. When he wasn't taking care of the farmwork, Joe was criss-crossing his forests and pastures, checking his animal traps for mink,

fox and skunks. He would skin them and hang the pelts up in the barn until furriers came from the east to buy them. He had more ways to hunt than his newphews had ever seen. The few times that Willie had seen Joe so talkative was when he described tracking, hunting and trapping animals. Willie said Joe was the only man he had seen that could skin a skunk and come away not smelling a bit. Joe invented traps that guaranteed an animal would stay caught rather than chewing its leg off and escaping into the woods for a long, painful death.

In the winter of 1926 Joe married his hometown girl, Margaret Rose Hoover. She was several years younger than Joe and was impressed by his worldly ways, his directness, and his affections. Before the marriage ended, Joe sired two childred, Mary Lou and John.

Joe's independence, love of the outdoors and his inattention to his domestic life led to a short-lived marriage. When his daughter Mary Lou was only 2 years old, and her young brother only a todler, Rose left Joe to live alternately with her parents or her cousins in Alexandria, Minnesota. The children were told that Joe was dead and did not even know of his existence until his actual death in 1971. After the divorce, Joe continued to work his father's farm, and with Barbara's help, eventually bought the family farm.

In the mid-1930s, Joe began studying mineralogy. With the fever of gold in his veins, and his sister's geology books in the trunk, Joe headed out to California to prospect. He mined his own shaft for a few years, then, longing for Minnesota, returned to the family farm. When he left, Joe put all his mining tools deep in the tunnel and blew the entrance closed with dynamite.

He later returned to California in the winter of 1947 to reclaim his mine, but he had disguised the entrance so well, and the terrain had changed so much in his absence, that he could not find it. In the spring of 1948 he returned once again to Minnesota.

Joe decided to sell the 240-acre family farm in Morris and look for a farm with plenty of water, forests and pasture, so that, at the age of 50, he could "retire." He wanted to do nothing but fish, hunt and raise sheep.

Joe found a beautiful piece of land 26 miles northeast of Morris. The 124-acre farm was located in the Holmes City township, 2 miles north of the town of Farwell (population 50). The farm had more woodland and rolling hills than pastureland. The largest pastures, about 30 acres were interspersed among the woods of ash, white oak, elm, boxelders and other hardwoods.

The farm bordered two lakes called Freeborn and Little Freeborn. Freeborn was a half mile wide and a mile and half long. Freeborn Lake is a fisherman's dream and a popular

swimming spot for many kids who lived in the surrounding community.

Joe didn't retire once he bought the Farwell farm. He made his living raising sheep. He started raising sheep in 1938 on the family farm in Morris.

"He was well known in those parts for his sheep," his nephew Willie said. "He had the most beautiful sheep you could lay your eyes on. He took care of those sheep and watched over them as if they were his own children."

Joe was fiercely protective of his livestock and did not tolerate any trespassers on his land that might threaten his animals. The time and place where tracks of dogs or hunters were found were carefully jotted down on a pocket notebook that Joe carried withhim in his overalls on his walks across his land.

Joe was not always popular with his neighbors in the Farwell area. He angered them by threatening to shoot their dogs if they came onto his land. Even domestic dogs will kill sheep if they run in packs. Joe was known for meeting trespassing hunters with his old double-barrel Winchester shotgun. He wouldn't have any of his traps disturbed or his sheep shot by mistake.

One spring, the rains came especially hard. That summer the lake continually back-filled onto one of Joe's best bottomland pastures. He told his neighbors to let the water out of the earthen dam. But, for one reason or

another the neighbors never got around to letting the water out. So, one Sunday morning, while all the neighbors were a half mile down the road in the Oscar Lake Lutheran Church, Joe took a crate of dynamite out to the dam and blew a hole in it. The water ceased flooding his land, and, as his nephew Willie dryly remarked, "I imagine they all stood up that Sunday morning."

But there was one tresspasser that Sauter was helpless in stopping. This tresspasser could neither be heard, seen, felt, nor tracked by ordinary human means.

On June 18th, 1957 at 4:45 a.m. (Pacific Standard Time) a 10-kiloton bomb was exploded in the Nevada desert as part of the Atmospheric Nuclear Weapons Test series codenamed "Operation Plumbbob." The bomb was suspended at 500 feet above the ground in a balloon when it was detonated. The radiation from the bomb, codenamed "Wilson", was caught in the trophospheric winds of the atmosphere and were carried rapidly away towards the north and the east. Predicted trajectory maps, weather maps tracking the path of the fallout, would later show one layer of the fallout path going across the Dakotas and ending in the vicinity of Joe Sauter's farm four days later. Sauter's farm was only a county away from the North Dakota/South Dakota border.

It's very likely the reason the trajectory map (Figure 1) shows the path of the fallout cloud ending in the vicinity of Sauter's farm on the 22nd is that there was a

large rainstorm on that day, 1.22 inches according to U.S. Climatological Data for the Alexandria area, which is less than 10 miles from Sauter's farm. About 90% of the fallout drops out of the atmosphere as a result of rain.

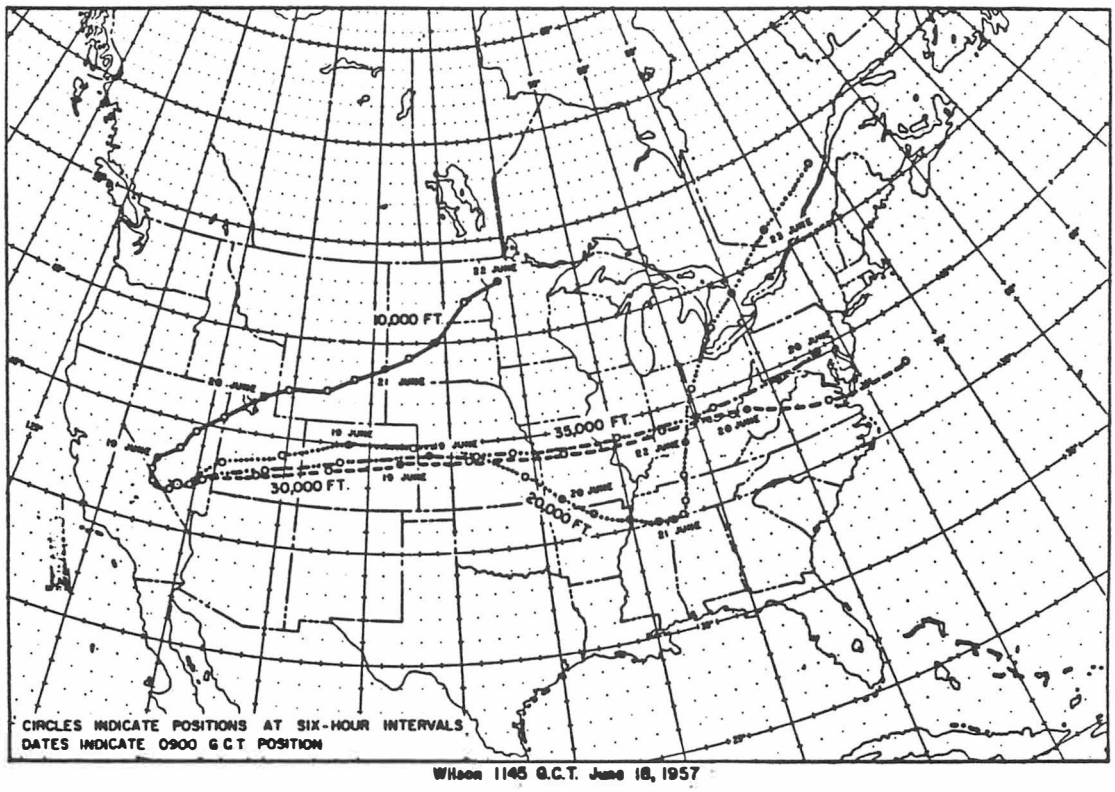

Figure 1. Trajectory Map

Less than a week later, on June 28th, Sauter noticed an unexplained rust or copper discoloration on his clover. According to Sauter in his claim filed with the AEC, the

clover developed holes and was "burned" so that it didn't develop seed, making it nearly worthless to feed the sheep.

On September 1, 1957, Joe's sheep began to die. The first dead sheep were found under a grove of white oak trees. The sheep had fed heavily on the white oak leaves after they had mysteriously fallen off--well before the first frost. Sauter called his nephew (and namesake) Joe Sauter, who lived about 50 miles away, to come and look at the dying sheep and his "petrified trees." The nephew remarked (when interviewed about the incident in 1984) that he had never seen anything like what happened to those trees. "It was just like the fall come too early, like an early frost coming." The leaves withered; most fell off, while some hung on the trees long after they should have fallen.

Sauter described the sheep suffering a stiffness in their joints which led to complete paralysis before their deaths. Those sheep that did not die immediately developed scours (a severe diarrhea) and what Sauter termed "shrinkage of the flesh." With winter and the birthing time of the sheep, Joe saw no end of the sheep dying. Sheep were stillborn, or severely premature, and few of the birthing survived.

Within a year he had lost 40% of his herd, over 90 sheep.

Sauter thought the deaths might be connected to the "burned" clover. He bought hay from other farmers to replace his own. After that, the sheep seemed to improve.

Though barely high school educated, Sauter was a perceptive man. He closely read the Minnesota papers that summer. He may have read that Operation Plumbbob in 1957 exploded the most and largest nuclear weapons of any test series to date. He may have read reports by Minnesota scientists revealing that predominant wind patterns brought the radioactive clouds over Minnesota. Leading scientists at the University of Minnesota were concerned about the long-term effect of fallout. By this time Sauter had raised sheep for nearly 20 years. He knew of no other explanation for the death of his sheep. By elimination, Sauter deduced fallout to be the cause.

Believing that radiation on the vegetation had killed his sheep, Joe took steps to remove the "poison," as he called it, from his land. On April 21, 1958, Sauter received burns to his hands and eyes after handling "limbage" grown on his property. He thought it was caused by nuclear fallout on his plants. After this experience, Joe began the long, slow process of seeking restitution for the damages to his farm that he believed were caused by the negligent actions of the Atomic Energy Commission.

Sauter wrote Sen. Hubert Humphrey to seek help in filing a claim against the AEC for radiation injury to his

sheep and trees. Sen. Humphrey contacted the Minneapolis Star. They ran a story on Sauter on April 14, 1958 (Figure 2).

MINNESOTAN ASKS ABOUT CLAIM

Farmer Says Fallout Hurt Lambs

By RICHARD P. POWERS

WASHINGTON (AP) —A Minnesota farmer claims fallout from atomic radiation has caused injury to lambs on his farm.

But an atomic energy commission (AEC) spokesman says no tests it has conducted indicates that fallout in the Minnesota area is beyond the safe level.

The spokesman said there have been some burns to the skin of cattle in the immediate area of the Nevada testing sits but complaints of injury to cattle in other areas from fallout have not been borne out.

Joe A. Sauter of Farwell, Minn., wrote Sen. Humphrey (D., Minn.), asking about the procedure for initiating a claim against the government for fallout damage from atomic radiation. Sauter's letter said in part:

"Petrified trees of late summer of 1957 is evident on my lake-bordering lands, and 40 per cent loss on 224 lambs during and following the term of tree leaf shed, in fall of 1957.

"Further incidence, dumb birth, occurring chiefly in twin lambs, occurrences of loss of parental instinct, and severity in reduction of masculine sex. The dumb being chiefly masculine . . ."

Humphrey forwarded the letter to AEC Chairman Lewis L. Strauss, asking for information on how Sauter could proceed to file his claim.

A check with the AEC spokesman, who had not known of Sauter's claim of damage, brought the response that it has received no information that fallout in the Minnesota area had caused any herd damage.

The question of fallout from atomic tests arose last summer in Minnesota in testing of surface water in some rivers there.

A report of a commission appointed by Gov. Freeman said the number of micro microcuries per liter of water rose beyond the maximum safe level for drinking water in some of the rivers in the state in the months following the June tests.

Freeman, while here in February, conferred with AEC General Manager Kenneth Fields and other AEC officials. As a result, Fields ordered several specialists to Minnesota in mid-March to make checks.

Humphrey's office said a report by these specialists have been prepared and sent to Fields and the latter is expected to make the report public in the near future.

W. F. Libby, a member of the AEC, said recently there is a certain amount of fallout in the country as the result of nuclear testing, but that the amount so far is not of such a degree to warrant stopping of the tests.

Professor Cyrus Barnum of the University of Minnesota said last fall the average radioactivity of surface water of the Mississippi, Rainey and Zumbro rivers exceeded the maximum permissible concentration as set forth by the AEC in the months following the June tests.

Figure 2. Newspaper Article on Sauter

On April 8, 1958, Sen. Humphrey wrote Lewis Strauss, Chairman of the Atomic Energy Commission, that he had received a letter from Sauter requesting information on how to go about filing a claim of damage due to radiation from fallout. Humphrey wrote:

> Mr. Sauter complained of `petrified trees... and 40% loss on 224 lambs... in the fall of 1957. [Occurences of] dumb birth... loss of parental instinct, and severity in reduction of masculine sex... 40 birthed... all in error' (Humphrey to Strauss, 4/8/58).

After Humphrey wrote Strauss, he informed Sauter he had notified the AEC of his case. On April 12, 1958, Joe Sauter wrote the "Chief" of the AEC. An AEC employee typed the handwritten letter to make it more legible. In the letter Sauter claimed:

> ...although complaint was passed to Washington... I have seen nothing of any... investigation of the facts. You are hereby advised that certain vegetation, the evidence of this date chiefly trees, were stricken or petrified, and to the best of my knowledge they are both poisonous and Radioactive... I lost a total of 93 lambs and 2 stock animals immediately and following the leaf shed from the trees, last fall... I am not prepared for delayed, or tedious negotiations in this instance, the evidence as spoken, will be properly disclosed (Sauter to AEC Chief, 4/12/58).

On April 22, 1958, K.E. Fields, General Manager of the AEC, acknowledged receipt of Sauter's letter and informed him that his claim had been referred to the Commission's Albuquerque Operations office. Fields told Sauter that he would hear from them in the near future.

By mid-May, the investigation of Sauter's claim had begun by the AEC. On May 16, 1958, Williaim W. Allaire,

director of the AEC Albuquerque Operations Office, wrote to Fred Driver, who was the head veterinarian of the U.S. Department of Agriculture in St. Paul, Minnesota. Allaire requested Driver to send his livestock inspectors out to Sauter's farm in order to find the sheep's cause of death. Allaire informed Driver of the allegation of radiation injury, but he downplayed the validity of Sauter's claim:

> Copies of Mr. Sauter's two letters are enclosed. As you can see, the exact nature of the damage is not clear. Your assistance in investigating this alleged damage is very much appreciated. We have from time to time called on personnel from the Department of Agriculture Animal Disease Eradication Branch to give us a report of their findings after their visit to such claimants. In most instances, the damage was found to be of ordinary disease origin, and not radiation connected (Allaire to Driver, 5/16/58).

On May 20, W.W. Allaire wrote Sauter. Allaire dismissed the claim that Sauter's livestock injuries and deaths could have been caused by exposure to radioactive fallout. Allaire made these statements before any facts or evidence had been gathered in the investigation of the case. Nevertheless, Allaire informed him of how to go about making a claim against the AEC:

> As you are probably aware, the Atomic Energy Commission, through cooperation of other agencies, is kept informed as to the intensity of radioactivity from `fallout' throughout the United States. The levels of radioactivity resulting from the 1957 test region (or any other continental tests) on any place outside of the Government-controlled test areas in Nevada, could not have caused the damaging effects or loss of livestock as described in your letter. However, we have asked the U.S. Department of Agriculture to visit you and to give assistance in determining the cause of your losses. You should hear from them shortly (Allaire to Sauter, 5/20/86).

Allaire enclosed copies of the AEC claim from which Sauter could fill out in triplicate if he still thought he had a claim against the AEC which could be adequately supported. Allaire included with the claim forms a copy of the government pamphlet "Atomic Tests in Nevada." The pamphlet was written to allay the fears of people living downwind from the nuclear tests. It claimed no one had been injured by radioactivity from the fallout of the nuclear weapons tests.

The AEC routinely denied claims of radiation injury before investigation of the facts. Letters such as the one sent to Sauter were found in several other medical/legal files in the course of research. The letters effectively cut short the development of medical/legal suits being brought against the government and were sent not only to people downwind from nuclear tests, but to atomic veterans and atomic workers claiming injury as well. When a top AEC official wrote people uneducated in radiation biology or nuclear physics, emphatically denying their injuries are radiation related, it effectively chilled their desires of filing injury compenstation claims against the AEC. For instance, Mildred Rogers from Kerville, Texas, wrote to the AEC complaining of unexplained burns which she thought might be radiation related. On August 14, 1958, Dr. H.D. Bruner, Chief of the AEC Division of Biology and Medicine's Medical Research Division responded to her letter without

investigating any of the circumstances, enrivonmental conditions or radiological data for the area. Dr. Bruner wrote:

> The current level of radiation from fallout is 1/30th to 1/40th of that which we receive from X-ray machines for medical purposes and the naturally radioactive substances occurring in the earth and our bodies [emphasis mine] (Bruner to Rogers, 8/14/58).

In all but a very few cases would a person desist in filing a claim after receiving the initial denial letter by the AEC. Miss Rogers, along with the vast majority of those who received such denial letters, dropped the matter. Sauter persisted.

On May 27, 1958, representatives from the U.S. Department of Agriculture visited Sauter's farm to determine the cause ofthe sheep's death. Dr. A. Peterson and Leon Fleisher, Jr., both livestock inspectors, reported their findings to Dr. Driver the following day. In their report, they noted the size and location of Sauter's farm. The inspectors said that Sauter followed the practice of periodically sprinkling builders' lime and flowers of sulphur into the water at the places where the sheep drank. They said that the lambs were feeding chiefly on fallen oak and ash tree leaves. They collected leaves and hay samples since Sauter thought that they were contiminated by radioactive fallout. If was clear to them Sauter believed the leaves were the cause of his sheep's deaths. It was noted by the livestock insprectors the sheep had been raised

on the same pastures, under the same conditions for a number of years, concluding that "there would be indications that other [unknown] problems could be involved." (Peterson to Driver, 5/28/58).

On May 29, 1958, Driver sent Allaire a letter which summarized the report from Peterson and Fleisher. He sent the samples which the inspectors and Sauter had collected, and requested that the leaves be checked for radioactive fallout; then Sauter should be informed of the findings. The inspector believed this would please Sauter. Driver concluded the letter to Allaire:

> Our inspectors advise that Mr. Sauter said nothing about claiming any damages during their visit and they believe that maybe the pamphlet ["Atomic Tests in Nevada"] that you forwarded to him helped (Driver to Allaire, 5/29/58).

The bottom line of the pamphlet was that the fallout from the nuclear tests had not caused illness or injury to anyone living near the Nevada Test Site. Rosenberg, (1980: 77-78) notes:

> The pamphlet, chock full of misleading and inaccurate information, should be written in the annals of social-psychology as a hallmark in government attempts to propagandize the populace.

Despite the impressions made upon the livestock inspectors of Sauter's seeming quiescence, Sauter went ahead and filed a claim of damages against the AEC on June 12, 1958 (see Appendix A.)

After Sauter filed the claim, the AEC earnestly began gathering medical, radiological, rain and air monitoring

data on the Sauter claim. The vegetation samples collected by the livestock inspectors and by Sauter were sent to the AEC's Health and Safety Labs (HASL) in New York for analysis. Allaire thought that a gross beta reading would be all that was necessary (Allaire to Dunham, 6/6/58). That is not surprising, given that they expected to find only normal background ranges of radiation in the vegetation.

Although Sauter was over a thousand miles away from the test site, the AEC, rather than using an in-house physician, chose Dr. Donald Chadwick to gather the medical information concerning the personal damage protion of Sauter's claim, which totalled $15.60 in personal injuries. Dr. Chadwick was the Chief of Program Services, Radiological Heath Medical Program, Division of Special Health Service of the U.S. Public Health Services. He was also a member of the Federal Radiation Council.

On July 1, 1958, Dr. Chadwick wrote to Sauter. Chadwick asked for more specific information on the burns--how soon after handling the "limbage" did the unidentified burns appear, what was the nature of the burns, and what happened with the passage of time. Chadwick also requested the name and address of the physicians who treated Sauter, along with permission to obtain the medical records and findings for the consideration of compensation of his personal injury claim.

Radioactive Leaves

On July 11, 1958, Dr. John Harley, Chief of the Analytical Branch of the Health and Safety Labs, wrote a memo to Dr. Gordon Dunning regarding the Sauter vegetation samples. Dunning was the head of the Effects of Nuclear Weapons Testing Branch within the AEC Division of Biology and Medicine. Dunning, a PhD in Science Education, was a key figure in evaluating and dismissing radiation injury claims made against the AEC. Dr. Harley enclosed the results of the gross beta counts on the vegetation from the Sauter farm. He specifically left the interpretation of the results up to Dr. Dunning.

Nine samples were collected--five by Sauter and four by Peterson, the livestock inspector. The samples included the 1957 oak and ash tree leaves. Sauter found the first dead sheep under the oak and ash trees on September 1, 1957. Samples of clove, box elder, and rock elm were also included. The counts ranged from 730 disintegrations per minute per gram ash for the mixed 1957-58 leaves to 4900 d/m/g/ash for the 1957 white oak leaf sample.

The counts on the very leaves Sauter said his sheep ate before they died were more than 100 times above normal background radiation levels at the time the samples were taken. Taking the decay curve into account, the intensity of the radiation at the time of the initial fallout was even

higher. Dunning knew he was measuring fallout long after the fact. Had he taken the data and gone backwards, factoring in the half-life decay rates, the readings on Sauter's farm on the day of the initial fallout could have possibly been closer to thousands of times higher than normal background radiation levels.

Keeping the Lid on a Controversy

The AEC's response to the high levels of radioactivity in Sauter's vegetation was the opposite of both their duties and responsibilities to Sauter and the American public.

On July 15, 1958, after the results of the analyses were obtained from Dr. Harley, W.W. Allaire wrote a memo which noted the highlights of a telephone conversation with Dr. Gordon Dunning. Of the five points mentioned concerning Sauter's claim, the first is the most important:

> Dunning has data on gross beta counts for foliage collected in connection with the Sauter claim. This is a very high number, 75 or 100 times background. Dunning feels that although the intensity is not harmful, disclosure of these numbers might be misinterpreted and thus damaging [emphasis mine] (Allaire memo to files, 7/15/58).

The integrity of the investigation of Sauter's claim collapsed at the moment these two top AEC officials knowingly chose to suppress the true levels of radioactivity on Sauter's farm. Their decision precluded independent scientists from making their own interpretations of the data, mainly calculating back to the time of the fallout to

determine how much radiation the sheep were exposed to, both externally and internally. The AEC made endless pronouncements in press releases, at public hearings, before congressional and judicial bodies of the AEC's commitment to release all the available data on fallout in America. Since they were the only governmental agency capable of accurately assessing the dangers of nuclear fallout on a comprehensive level, the public, courts and congress put great faith in the AEC's pronouncements. As early as 1953, Richard D. Elliot, Director of Information in the AEC Santa Fe Operations Office, delivered a special report which stressed four major obligations to the AEC:

> 1. To inform concerned publics of the hazards created and of preventive action which may be taken;
>
> 2. To warn people in advance of potentially hazardous stiuations, or situations which may alarm them;
>
> 3. To report after the fact not only with reassurances but also with details and interpretations;
>
> 4. And, to the extent of the agency's responsibility, to reimburse the public for its losses (Hacker, from draft manuscript, n.d: ch.10, p.34).

Given the levels of radiation on Sauter's farm it is obvious the AEC failed at the very least on the first two obligations by not telling Sauter what preventative measures he could take against chronic exposure to low levels of radiation that would persist for years. On the third and fourth obligations, the only part which the AEC fulfilled was to report back with reassurances, not with details or

honest interpretations. At no point did the AEC officials make any attempt to reconstruct the internal dose rate in order to determine how much radiation the sheep had received from eating the radioactive leaves. Their strategy was to suppress the radiological information, minimize the finding's importance between themselves, and thus prevent the "embarrassment" of a medical/legal suit being brought against the government at a time when the state of Minnesota and the country was highly sensitive to the issue of fallout from nuclear weapons testing.

The second and third points of the Allaire memo to the files dealt with the level of Strontium 90 in the samples. Sr90 is considered to be one of the most harmful isotopes from fallout. Its chemical similarity to calcium makes it a bone seeker--radiation in the bones can cause leukemia and osteosarcoma. With its 29-year biological half-life, Sr90 is a predominant isotope from nuclear weapons fallout after most of the short-lived isotopes have decayed away. Allaire noted that it would take another 6 to 8 weeks before a reliable result could be obtained on the Strontium 90 levels in the samples. Allaire quoted Dunning as saying (long before the results were even known):

> Dunning says that he feels the strontium content is such could then safely state to Mr. Sauter (or others) that plant life with this amount of strontium could be consumed for X number of years without harmful results (Allaire memo to files, 7/15/58).

It was a common saying by AEC officials such as Willard Libby during the fifties that a cow would have to eat several tons of hay before they would perceive harmful doses of radiation. Consistent with the AEC denial of injury before the investiation was conducted and the pamphlet "Atomic Tests in Nevada," which stated in effect that radiation from the nuclear tests had not caused a single injury in or outside of the nuclear tests site, the AEC first came up with the conclusion of no harm, then sought facts to support their conclusion.

Dunning and Allaire were not the only officials who participated in, or knew of, the suppression of key radiological data damaging to the AEC. Copies of Allaire's memo to the files were sent to Oliver Placak, the USPHS official responsible for overseeing the Public Health Service Nevada Test Site offsite radiation monitoring program in Nevada; M.E. Smith, Chief of the AEC Las Vegas Branch; and Roscoe Goeke, Radiological Safety Advisor of the Office of Test Operations. Any one of these people could have spoken out against the suppression of the information, but they kept silent.

Instead, four weeks after the memo recommending suppression of the information, Roscoe Goeke wrote W.W. Allaire, head of Nevada operations, in order to further minimize the radiologcial findings from the Sauter farm. Goeke's memo reads:

> In order to be able to better evaluate the analysis of tree leaves, grass, and hay conducted by NYOO in connection with the Sauter claim, I called Dr. John Harley and discussed with him the results obtained and how they compared to results obtained from samples collected in other parts of the United States.
>
> Dr. Harley indicated that `normal' background to them means the background level prior to the start of weapons testing and that is consisted only of potassium beta radiation. Using this figure Dr. Dunning's statement that the Sauter sample figures were about 100 times over background is probably correct. However,this is not a fair comparison. Rather, comparison to samples from other parts of the United States collected after weapons testing started should be made. Dr. Harley said that results of sampling last fall in Vermont and lower New Hampshire were in this same general range. This confirms the PHS data from Texas given to us by Mel Carter on 12 August by telephone.
>
> NYOO is presently running Sr90 analysis on three samples having the highest gross beta count. Results will be sent to us by memorandum by this Friday, the 15th. A preliminary look at the results indicated that they were in the same range as elsewhere in the United States (Goeke to Allaire, 8/13/1958).

Goeke's logic is absurd. According to Dr. H.D. Bruner, the head of Medical Research for the AEC's Division of Biology and Medicine,

> The current level of radiation from fallout is 1/30th to 1/40th of that which we receive from x-ray machines for medical purposes and the naturally radioactive substances occuring in the earth and our bodies (Bruner to Rogers, 8/14/58).

Either Goeke or Bruner was seriously misleading. 100 times over background was never considered "normal background range" by scientists outside of the Atomic Energy Commission. Even "fresh" levels of radiation 100 times background would be news in states like Vermont and Texas.

Of course, the most serious flaw in Goeke's logic is the fact that the radiological analyses were made a year

after the fallout. Goeke was comparing vegetation samples taken when the fallout was "fresh" with samples taken a year after the initial fallout. Although the use of decay curves was fundamental to men in his position, Goeke omitted this crucial factor in his analysis of the situation to Allaire. There is no excuse for this omission. Goeke's statement of the Sr90 samples being "in the same range as elsewhere in the United States" was equally misleading. Dr. Harley at the AEC New York Operations Health and Safety Labs (NYOO) ran Strontium 90 analyses on only three of the samples, since the cost for running each sample was over $100. The counts on the samples ranged from 43.3 +- 2.3 d/m/g ash to 83.6 +- 7.6 d/m/g ash. Based on their guestimate of the level of calcium in the samples, Dr. Harley estimated the level of Strontium 90 in the samples to range from 393 +- 21 micromicrocuries per gram calcium to 760 +- 69 micromicrocuries per gram calcium (uuc/g ca).

One week after the completion of the Strontium 90 tests Allaire wrote the Chief Veterinarian of the U.S. Department of Agriculture, erroneously "updating' him on the Sauter case:

> We would like to bring you up to date on what has transpired on this case since our last letter. The samples of hay, leaves and branches of trees from the sheep pastures have been analyzed by the AEC Health and Safety Laboratory, for gross beta and Strontium 90 activity. <u>The gross beta activity in these samples is in the same range as normal background levels found in samples obtained from Vermont, New Hampshire, and Texas. Three samples were analyzed specificially for the isotope Strontium 90. Results of this analysis</u>

> were reported in sunshine units [micromicrocuries Sr90 per gram calcium] and they are somewhat higher than the national average, but we do not feel they are high enough to have caused the damage alleged by Mr. Sauter [emphasis mine] (Allaire to Driver, 9/5/58).

If one does not take the decay factor into account, the counts on the Sauter farm could have been in the same range as post-shot radiation levels found in Vermont, New Hampshire and Texas. It may have been "routine" for the AEC to find levels 100 times above background in scattered spots across the country following nuclear explosions. But, as Sauter was never truly informed of the radiation on his farm, neither were the people of the states of Vermont, New Hampshire and Texas ever informed. There is certainly nothing in the history books, congressional hearing reports, or newspapers to indicate otherwise.

As to the Strontium 90 counts being "somewhat higher than the national average," as Allaire said, or, "the same range as elsewhere in the United States" as Goeke said, not only were the counts more than 100 times above the level of Strontium 90 found in American hay, they were higher than any Strontium 90 levels found in St. George, Utah, for the same time. (St. George is reputed to be the community with the highest level of exposure to fallout from nuclear weapons testing in the country.) The levels of Strontium 90 on Sauter's farm were higher than any levels reported to the state of Minnesota in its 1958-59 efforts to obtain all the relevant data on fallout in Minnesota from the Atomic Energy

Commission. Finally, the levels of Strontium 90 on Sauter's farm were higher than any of the levels of Strontium 90 reported to the Joint Committee on Atomic Energy 1959 comprehensive hearings on fallout.

Despite the fact that the most critical leaf samples was higher in Strontium 90 than any level reported to Congress of Strontium 90 in American vegetation, the AEC could still justify away its existence. The position of C.L. Weaver, Radiological Safety Advisor of the Albuquerque Operations Office was that even though the levels of Strontium 90 were over 100 times that found in American hay, and 5-8 times over the maximum permissible limit for safe human consumption, it was not a serious matter since the levels were not high enough to cause a rapid death in sheep as Sauter claimed. (Weaver to files, 4/2/59: p.4). None of the AEC officials, however, considered the obvious fact, that at the time of the initial fallout, Strontium 90 made up a very small fraction of the total radioactivity.

For instance, in the 1959 Joint Committee on Atomic Energy Hearings on fallout from nuclear weapons tests, the chairman of the subcommittee conducting the hearings, Rep. Chet Holifield, requested additional information on Sr90 and its relation to the whole spectrum of fission products in nuclear fallout. In the supplement provided to the subcommittee, AEC scientists responded to Holifield's request of Strontium 90 relative to the total level of

radioactivity from fallout. The AEC scientists wrote (the supplement had no author's name) that determining the level of radioactivity could be approximated by finding the level of Sr90, then finding the approximate time of deposition of fallout with the use of predicted trajectory maps. From these two sets of facts, one could then take the decay curves into account:

> The Strontium 90 content of fission debris is less than 1/20,000 of the total radioactivity in the first two days after detonation and increases gradually to 1/10,000 in four days, 1/5000 in eight days, and 1/2000 in twenty-five days (Hearings (1959: 2119).

Weaver and Dunning had the three keys to make the most basic analysis on the level of radioactivity from the initial fallout on Sauter's farm. They had Sauter's account of the first abnormal signs on his farm beginning in the last week of June, 1957. Dunning had the trajectory maps from Operation Plumbbob that showed the Wilson shot ending in the vicinity of Sauter's farm on June 22nd. A simple phone call to the Minneapolis newspaper would have confirmed the heavy downpours in the area on that day. Dunning and Weaver could have put the facts together. They knew that the Sr90 in the one sample on Sauter's farm, though higher than any levels released to the American public, may have been only 1/10,000 of the total level of radioactivity. The two AEC scientists, Dunning and Weaver, knew that other isotopes may have posed much more serious threats at the time of the fallout, but they ignored the other isotopes.

After Allaire assured the chief livestock veterinarian inspector for the state of Minnesota that the sheep on Sauter's farm were not killed by radiation from the nuclear weapons test, he asked him to have his people come up with an alternative explanation for their deaths. Ironically, he wrote:

> The burden of proof for this claim is Mr. Sauter's, however, we need for our record and reply to the claimant, a statement from your Department on the possible cause of livestock loss. An additional investigation by the Veterinary Livestock Inspector and determination, if possible, of the cause for the loss of lambs would be appreciated. It is our opinion that this loss is not radiation connected, based on the gross beta and Strontium 90 activity found in the foilage [sic] samples." (Allaire to Driver, 9/5/58).

Allaire concluded the letter by recounting how the AEC dealt with mysterious livestock losses around the Nevada Test Site:

> We have a Veterinary Officer at the Nevada Test Site assigned for investigating claims of alleged damage due to fallout radiation. As a result of numerous claims received in this area, our experience shows that the damage is usually the result of livestock or range management, or a common endemic disease and is not the result of fallout radiation (Allaire to Driver, 9/5/58).

The livestock inspectors returned to Sauter's farm at the request of the AEC, but were unable to make a diagnosis of the cause of death due to the badly decomposed state of the carcasses. Peterson, the livestock inspector who visited Sauter's farm, concluded:

> I do not think it possible to arrive at a definate [sic] diagnosis as to the cause of death. All we have to go by is what Mr. Sauter can tell us and that is

> somewhat limited and of little value. As stated before these sheep were being fed cheifly [sic] from falling leaves from trees on his farm togather [sic] will [sic] small portions of alfalfa hay. I assume it possible these sheep could have overeaten on these leaves (Peterson, Wentworth to Driver, 9/11/58).

Since the description of the death of the sheep did not resemble any endemic disease which the livestock inspectors were familiar with (since they had earlier ruled out livestock mismanagement), and since Allaire had effectively eliminated radiation as a possible cause by conveying false information on the results and interpretations of the beta and Strontium 90 activity, the inspectors were at a loss to explain the cause of death, other than the possiblity of the sheep overeating on the falling leaves.

An attempt to gather the records of the livestock inspectors on the Sauter case bore no fruit because, by 1986, Allaire, Peterson and Wentworth, the chief of livestock veterinary inspection for the state of Minnesota at that time, were all dead.

On October 23, 1958, Gordon Dunning responded to a request from Allaire's assistant manager, James E. Reeves. Reeves wanted Dunning's opinion on Sauter's claim of radiation damage from fallout. Dunning's letter is included as Appendix B.

This letter raised more questions than it answered. When Dunning stated the exposure in the Farwell, Minnesota, area "probably had been less than 100 milliroentgens", where did he get this information and what was the dose rate? Was

it 100 mr/hour, per day, per month, per year? He stated that this amount

> would not produce any observable effects on humans, plants, or animals....fallout... that would produce this external gamma exposure could also produce external and internal beta exposure (Dunning to Reeves, 10/23/58).

How did he determine these "potential beta doses... might be... tens of rads in the plant tissues"? Since he calculated the external beta dose to the plants to be in the "tens of rads", why did ne not go ahead and calculate the internal beta dose the sheep would have received from eating the plants? Again, is he basing this calculation of tens of rads beta radioactivity without fully extrapolating back to the time of the initial fallout?

Dunning recommended that more monitoring be done in the Farwell area if Sauter's case were to come to court, but he did not suggest more in-depth monitoring should be done otherwise. Given the fact the Strontium 90 levels were higher than the highest levels reported to Congress in 1959, the AEC clearly failed in its responsibilities to monitor a known area where there might be future health problems due to chronic above-background levels of radiation.

Denying Personal Injury

With the "analysis" of the vegetation and livestock portion of Sauter's claim neatly wrapped up by Dunning and Allaire, the AEC turned its attention to gathering all the

evidence against Sauter on the $15.60 portion of his claim of personal injury. On December 1, 1958, R. Goeke, Rad Safety Advisor at Albuquerque Operations Office wrote J.G. Terrill, Jr., of the USPHS. He requested the USPHS to send in Dr. Chadwick's findings of their medical investigation on Sauter:

> Completion of the denial of this claim is pending until we hear from your office concerning your investigation and receive the report of your findings. Other portions relative to this claim have been completed and our legal staff desires to consummate this claim as soon as possible [emphasis mine] (Goeke to Terrill, 12/1/58).

Dr. Chadwick had received a two-page letter from Sauter on July 19, 1958, concerning the injuries he thought were related to fallout. Sauter complained of temple and forehead headaches, socket headaches. In April of 1958, Sauter experienced burns on his hands after sawing off deformed limbs from the trees he said were "stricken" by fallout in 1957. Sauter described in detail the wind patterns, dates, and occurrences of burning eyes, burns on the "left shoulder swivel leaving brand purple red, pain in wrist hinge, deep." On June 4th, 1958, with the winds from the southeast, his wrist joints began hurting and the headaches returned. He noted that the leaves on the trees, especially the white oaks, were turned over, reversed. He saw evidence the fallout was still coming. Patches of his clover were scorched on the ground. With fallout still coming, he refused to accept whatever the AEC gave him as a

final settlement. He seriously believed his farm was being hit by radioactive fallout. Any reports to the contrary by the AEC would be seen by him as "(1) stupid or (2) willfull, premeditated deceit." Sauter wrote Dr. Chadwick, "At best, you are in serious error with superfluous fallout, in the settled regions or populace."

Sauter concluded the letter to Chadwick with a call for taking positive steps to reduce the hazards to radiation exposure on his farm:

> In conclusion, it is believed on my part, that you, of the great Health Division could well employ, experimental or otherwise, a calcine, either dust or spray over this recent stricken areas, and attempt at least to neutralize some of the evil element, instead of telling stricken people, the trees are just dying of old age and other false preachings (Sauter to Chadwick, 7/9/58).

Dr. Chadwick had requested a report from Sauter's doctors, Drs. R.D. Letson and G.E. Lee, as to their opinions of the origins of burns on Sauter's hands and eyes. Chadwick received a single paragraph letter from each of the doctors saying the cause of the non-specific burns were unknown, but probably not radiation related. The extent of the eminent Dr. Chadwick's medical investigation was to get on record the statement of two country doctors that Joe Sauter's burns on his hands and eyes were not radiation related.

Is it plausible that these two country doctors would have recognized radiation burns if they had been confronted which such? According to Collins and Gauldin (1980) several

studies have been reported in the late 1960s and 70s of urban physicians who were unable to detect classic symptoms of radiation burns. One case in 1974 involved a child with radiation burns who was examined by 16 physicians over a 20-month period, but whose diagnosis of radiation burns went unmade. The authors who wrote up this case study concluded:

> An information gap characterizes the two groups of people whose expertice would bear upon the detection and prevention of such an incident. From the first appearance of a change in skin... to the ultimate recognition of the etiology, some 16 physicians saw the lesions. It is quite possible that none of them had ever seen a radiation reaction or radiation necrosis. Similarly, the custodians of radiation sources and authorities for licensing and control are not apt to be aware of... the spectrum of injuries that might be encountered in the physician's office or the hospital emergency room (Collins and Gaulden, cited in Fry and Hubner, 1980: 202).

At best, without blood charts, visual examination of the burns, or more detailed information, the logical and objective position to be taken by Dr. Chadwick would have been there was not enough information to decide one way or another as to the cause of Sauter's burns. Instead, Dr. Chadwick and the USPHS took the position of vigorously gathering the information which would refute the claim, in this case two country doctors' opinions on radiaiton burns in western Minnesota in 1958. Allaire later requested Chadwick write back to the two country doctors and have them provide the AEC with an alternative diagnosis, so that the AEC's position on the $15.60 portion of Sauter's claim for personal injury would be strengthened (Allaire to Chadwick, 5/21/59). No alternative analysis was found in the file.

The AEC had gathered a sufficient amouont of evidence to buttress their case against Sauter. On April 1, 1959, W.W. Allaire sent Sauter a simple, two-paragraph letter:

> Dear Mr. Sauter:
> Your claim under Section 167, Atomic Energy Act of 1954 for damage to livestock, trees, personal burns, and paint on your barn submitted June 12, 1958 has been thoroughly investigated.
> We have been unable to find any evidence to support your claim that the fallout from the Atomic Energy Commission tests at the Nevada Test Site caused this alleged damage. On the contrary, all indications are that such fallout did not cause the alleged damage. Therefore, we must deny your claim (Allaire to Sauter, 4/1/59).

On the same day, James Reeves (Allaire's assistant at the Albuquerque Operations Office) wrote Brig. General Alfred Starbird concerning the Sāuter claim. Starbird was the head of the AEC Division of Military Applications and was kept informed of radiation injury claims due to fallout being brouhgt against the AEC. Reeves sent to Starbird a carbon of the final notice to Sauter denying compensation "since investigations revealed no evidence to support the claim." (Reeves to Starbird, 4/1/59). Reeves warned that Sauter might continue to pursue his case through the support of his congressmen. In light of recent news reports on high levels of Strontium 90 being found in Minnesota wheat samples, Reeves thought it important that Starbird contact the AEC Congressional Liaison Office so they could be prepared in case Sauter took this course of action. It's worthwhile to note the Minnesota wheat samples Reeves referred to in the memo were reported to have contained the

highest samples of Strontium 90 in the U.S. (testimony of Charles Dunham in 1959 JCAE Hearings on Fallout, May 5-9, p. 27). Yet the counts on Sauter's farm exceeded the levels of Strontium 90 reported to Congress only a month after this letter was written. Reeves concluded the correspondence with: "Dr. Dunning of DBM [Division of Biology and Medicine] has complete information on this investigation." (Reeves to Starbird, 4/1/59).

The day after Reeves wrote his letter to General Starbird, C.L. Weaver, Radiological Safety Advisor of the Albuquerque Operaitons Office, drafted an AEC legal defense position paper. The seven-page draft was marked "Operation Test Office Files." Presumably it would be used in the event the Sauter case became active litigation. The position paper first focused on the fact the sheep died after drinking the water treated with builder's lime and flowers of sulphur. The paper did not mention the water had been treated this way six years previously without ill effect, and that the first dead sheep were found under the most radioactive trees and did not have access to the treated water. Weaver said the primary defense of the AEC would focus on a tactic used in the 1954 Nevada sheep trail cases where they would have experts testify that fallout in the Minnesota area was:

> less than 1 mr/hr during the summer of 1957 [which] could not cause sheep death in September and October, 1957. Experimental evidence would be our primary defense plus the fact Mr. Sauter could not show death

was not attributable to drinking poisoned water (Weaver, 4/2/59, p. 2).

At the very least, if Dunning's estimate of the beta radioactivity dose being in "the tens of rads in the Farwell area" (an mr, millirem, is one thousandth of a rem) was correct, then it is obvious that the "expert" witnesses could not have been telling the truth.

Weaver then detailed the damages to the trees and clover on Sauter's farm. Though listing the levels of beta activity in the 9 samples from Sauter's farm, Weaver failed to mention the levels were over 100 times normal background radiation. Consistent with Dunning's actions Weaver failed to do a dose reconstruction, based on the decay of the radioisotopes from the time of the initial fallout and the time the samples were analyzed. For this reason Weaver concluded the animals could not have died so quickly from such low levels of radioactivity.

It is clear that in the event of litigation the AEC would have used the data most suitable to their conclusions. Weaver minimized the fallout problem in Farwell by comparing the levels of fallout in air and rainwater samples collected in Minneapolis (over 130 miles east of Farwell) with those levels tested at the Nevada Test Site. Weaver concluded:

> It is difficult to compare results in this case except to show that the highest activity in rain water analyzed at NTS [Nevada Test Site] was about 5 times higher than the highest rain water analyzed from Minneapolis, Minnesota... <u>It is not believed than</u> [sic] <u>an investigation of predicted trajectories furnished by the USWB</u> [U.S. Weather Bureau] <u>is</u>

> necessary. The results obtained by the PHS Surveillance Network are much more useable and give figures which can be compared to other locations [emphasis mine] (Weaver, 4/2/59, p.6).

The trajectories Weaver was referring to were maps which traced the fallout paths of the different nuclear explosions from the Operation Plumbbob series and were sent to Dunning two months earlier by Lester Machta from the USWB. The maps showed over 40% of the fallout paths from Operation Plumbbob passing over the state of Minnesota with the fallout from five nuclear explosions passing over the Farwell, Minnesota, area. The trajectory maps would have lent support to Sauter's claim, so they were not to be a part of the defense used by the AEC in the event Sauter took the AEC to court. Given the high counts in Farwell, showing the fallout path could have only proved detrimental to the AEC's case. The AEC was more comfortable with using radiation monitoring results taken over 100 miles away rather than extrapolating the levels of radiation based on samples collected on Sauter's farm.

Summary of Laws Broken by AEC

On the AEC claim form which William Allaire, Director of the AEC Albuquerque Operations Office, sent to Sauter, two laws were cited which told of severe punishments should Sauter file a fictitious claim. Since they are central to this paper they are quoted in full:

18 USC Subsection 287--False, fictitious or fraudulent claims

> Whoever makes or prepresents to any person or officer in the civil, military, or naval service of the United States, or any department or agency thereof, any claim upon or against the United States, or any department or agency thereof, knowing such claim to be false, fictitious, or fraudulent, shall be fined not more than $10,000 or imprisoned not more than five years, or both (June 25, 1948, ch. 645 62 Stat. 698).

It is clear Sauter had a strong incentive not to knowingly make a false claim against the government. Based on the evidence brought out in this research report, it is clear Sauter's claim of radiation injury had merit. The other law which appeared on the AEC claim form was similar to the one quote above, but its generality leads this researcher to believe it could apply not only to Sauter but to those evaluating the claim as well:

18 USC Subsection 10001--Statements or entries generally

> Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly or willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both (June 25, 1948, ch. 645, 62 Stat. 749).

When the first law was written to protect the interest of the United States Government against those who would make false claims, the lawmakers decided to write a companion law to protect the interest of the individual in cases where

people in government agencies would make fraudulent representations in order to protect the interests of the particular government agency. Did the representatives of the AEC violate the second law? It has been the intention of this report, not to "prove" that the death of Sauter's sheep was caused by radiation, but to prove that the representatives of the AEC knowingly, willfully concealed material facts, made false statements and representations in order to protect the interest of the Atomic Energy Commission. When Dr. Dunning and W.W. Allaire agreed to suppress the true levels of radiation on the Sauter farm to prevent damaging the AEC, they were concealing a critical material fact. When Allaire reported to the chief veterinarian of the U.S. Department of Agriculture that the beta radiation on Sauter;s farm was within the "normal background range," he was knowingly making a false representation. When James Reeves, W.W. Allaire's assistant manager of AEC Albuquerque Operations Office, wrote the director of the AEC Division of Military Applications stating "investigations reveal no evidence to support Sauter's claim," he was knowingly making a false statement. And finally, when the Radiological Safety Advisor, C.L. Weaver was putting together the legal defense position paper and noted they could get witnesses to testify the levels of radiaiton over Minnesota were less than 1 mr/hr, and chose to use evidence taken over 100 miles east of Sauter's farm

which proved favorable to the AEC's stand, he was willfully prepared to make fraudulent representations on the behalf of the Atomic Energy Commission.

Had Sauter knowingly filed a false claim, it would have been easy enough for the AEC to prove the falsehoods. They could have sent government investigators--from their own security investigators to the Federal Bureau of Investigation--to verify the facts stated in his claim. They could have gone around to his neighbors and found out if Sauter held any open hostilities toward the government in general or the AEC in particular. With the extensive labs and scientists available to the agency, the AEC, if they found no radiation on the farm and suspected Sauter of willfully filing a fraudulent claim, could have more thoroughly investigated. They could have sent teams of AEC scientists out to the farm to find out how Sauter "caused" the leaves on the trees on his farm to be shrivelled up and fall off long before the first frost of the year. They could have sent AEC pathologists out to the farm to take samples of even the well-decayed sheep to find out if Sauter perhaps deliberately used poison on them in order to make the AEC "look bad."

The AEC had scores of scientists and technicians at their disposal to prove or disprove Sauter's claim. What did a 58 year-old high school educated sheep farmer in western Minnesota have to do to prove the AEC willfully and

knowingly misrepresented the facts? He could have appealed to the state government of Minnesota, or to the Joint Committee on Atomic Energy, the congressional watchdog of the AEC, but as will be pointed out in the next chapter, they were having their own troubles getting the whole truth out of the Atomic Energy Commission.

The AEC was probably the governmental agency most prone to such abuses. Three reasons for this are:

1. through the use of "National Security" the AEC had a virtual monopoly over the control of scientific data in this area. Findings which were critical of the nuclear weapons testing program could be classified, and effectively suppressed in the interest of "National Defense;"

2. at the time, there were virtually no labs working in the field of radiation that were not dependent on the AEC for substantial monetary support. For a scientist dependent on AEC funding to generate findings highly critical of that agency spelled a complete economic cut in support. See the cases of Dr. John Gofman, Dr. Ernest Sternglass, Dr. Tom Mancusco, Dr. K.Z. Morgan, Dr. William O. Caster, among others; and

3. the AEC was charged with two imcompatible roles, mainly that of providing nuclear weaponry to the Defense Department and promoting the development of commercial nuclear power, but also that of protecting the public from exposure to ionizing radiation.

CHAPTER IV

AEC COVERUP: KEEPING MINNESOTA UNINFORMED

During the same period in which the Sauter case took place, the state of Minnesota made parallel attempts to uncover information about radioactive fallout over Minnesota and its effects on the plants, animals and people of Minnesota. A special Scientific Advisory Committee set up by Governor Orville Freeman, called the Atomic Energy Development Problems Committee, was trying to gather fallout data for the entire state. Task groups within the Advisory Committee repeatedly made requests to the AEC for all the relevant information to the public regarding fallout. Later, Senator Clinton Anderson (D-NM), Chairman of the Joint Committee on Atomic Energy, and Senator Hubert Humphrey (D-MN), chairman of the subcommittees on disarmament and international health, both specifically requested all the information which the AEC had on "hotspots" in Minnesota and North Dakota. Neither Gov. Freeman, with his appointed Scientific Advisory Committee, nor the two Senators were able to obtain information on "hot spots" such as those on Joe Sauter's farm in western Minnesota.

State Finds Fallout Hot Topic

In 1957, the issue of fallout in Minnesota was a hot topic in the Twin Cities' newspapers. The scientist most responsible for bringing the issue to the forefront was Dr. William O. Caster. He was trained in the filds of radiation biology and nutrition. From 1951-57, his studies concentrated on the biological effects of ionizing radiation on the heart and other organs.

On May 16, 1957, the Minnesota Daily, the university newspaper, printed an interview with Dr. Caster entitled, "New Evidence Shows Fallout from Atomic Tests is Greater than Scientists have Generally Supposed." (Minnesota Daily, 5/16/57, p. 1). In the article, Dr. Caster quoted a statement made by AEC Commissioner Willard F. Libby the year before when he noted in the Proceedings of the National Academy of Science that the midwest, including Minnesota, was the hottest spot on the globe because it was the first place in the storm path of the fallout where there was heavy rainfall. Also, wind conditions above the region exacerbated conditions favorable to fallout.

In the two weeks following the May 16 article on Dr. Caster, over 45 related articles appeared in the Twin Cities area newspapers. They covered the spectrum: from Strontium 90 in milk to the psychological effect of "duck and cover" drills on school children.

On June 3, 1957, Governor Orville Freeman told a meeting of Midwest state attorneys general of his concern "about radiation hazards from nuclear weapons tests." He announced he was going to establish "an advisory committee to study problems of nuclear energy and radiation fallout hazards." The focus of the advisory committee was to gather all the known facts of fallout in Minnesota and to release the information in a manner understandable to the public. Governor Freeman told the audience:

> Responsible officials should no longer conceal frightening facts on the grounds they might have a `bad psychological effect' on the people (Minnesota Tribune, 6/4/57).

Dr. Caster, a key figure on the Governor's Scientific Advisory Committee, paid dearly for his unequivocal statements on the hazard of fallout in Minnesota. Following a June 27, 1957 article in Science, in which Caster criticized the AEC for improperly calculating the maximum permissible concentration of Strontium 90 in humans, an AEC official met with his University of Minnesota department head, Dr. W.D. Armstrong, and told him that Dr. Caster need not bother ever applying for another grant from the AEC.

In an interview on September 23, 1984, Dr. Caster pointed to a reprint of the Science article and said, "That one article cost me $30,000 a year." Other established scientists who were critical of the AEC also met with "defunding" problems. (See particularly the cases of Dr.

John Gofman, Dr. Thomas Mancuso, Dr. Ernest Sternglass, and Dr. Karl Z. Morgan.)

In July, 1957, Freeman appointed the members of the newly created Minnesota Atomic Development Problems Committee. In the Governor's own words some two dozen of the finest scientists and lawyers in Minnesota were appointed to the Committee. It was broken down into 11 Task Groups which addressed areas ranging from basic nuclear and health physics, radiation biology, and tolerance standards setting, to the power of regulatory agencies and the law.

On January 24, 1958, the Task Group on the Biological Significance of Ionizing Radiation released an intirim report. The scientists had found that several samples in river, surface, stream and lake waters in Minnesota had exceeded the maximum provisional limits from gross beta radioactivity. The report stressed, however, there was not cause for alarm since the treated city drinking water in the Twin Cities was found to be below the maximum provisional limits. The interim report stressed that the real problem was that the state of Minnesota did not have comprehensive data with which to assess the present and future hazard to its residents from weapons testing fallout. The Task Group urged that a program begin immediately to collected the needed information.

The chairman of the Task Group on the Biological Effects of Ionizing Radiation was Dr. Maurice B. Visscher.

He was the head of the Physiology Department of the University of Minnesota Medial School, past president of the American Physiological Society, and widely regarded as one of the world's leading physiologists. His interim report was sent to Dr. Gordon Dunning, chief of the Effects of Nuclear Weapons Tests Branch, AEC, on February 20, 1958. Visscher stressed to Dr. Dunning that the Governor's Scientific Advisory Committee did not want to cause a panic about present radiation levels in Minnesota water but wanted to emphasize a feeling of urgency

> because we are definitely concerned about the possibility that Sr90 is accumulating in biological material to a more significant extent than even the recently published data by Kulp and others would indicate (Visscher to Dunning, 2/20/58).

(Dr. Lawrence Kulp was an AEC-contracted scientist who had worked under the AEC's Sr90 analyses "Operation Sunshine" studies in the mid-1950's).

Dr. Visscher requested that the AEC send all their information on levels of Sr90 in Minnesota's 1957 crops of hay, alfalfa, legumes and other vegetables, which were not available in current literature, and levels of Sr90 in Minnesota milk (Visscher to Dunning, 2/20/58).

On February 24, 1958, a meeting was held in Washington, DC, between Gov. Freeman and K.E. Fields, General Manager of the AEC (General Manager was the highest position in the AEC, excepting that of the AEC Commissioners). Also present were Dr. Charles Dunham, Director of the Division of Biology

and Medicine (DBM), Dr. Gordon Dunning, and Miles Lord, Attorney General of Minnesota. According to Dunning's notes, the AEC and the Governor agreed on three points:

> 1. The Atomic Energy Commission would send one or more technical representatives to Minnesota in the near future to confer individually with Dr. Visscher and other appropriate scientists for the exchange of information and data.
>
> 2. The [AEC] would accept selected samples from Minnesota and have them analyzed for Sr90 and perhaps other nuclides if desired.
>
> 3. After the facts and data were established, we would meet with the governors's scientific committee in Minnesota and have an open discussion, if he wished (Dunning to Files, 3/12/58).

Two days after this meeting, Dunning received a series of fallout maps which showed fallout passing over Minnesota at least 14 times from the "Operation Plumbbob" series of nuclear explosions at the Nevada Test Site. Dr. Lester Machta, from the U.S. Weather Bureau Special Projects radiation monitoring team, noted that Minnesota was in a "favored position" to receive fallout during the spring (Machta to Dunning, 2/26/58).

On March 1, 1958, Gov. Freeman wrote the AEC General Manager, K.E. Fields, thanking him for the AEC's cooperation up to that time. Freeman concluded the letter:

> May I again emphasize that we are very anxious to be completely responsible in this matter here and not in any way unduly excite the people of the state.... On the other hand, we believe that there is a real hazard; that we are not adequately informed at present to evaluate it; and that... until we have the basic data... we have not met our obligation to the people of our state. I trust... the cooperation... will

continue to the mutual benefit of our state and nation (Freeman to Fields, 3/1/58).

As promised at the February 24 Washington, DC, meeting, Dr. John Harley, Chief of the Analytical Branch of the AEC New York Operations Health and Safety Laboratory (NYOO HASL), and Dr. Dunning of the AEC Effects of Nuclear Weapons Tests Branch met with Dr. Visscher's Task group on March 6, 1958. According to Dunning's memo to the files, Harley did an excellent job of describing the analytical procedures for sampling and interpreting data.

Dr. Harley left 20 to 30 reports with the committee. One dealt with the level of Sr90 in Minnesota milk and was marked "Official Use Only". Although "Official Use Only" is an internal agency classification and not a security classification, the Minnesota Task Group scientists were told not to release the information in the milk report.

Dr. Caster says that Dr. Dunning told the Minnesota scientists in the March 6 meeting that their calculations for Sr90 were overestimated by a factor of three. Caster said:

> Dunning did not make us look particularly good at the time. Having a federal professional on radiation come in and tell us we didn't know how to calculate the Strontium levels made us feel pretty bad. A couple of days later, however, we went over the calculations and discovered that Dunning was technically correct, but he had left the daughter product Yttrium 90, out of his calculations. As with Strontium 90, Yttrium 90 is also a bone binder.

> We, being radiation biologists, took both isotopes into account for estimating the biological hazard. One thing we discovered was that much of the fallout from recent shots was the rare isotope Neptunium. The half-life of Neptunium is 2.3 days; [its] daughter product is Plutonium 239. The problem with the feds was that nobody was telling us what the hazard was (Interview with Caster, 9/23/84).

The Minnesota Star and the Minnesota Daily both ran short reports on the meeting the next day which stated that Harley and Dunning were not concerned about the levels of radioactivity in the lakes and streams of Minnesota and that future studies would ease any fears residents might have (Minnesota Star and Daily, 3/7/58).

On March 19, 1958, the New York Times published a letter to the editor written by Dr. Visscher which sent shockwaves through the AEC. Visscher noted points of "confusion" that "non-scientists" might have regarding the nuclear weapons fallout controversy. His first point emphasized the lack of knowledge about the damaging effects of low level radiation from fallout:

> We think, but do not really know, that Sr90 is the main hazard as far as cancer is concerned... We do not really know how little Sr90 will produce cancer. The fact that the magnitude of the damage is just an 'educated guess' is the first great difficulty.
>
> The real effect may easily be only one tenth or ten times as great [as current estimates]. The public should know that it will be absolutely impossible to

'know' how dangerous this element is for at least 20 years... The public should know that we scientists have no actual data on the carcinogenic activity of low levels of Sr90 (Visscher 3/19/58).

The second point struck a particularly raw nerve at the AEC. Dr. Visscher asserted that the AEC had withheld information from the public:

> The second reason for confusion is secrecy. Right now the most extensive data on Sr90 in milk in the U.S. are in the hands of the [AEC]. On March 5, 1958, I was shown these data which are marked 'For Official Use Only' and I am therefore now not privileged to disclose the facts they contain. There is one point about this situation that disturbs me greatly. It is that the top administrative officials do not have confidence in the intelligence of the American people. They act as though they did not really believe in the democratic system. The facts in question have no conceivable military significance. They are important only as background information for policy decisions. To withhold them from the public means one of two things, either that our Washington administrators do not trust our intelligence, or that they hope to control opinion by monopolizing information.
>
> Either conclusion would be distressing to me as one who believes in the democratic process because it would mean that we are imitating the practices of authoritarianism, which I adbhor. (Visscher, 3/19/58).

The day that Dr. Visscher's letter appeared in the New York Times, Morse Salisbury, Director of Information Services for the AEC, suggested that the head of the Division of Biology and Medicine, Dr. C.L. Dunham, write the Times and clarify the OUO (official use only) aspect brought out in Visscher's letter. (Salisbury to Dunham, 3/19/58). The next day, Merril Eisenbud, Director of the AEC NYOO, drafted a response to Visscher's letter which he sent to the main AEC offices in Germantown, MD, for a "fast clearance."

In the draft, Eisenbud accused Visscher of obscuring the AEC premise that data stamped "OUO" was of a provisional nature and that it would be released when it was cross-checked for intralaboratory errors. Dr. Dunham, in his response to Salisbury's memo, wrote a report called "Allegation by Maurice B. Visscher..." Dunham also stressed that the material was not classified but merely held back because of the provisional nature of the data. Neither of these draft letters saw the light of day.

Dr. Dunning answered why the AEC did not publicly respond to Dr. Visscher's allegations. In a letter to Dr. Caster's department head, Dr. W.D. Armstrong, Dunning wrote:

> We are disturbed, of course, by the deliberate distortion of facts that Dr. Visscher wrote in his letter... however, rather than enter in a round- robin of letter writing, we are officially ignoring Dr. Visscher's letter (Dunning to Armstrong, 3/27/58).

Dr. Caster felt there had been attempts by the AEC to cover up levels of radiation using tactics other than classifying them not for public release. Caster accused Dr. Dunning of the AEC of hiding high exposures by averaging those exposured into a large non-exposed population. Caster said:

> It introduces a dangerous concept... that the individual is not important... When the AEC stated that the situation is safe, what they mean is that the average situation is safe (Draft copy of "The Biological Hazard from Atomic Fallout," Caster, 5/58, p. 9-10).

Dr. Dunning responded that averaging radiation exposures into large populations was consistent with current scientific practice. He said of Caster's remarks:

> Nothing could be further from the truth... than that the AEC is not concerned with the individual... Let me assure you... that the individual is most certainly considered important and no data are averaged or in any other manner manipulated to conceal important information [emphasis mine] (Dunning to Caster, 4/10/58).

Dunning later had James G. Terrill, Jr., meet with Caster and two Minnesota health department representatives to futher drive home the point that neither the AEC nor the USPHS withheld fallout information from the public. In a June 3, 1958, memo from Terrill, Chief of the Radiological Health Program of the Division of Sanitary Engineering Services for the Department of HEW, to Gordon Dunning, Terrill outlined the major points of the May 29th meeting with Dr. Caster and two other doctors form the Minnesota Department of Health. Terrill explained the functions of the U.S. Public Health Services radiation monitoring program. Terrill wrote:

> Item by item I outlined the principal objectives and findings of each of these undertakings. I explained that security was a relatively formidable factor in our early deliberations, but that all of our activities were now free of security restrictions, and had been published in some form. I explained that presently we were not handicapped so much by security limitations as we are handicapped by the actual methods of analysis and delay in preparation of reports. Apparently Dr. Caster had been under an impression that we were withholding information for some type of security reason. However, at the conclusion of our meeting I think he was satisfied

> that we are not withholding any information beyond the point where we have had a reasonable chance to analyze it and form conclusions in our own mind (Terrill to Dunning, 6/3/58).

Despite Dunning's emphatic denial that the AEC withheld any information, three months later Dunning chose to withhold information from Joe Sauter on the basis that releasing it would be damaging to the AEC (Allaire to files, 7/15/58).

AEC Denies State Support

Three weeks after Dr. Visscher's letter appeared in the New York Times, chastising the AEC for withholding scientific data on Strontium 90 in milk, the General Manager of the AEC wrote Gov. Freeman. Freeman had earlier requested financial assistance from the AEC in setting up an independent comprehensive radiation monitoring and analysis program in Minnesota. Freeman had reqeusted only $49,000 to set up the special lab in the Minnestoa State Department of Health. The AEC Division of Biology and Medicine's budget in 1959 was $43,242,000, out of which $2,648,000 was devoted to fallout sampling and analysis (JCAE Fallout Hearings, Vol.1, 5/5-5/8/59, p. 17). The General Manager, K.E. Fields, refused to give financial assistance to such a program:

> We would find it difficult to justify support of... large scale state or local programs of monitoring environmental radioactivity except in the areas in which we operate large nuclear facilities. Perhaps it is not generally understood that our own large scale studies...[were] originally designed to obtain information on concentrations which might result from nuclear warfare and possible future nuclear weapons tests, as well as to provide adequate information on fallout from tests which have been held... Much large concentrations of radioactivity than those observed in air, water, milk or other foods would represent no appreciable hazard to health except as they might be maintained over periods of many years. It would be, therefore, impractical to think of a detailed local radioactive monitoring program as contributing to public health, even at levels of fallout much larger than those occurring from foreseeable programs of weapons testing (Fields to Freeman, 4/11/58).

Field's conclusion of no adverse effects as unknown future levels was in contradiction to knowledge both within and outside the AEC.

Dr. Caster pointed out in a June 15, 1958 editorial addendum to the Task Group 5 (Quantitative Standards for Determining Hazard to Humans from Radiation) report that the level of Sr90 in the body causing injury to humans was greatly underestimated due to recent findings of the variance of the degree of deposition from one person to another. Citing a study completed in May by a group of Swedish scientists, Caster wrote:

> This 'meticulous' investigation found that Sr90 will not be distributed evenly in the skeleton but will concentrate in certain bones and that concentration will vary with conditions. The significance of this... lies in the conclusion that Sr90 is 60 times more dangerous to humans than the AEC statements... assume and... 10 to 12 times more than assumed [previously]... by this committee.... This would double, and perhaps triple, an individual's

> chances of having leukemia, and would place an individual just above the threshold for bone damage.
>
> The reduction in x-ray tolerance levels in the last three years suggests a parallel trend in the evaluation of Sr90 hazards, [but] one great difference exists... an x-ray machine can be turned off at will; Sr90 in the skeleton cannot (Basic Data...in Minnesota, p. 57).

In summary, five points would have mediated in favor of a state-wide radiation monitoring program in Minnesota:

1. Libby's pronouncement of Midwest, including Minnesota being the hottest spot on the globe because of prevailing fallout conditions;

2. Gov. Freeman's Scientific Advisory Committee finding several instances of untreated water in Minnesota exceeding the provisional limits set for beta radioactivity;

3. The predicted trajectory maps of fallout from the Operation Plumbbob series of nuclear explosions showing fallout passing over Minnesota at least 14 times with rain coinciding with the passage of several clouds over Minnesota;

4. Dr. Caster's presentation of new evidence indicating "hotspots" of Sr90 building up in the bone which greatly increased the hazard of exposure to Sr90; and,

5. The presence of a team of qualified, aggressive, yet non-alarmist scientists who would spearhead the program.

Despite these points the AEC refused to consider any support of a state-wide independent radiation monitoring and analysis program in Minnesota.

State Attempts to Get Data from AEC

On July 29, 1958, Lee Loevinger, attorney, former law partner of Gov. Freeman and chairman of the Governor's Advisory Committee on Atomic Development Problems, wrote the AEC on behalf of the Task Group which was chaired by Dr. Visscher. Loevinger requested a copy of the four- volume AEC publication "Environmental Contamination from Weapons Tests: A compilation of Data Concerning Transport, Deposition, Distribution and Biological Uptake of World-Wide Radioactive Fallout." Dr. Visscher's Task Group had learned of the report's existence, not through the AEC, but through a July 13, 1958 New York Times article. Loevinger wrote:

> Both the Minnesota Atomic Development Problems Committee and its subcommittee on Environmental Contamination feel that the data gathered by the AEC and presumably contained in the publication referred to, would be of great value to us in performing our role, and that it is necessary that our subcommittee be informed of the data that is available in order properly to perform its function [emphasis mine] (Loevinger to AEC, 7/29/58).

Loevinger's request for all the data available on fallout in Minnesota came less than four months after Dunning's emphatic assertion to Dr. Caster that the AEC did not manipulate data in any way to conceal information, and

less than two weeks after Dunning's decision to suppress the true levels of radioactivity on the Sauter farm in western Minnesota.

On August 22, 1958, the Minnesota Atomic Development Problems subcommittee called the Task Group on Basic Research issued a detailed six-page report entitled, "Areas in the Biological Sciences where Basic Information is Needed in Relating to the Manner in which Atomic Energy May Influence Residents of Minnesota." The report reflected the dedication and the competence of the Task Group which the governor had referred to in his earlier letter to the General Manager of the AEC. The report addressed several areas where there was a serious gap in the field of knowledge on the damaging effects of radiation. Information was badly needed from the areas of soil chemistry and plant nutrition to the pathway of Sr90 in the human body. The report recommended:

> [We need] a well integrated interdisciplinary program that is concerned with following the pathway of isotopes from the time they leave the soil and enter plants until they are incorporated into human tissue and/or excreted back into the environment where the pathway to the human will be repeated.

The final statement of the report by the subcommittee on Basic Research reflected the overall problems and positions facing the state of Minnesota:

> It seems relevant to emphasize the almost overwhelming magnitude of the problems that confront the biological scientists in their efforts to contend with the new physical environment that has resulted

> from the products of atomic fission.... It seems obvious that an effective program in the areas outlined must necessarily be a program which is well integrated and coordinated.... However, to be properly implemented a program of such wide scope must be established on sound footing based on thorough comprehension of the information that presently exists. They suggest that a detailed appraisal of the problems outlined in this report could best be facilitated by holding a symnposium in which experts in the fields of concern would be requested to participate (Task Group on Basic Research, 8/22/58).

Such a well thought out, comprehensive approach to the monitoring and analysis of radiation in the state of Minnesota as that proposed by the Atomic Development Problems Committee was beyond both the capabilities and inclinations of the AEC. Their own piecemeal approach to monitoring fallout did not even meet their own standards for scientific reliability.

Broad Assurances/Unreliable Analyses

As the pace of atmosphere nuclear weapons tests accelerated over the years, the demand for biological testing of its effects greatly increased along with it. "Operation Sunshine" was initiated in the mid-fifties by the AEC to test the level of Strontium 90 in the biological cycle of plants, soil and animals (including humans) across the country and in selected sites in over two dozen other countries. "Sunshine" referred to the unit of measurement for Strontium in the samples. One "sunshine unit" was

equivalent to one micro-microcurie of Stronitium 90 per gram of calcium in the sample.

Because of the overwhelming number of samples to be analyzed, the AEC had to use outside, private contractors to complete much of the work. The outside contractors, however, were not carefully screened; they did not always follow the extremely rigid procedures needed to get reliable results.

Reports were completed in September, 1958, at the AEC Health and Safety Laboratory (HASL) in New York, which found that several of the private labs which the AEC contracted with to analyze samples for Sr90 had produced results which were scientifically unreliable. The Director of the AEC New York Operations Office had suspected for over a year that the results coming in from the contractor labs were unreliable. It was not until the HASL had devised a program to send the contractor labs duplicate samples of vegetation, soil, feces and bones, that systematic proof could be established to confirm their suspicions. The report stated that some of the private labs findings deviated as much as 89.9% off the mark of the average values. S. Lough, the Director of the NYOO, wrote Dr. Dunham that despite all the work with the private labs over the year to improve their analyses, the work was still proving to be scientifically unreliable. Lough wrote:

> The analytical data submitted by the contractors have been so unreliable that some participating investigators have been unwilling to use them in the preparation of scientific reports in connection with the overall fallout program. To me it appears entirely indefensible for the Atomic Energy Commission to continue expenditure of funds for additional contractor- performed analyses which we are confident will be unsatisfactory (Lough to Dunham, 11/10/58).

Dunham agreed with Lough, and the contractor labs' work on the analysis of Sr90 was suspended until guidelines for better quality assurance were developed by the AEC. The AEC Health and Safety Laboratory would continue analyzing Sr90 in vegetation, but the private contractor labs would continue their anaylysis of Sr90 only in surface rainwater and gumpaper samples. Coincidentally, the vegetation samples showed the highest counts of Sr90 as a result of atomic testing fallout, while surface water and gumpaper analyses showed the lowest Sr90 counts and gave the poorest picture qualitatively of the deposition of fallout. The AEC Health and Safety Lab (the very lab which ran the Sauter vegetation analyses for gross beta and Sr90) was singled out by Judge Jenkins in the recent Utah decision Allen Vs. USA. Judge Jenkins noted it was a practice of the AEC lab to stop the counting of an ashed sample for beta radioactivity when it reached 640 counts per minute. Jenkins also noted the samples were ashed at such high temperatures that certain radioactive elements, such as iodine, were driven out of the sample (Allen Vs. USA, Civ #70-0515-J, p.86). For whatever

reasons, suspending the private contractor labs programs of analyzing Sr90 in vegetation insured that the AEC would maintain a firm central control on the monitoring and analysis of Sr90 in vegetation.

Strontium 90 in Minnesota Wheat

In July of 1958, Dr. Visscher sent the AEC several samples of Minnesota wheat crops from different parts of the state to be analyzed for Sr90. It was not until January 25, 1959 that the results were reported to Dr. Visscher. On February 6, 1959, Gov. Freeman held a press conference where Dr. Visscher released the Task Group's interpretations of the findings. Dr. Visscher reported:

> The findings indicate that some further action is necessary in connection with atomic energy problems, especially in regard to the establishment of a permanent State Commission and in connection with appropriation of funds for its work. There are possibly serious economic as well as health implications to the entire North Central and Plains region including Minnesota in the data we are presenting (Visscher, 2/6/59).

The data was presented in terms of Sr90 per gram/calcium in the wheat. Visscher found that the average samples for the 1958 wheat crops had exceeded the maximum permissible concentration of 100 micromicrocuries Sr90 per gram calcium by 50%. Visscher stressed there was not cause for alarm, since one derives only 5-10% of the calcium of one's diet from wheat. Dr. Visscher pointed out, however, there was inadequate data on Sr90 in other foods, such as

milk. Comprehensive monitoring of milk would be important because Americans derive more than 75% of their calcium from milk. Although the average level of Sr90 found in the wheat was not dangerous, levels such as 600 micromicrocuries per gram calcium as found in one sample could present long-term hazards. Visscher noted that Sr90 in the food was more of a hazard to children than adults (Visscher report, 2/6/59). At that time, findings indicated there was a forty-fold difference in the levels of Sr90 which was found in the average 40 year-old and the bones of the average 2 year-old (Caster interview, 9/23/84).

Dr. Visscher's report was intended to alert Minnesota residents and officials, along with neighboring states, that more must be learned about the Sr90 contamination problems. Milk, meat, fish, poultry products, and vegetables required intensive study. Corrective measures must be planned and prepared since there might be some localities in the future where all the foodstuffs, including milk, would be heavily contaminated, and if bomb testing continued throughout the world, the situation would undoubtedly become progressively worse. It would seem essential, according to Visscher, to be able to protect children from food containing as much as 600 micromicrocuries per gram of calcium. To do this, Visscher asserted the state of Minnesota and its scientists needed much more analytical information (Visscher report, 2/6/59). Visscher concluded:

> It is the responsibility of the State Legislature to decide whether to make a serious effort to minimize these... hazards. It can...[be done] by establishing the Commission [an independent radiation monitoring and analysis program] that Gov. Freeman is requesting....Gov. Freeman's foresight... is responsible for the fact that Minnesota is the first state... to obtain information of the type reported at this time.
>
> There will be some... who will say that these findings should have been kept secret, so as not to disturb people. Their false logic would be that 'what people don't know won't hurt them.'
>
> In any democratic society people not only have a right to know, but must know the facts if they are to act intelligently. The role of the scientist is to provide a sober interpretation of the facts, to allow people to take precautionary and preventive measures before it is too late.
>
> Fortunately, we have a governor whose policy it is to give the people the facts so that they may act intelligently through their Legislature. The present situation is not one to become panicky about. It is, however, one that requires increased information to avoid a panic situation in the future (Visscher report, 2/6/59).

Despite the fact that the highest count of Sr90 in Minnesota report to Visscher was from the largest milled wheat production center in Minnesota, the AEC did not make any attempt to go back and do an intensive study of the region. As will be seen, their response to the problem simply was to recalculate the permissible level of Sr90 in foodstuffs in order to bring all but two of the samples below the maximum permissible concentration of Sr90.

Three days after the press release of the Sr90 counts in the wheat samples, Dr. Visscher wrote Senators Humphrey and McCarthy asking for a Senate investigation. Visscher thought an investigation might induce the AEC to determine the practical values of radioactivity in soil, plants, and

animals, including man, and to obtain comprehensive data on foodstuffs in the American diet. He was shocked that the AEC had not conducted a significant Sr90 analysis of Midwest wheat. Visscher wrote:

> The AEC has been so concerned about reassuring the public that there is no harm in what it has been doing in the bomb testing area that it has failed to devote enough attention to finding out the facts even as to what the levels of radioactivity in foods are (Visscher to Humphrey and McCarthy, 2/9/59).

As a result of Visscher disclosing the Sr90 levels found in the wheat samples at the February 6 press conference, a telegram was sent from London to the U.S. Secretary of State requesting information on the validity of the Sr90 data.

The British Ministry of Health asked for an authentic copy of the data and an evaluation by the AEC Division of Biology and Medicine because of the implications of "possible health hazard though consumption of U.S. wheat purchased by the U.K." (Werner to Wells, 2/12/59).

On the same day that the Division of Biology and Medicine received the telegram from London, Dunning sent an "official use only" memo to Dr. Dunham, Head of the AEC Division of Biology and Medicine. In this memo, Dunning recounted briefly the exchanges between the AEC and Minnesota during the past year. He said of the February 24, 1958, meeting with the governor:

> In an effort to avoid a direct reply to their request for the AEC to finance a laboratory for their

use, it was decided to have HASL analyze some of their samples. During and following these events not all the problems were scientific in nature.

In light of the present events, and in the belief that our problems are not ended in Minnesota, I would suggest the following:

1. There should be a definite assignment of responsibility to follow on all of the factors that bear on the collection and analysis of the wheat samples. ...It is not advisable to accept blindly whatever materials are sent us and then publicly report the results without the necessary information...

2. The highest strontium units found in the wheat samples (610 and 602 strontium units) were greater than the others not [so much, pencilled in] because of a larger Sr90 content but because of a lesser amount of calcium. As you know, the subject of calcium content in foods was discussed in relation to the Rongelap [Bikini Islands] data. You may wish to ask Hal Hollister to put further thoughts to the calcium content problem [emphasis mine] (Dunning to Dunham, 2/12/59).

Dunning also noted in the Official Use Only memo that he was not against the state of Minnesota's plans for a scientific symposium on fallout, but that he was against the symposium being held in Minnesota "solely on scientific considerations." What those scientific considerations were, Dunning never revealed.

Playing "Fast and Loose" with the Numbers

The AEC quickly came up with a solution to the report of the Minnesota anaylsis of the wheat exceeding the maximum permissible level. When the AEC released the findings in January, 1959, the levels were reported in terms of Sr90 per gram of calcium. Dr. Visscher accurately reported that

those levels did in fact exceed the maximum permissible level for human consumption (100 micromicrocuries per gram calcium) but had said that there was cause for concern, not panic, since wheat had such a low calcium content. What the AEC did was to draft a reply to the London telegram stating that the Visscher report had been a product of "misinterpretation." The AEC's interpretation of the data, sent to the British Ministry of Health, was that 22 of the 23 samples analyzed were actually well below maximum permissible levels. They based this interpretation not on the Sr90 per gram of calcium in the wheat but on the Sr90 level per kilogram of wheat. Three months later, in the hearings on fallout before the special subcommittee on radiation of the JCAE, Visscher submitted written testimony which found the basis of the AEC recalculation of the permissible level of Sr90 per kilogram of foodstuff rather than the earlier method of per gram calcium untenable (1959 Hearing Report, Appendix B, p. 2141).

Despite the recalculation of the data, bringing all but one sample below the maximum permissible level, a member of the British Parliament, Konni Zilliacus, was alarmed by the report of the high Sr90 levels in the Minnesota wheat and called for a ban on the importation of the U.S. wheat, cereals and related products (Associated Press, 2/24/59).

The AEC responded to the threat of a ban on wheat by having the United States Information Agency send telegrams

to all U.S. Missions in countries which imported U.S. wheat. The document was entitled, "Background on Sr90 in Wheat." This document stated that it was the level of Sr90 in the total diet which counted and that the present American diet was estimated to have about one eighth of the permissible level per kilogram of food. The amount of Sr90 found in the bones of children was only 2% of the maximum permissible body burden. The report noted that one would have

> to eat at one sitting a few tons of wheat containing 80 micro-microcuries per kilogram of wheat before the maximum permissible amount would accumulate in the body (Background on Sr90 in Wheat, no date).

The British did not ban the import of U.S. wheat.

The conflicting information in the media generated a flurry of requests for clarification on the hazard of Sr90 in wheat from concerned citizens, congressmen, national flour milling associations, bakers associations, correspondents from magazines and newspapers such as Time-Life, and from one presidential aide requesting information for a presidential news conference.

One concerned citizen was Mrs. John Harms of Carmel, California. She wrote Clinton Anderson (D-NM), chairman of the JCAE, on February 23, 1959. She pointed out the contradictions between Dr. Visscher's and the AEC's interpretation of the Minnesota wheat data. In a February 7 United Press International story, she said:

> Scientists said the Sr90 average of all 1958 crop samplings was one and one-half times the 'safe limit'

set forth by the AEC. Visscher was quoted, 'We did not expect to find as high quotas in the wheat as we did. The situation undoubtedly will get worse if the world continues nuclear bomb testing.'

Yet a February 17 UPI wire story flatly contradicted the earlier article. According to the AEC version of the same strontium sample findings,

> The officials said there is no indication anybody in the world is getting anywhere near the maximum permissible dose of Sr90 from food. The average of Minnesota wheat sample for 1957-1958 was far below permissible levels (Harms to Anderson, 2/23/59).

Mrs. Harms had written Dr. Visscher earlier to try to clear up the contradictions between the two articles, and she included his reply in her letter to Sen. Anderson. Dr. Visscher wrote her:

> The AEC has simply changed its basis of calculation ofpermissible levels of Sr90 in foodstuffs. Earlier maximum permissible dose levels were expressed in terms of micromicrocuries of Sr90 per gram calcium. They are now proposing to express it in terms of kilogram of food or liters of fluid. This will hardly be a tenable basis of calculation because if there were as much as 80 micromicrocuries per liter of water, we would in hot weather be getting many times the permissible amount per day.
>
> In the last analysis, it is only the facts that are of any importance, and the facts are that the levels in such plant crops as wheat have risen from zero in 1945 to 155 micromicrocuries per gram calcium in 1958. It is our hope that they will not continue to rise. What is badly needed is more research on this problem, and also, very much more information about the actual levels of radioactive materials in all of the foodstuffs which make up the human diet in various parts of the world.
>
> It is quite ridiculous to say that `there is no indication anybody in the world is getting anywhere near the maximum permissible dose of Sr90 because no one in the AEC or anywhere else has actual information on the complete diets of anyone in the world.

> What the world public has a right to resent is the bland reassurances it has been given in the absence of factual information (Visscher to Harms, 2/20/59).

Dr. Visscher wrote Sen. Humphrey on February 29, 1959, pointing out that the rising levels of radiation due to fallout may become serious in the future and that the AEC had "no excuse" for not having "basic data on all of the major American foodstuffs" nor was the AEC devoting enough research toward ameliorating Sr90 as a hazard. Dr. Visscher ironically noted that AEC Commissioner Libby's "interpretations are in large part identical with those I gave in a press conference with Gov. Freeman on Feb. 6, 1959" (Visscher to Humphrey, 2/28/59).

On March 6, 1959, Sen. McCarthy sent Commissioner Libby Dr. Visscher's earlier February 6 letter, asking the AEC to respond to Visscher's allegations on the failure of the AEC to conduct adequate radiation monitoring of all American foodstuffs.

Libby passed these letters on to the head of the Division of Biology and Medicine, Dr. C.L. Dunham, for his reply. Dunham did not directly respond to any of Visscher's allegations, but instead sent McCarthy three documents for his information (Dunham to McCarthy, 3/20/59). The packet of letters included one from Libby to Visscher dated March 6, 1959 in which Libby stated:

> I am particularly anxious that we in the AEC do everything we can to make known what we know about fallout and see that the most important unknown areas

> are investigated. We have been concentrating on human bone, milk, rain, and soil and I am afraid thus somewhat under emphasizing grain and vegetables (Libby to Visscher, 3/6/59).

Libby asked Visscher to take part in the JCAE hearings on fallout in May. Dunham also enclosed a copy of the AEC "Background on Sr90 in Wheat" to McCarthy. Without responding to any of Visscher's allegations, Dunham's reply gave the impression that Visscher's allegations were without merit, since:

1. Libby's letter gave the impression the AEC was doing everything possible to explore and release all the known information on fallout in America; and,

2. the AEC report on Sr90 in wheat implied that a comprehensive monitoring of major American foodstuffs was unnecessary since the average American diet contained only about one-eighth of the maximum permissible concentration of Sr90.

In light of the "anxiousness" of the AEC to make everything known about fallout available to the public, it is odd that on March 25, five days after Dunham's reply to McCarthy, Dunham would send a memo to Libby recommending against bringing the U.S. Public Health Services into the arena of monitoring vegetation for Sr90. Dunham wrote Libby:

> [The DBM] is aware of the problem of the need for additional information concerning Sr90... in cereal grains and vegetables. At the present time we are preparing to increase our sampling program in this area.... We definitely should not turn this over to

> the Public Health Service. Work is being undertaken by the Pure Food and Drug Administration in this area and we will coordinate with them to make certain that our programs do not overlap (Dunham to Libby, 3/25/59).

Given the magnitude of the sampling and analyzing needed to gather a complete picture of fallout in American foodstuffs and DBM's past history of working with the Public Health Service, it is not clear why Dunham would so strongly recommend against seeking PHS help in this area. The USPHS was the first agency Dunham listed in the May 1959 JCAE hearings of agencies which the AEC worked with in gathering fallout data.

The need for assistance in analyzing fallout data was even s more marked by the fact that the AEC files did not show the suspended private contractor labs coming back on line for analyzing Sr90 in vegetation at this time. With the level of controversy generated by the release of the Minnesota wheat samples, it is no wonder that the AEC wanted to maintain a firm central control over the analysis of Sr90 in vegetation.

Congress Gets into the Act

The Joint Committee on Atomic Energy was the primary watchdog of the AEC in protecting the U.S. public. The AEC was mandated by law to fully comply with the requests for information by the JCAE. Sen. Clinton Anderson (D-NM) was chairman of the JCAE during this time and was well known for

his confrontations with the AEC. In December 1958, Sen. Anderson learned of a DOD report which found that fallout from the stratosphere, the upper atmospheric layer, "dripped out" at a rate much faster than assumed by the AEC. He requested documentation from both the DOD and the AEC supporting this new information.

General Herbert B. Loper, Assistant to the Secretary of Defense (Atomic Energy), wrote Sen. Anderson on February 19, 1959 and informed him that the half-time residence of stratospheric fallout was only two years rather than seven years as estimated by the AEC scientists, most notably AEC Commissioner Willard F. Libby. The letter also contradicted the AEC pronouncements that fallout scattered evenly across the globe. The Department of Defense found that fallout was heaviest in the 35 degree - 50 degree latitude band north or south, which covers part of the Northern United States. Despite the new evidence, Gen. Loper wrote to Sen. Anderson:

> The risk of damage resulting from the testing of weapons is therefore extremely small and much less than other common day occurences such as X-rays, automobiles, chemical contaminants, household cleaners, etc. <u>However, the probable casualties attributable to radioisotopes from weapons testing when summed over the populations of thousands of years creates a moral issue that could be of considerable propaganda importance</u> [emphasis mine] (Loper to Anderson, 2/17/59).

The letter to Sen. Anderson was marked "Confidential-Restricted Data." Classifying the information infuriated

Sen. Anderson. He thought it vital that the information be made available for scrutiny by scientists in the general public.

Less than two weeks later, Commissioner Libby sent Gen. Loper a letter classified "Confidential" which disputed the DOD's calculations of the resident half-time of fallout in the stratosphere being only two years. Libby said the AEC had restudied the problem of stratospheric fallout and found the half-time fallout rate to be "about four years," rather than the earlier AEC position of seven years, or the DOD position of two years. Libby said the new position of the AEC on stratospheric fallout would be made known in a study which would be released on March 13, 1959 in a speech by Libby in Seattle, Washington.

As to the notion of there being a band of maximum "drip-out," Libby called that an old argument which was still not resolved. Libby stated the findings were obscured by the fact that high fallout in the "Northern Hemisphere is due to tropospheric [the lower atmospheric layer] or local fallout which was never in the stratosphere." (Libby to Loper, 2/27/59 w/cc to Sen. Anderson.)

On March 9, 1959, Sen. Anderson wrote the Department of Defense. He asked the DOD to justify the classification of the Gen. Loper letter and asked what part of the letter would he be able to discuss in public without jeopardizing

the classified information (from Attchmt. #4, JCAE rel. #211, 3/22/59).

While waiting for a reply on the classification problems of the letter, Sen. Anderson monitored the speech made by Libby on the AEC's "restudy" of the stratospheric fallout problem, which was presented in Seattle on the 13th of March. Libby's speech stayed close to the previous AEC party line on fallout in his "restudy." He stated the half-time residence of fallout was between five and ten years, with a mean residence time of six years. Libby's restudy of the problem made no mention of the Department of Defense findings of the half-time fallout rate being only two years, nor of his statement in a confidential letter made two weeks earlier to Sen. Anderson of the half-time fallout rate being four years.

Sen. Anserson was angered by all the contradictory information and by the fact he was prevented, because of "national security," from speaking out on these glaring inconsistencies.

On March 18, 1959, the Department of Defense downgraded Gen. Loper's letter to "Confidential." Only one sentence in the entire letter contained classified information. Yet the DOD felt:

> Although the remainder of the letter is unclassified, the Department recommends that it not be discussed in public because there is not full agreement as to the interpretation of the data that has been obtained so far. We believe it would be far better before the data

> and conclusions are made public that there is a close agreement amongst the investigators concerned. Therefore, we believe that until the results are more than preliminary, the CONFIDENTIAL classification should remain on the letter (Attchmt #4, JCAE rel. #211, 3/22/59).

It was clear to Sen. Anderson the reason the DOD wished to keep the letter classified was more political than a matter of national security. He kept the pressure on DOD until, two days later, the DOD declassified the letter, minus the one classified sentence. The AEC followed suit the next day by declassifying the Libby letter which disputed the DOD findings of a more rapid rate of stratospheric fallout.

With the two letters declassified, Sen. Anderson went to the press to report the contradictory findings, along with the difficulties of obtaining information from the AEC. The New York Times ran both letters on Sunday, March 22, 1959.

On Monday, March 23, 1959, Sen. Anderson brought the whole matter to the Senate floor. He introduced the correspondence between the DOD, AEC and JCAE into the Congressional Record. He also introduced several news articles on the issue into the record. One news account pointed out that although Sen. Anderson was frustrated by the AEC and the DOD keeping the information secret, he optimistically intrepreted the data as meaning that future fallout would only be half that expected, since the fallout

was coming down twice as fast than earlier presumed (Richard Fryklund, "Anderson Sees Fallout Reaching Faster Rate--But New Data Disclosed by Senator May Mean Total Quantity is Smaller," Washington Star, 3/22/59; in Senate Record 3/23/59, p. 4367.)

Another news article pointed out Libby's attempts to suppress the information, with the help of Gen. Loper, until Libby could release data that would come into closer agreement with the DOD's findings. Edward Gamarekian, in "New Fallout Data Put AEC's Libby on Spot," pointed out:

> Some Congressmen said yesterday that this entire episode may throw considerable doubt on Libby's revised estimates and his predictions of the future fallout pattern. Libby has been the AEC's leading expert and theoretician on fallout.
>
> This episode also throws into confusion previous predictions on the amount of strontium 90 which will be deposited on the United States over the next decade as well as its rate. Both are important, since a faster fallout means it will come down hotter.

Gamarekian concluded:

> They [Libby and Loper] also talked in terms of external radiation and omitted [the effect of] internal radiation produced by the ingestion of radioactive atomic end products. Loper mentioned strontium 90, but gave no figures, saying only that the fallout of this radioactive element is greater in the United States than in any other area of the world. Libby did not refer to it at all (E. Gamarekian, "New Fallout Data Puts AEC's Libby on Spot," Washington Star, 3/23/49; in Senate Record 3/23/59, p. 4368-69).

Finally, an editorial run in the Washington Post on the same day summarized some of the most salient points:

> ... once again the Atomic Energy Commission has used a 'secrecy' stamp to try to prevent the public from learning this and other data vital to the health and

> safety of the Nation. Sen. Anderson... has expressed outrage at this attempt to smother information.... This faster fallout means that harmful particles descend to earth far more quickly and in a much 'hotter' state than previously thought. Surely this is the kind of information that the country has a right to know.
>
> Manifestly, the new information should not cause any panic. The Defense Daepartment estimates that the chances of an individual being immediately affected is about 1 in 500,000. Yet the new disclosure clearly affords no grounds for smug proclamations that fallout may possibly be good for everyone. There is also something deeply distressing about a Pentagon spokesman's cool notation to the committee that the long-run damage of fallout creates a 'moral issue that could be of considerable propaganda importance.' Isn't it conceivable that safeguarding mankind from the malignant effects of fallout might be of more than mere propaganda importance (Editorial, "Faster Fallout," Washington Post, 3/23/59; in Senate Record 3/23/59, p. 4369).

Sen. Anderson summarized briefly the major scientific points gained from the new information, then focused on the aspect of the suppression of information:

> I was surprised and disappointed that although the information sent to the JCAE was unclassified that there was an admonition that the commmittee should keep the information to itself and treat it confidentially. I know of no obligation on the part of the Joint Committee on Atomic Energy to withhold the truth about fallout from the people of the United States. So far as it may be my responsibility on the Joint Committee, particularly as chairman of the Joint Committee, I intend to see that the essential facts are made available to the American people for their independent judgment as to their importance (Sen. Anderson, Senate Record 3/23/59, p. 4369).

Sen. Anderson then yielded to the other Senators who wished to speak on the subject. Most notable among them was Sen. Hubert H. Humphrey (D-MN). Humphrey outlined the steps which the state of Minnesota had taken independent of the

AEC in order to gather all the relevant data on atomic fallout. He entered into the record several other newspaper articles and a report by the Subcommittee on Disarmament (which he chaired) on the latest findings of fallout. Sen. Humphrey then made five recommendations to better get at the truth on fallout:

> First. It is becoming apparent that the Atomic Energy Commission, with its important and primary interest in the field of atomic weapons and the production of atomic power, is not the best agency to conduct research on fallout and its effects on human health and heredity. This research should be lodged in another Government agency, one which has adequate funds to do its job and one which can be completely independent in reporting its findings...
>
> I say this, Mr. President, because I am convinced the Atomic Energy Commission has been playing down the dangers of radioactive fallout as it pursued its weapons program. While we need the atomic weapons as a shield of defense, we also need to be considerate of the lives of human beings now on the face of this earth and those yet unborn.

The second point involved placing the responsibility of fallout monitoring and analysis in the U.S. Public Health Service and providing it with enough money to do an adequate job. Third, Sen. Humphrey recommended that the next commissioner, soon to be apointed to the AEC, be a biologist or physical scientist, so that the Board could more accurately assess the biological hazards of radiation. Sen. Humphrey made this recommendation on the basis of the suggestions of "his fellow citizen" Dr. Maurice Visscher. The fourth point involved getting more information to the United Nations Scientific Committee so that they could be

more involved in the U.S. discussions relating to the international effects of American nuclear wepaons testing. He continued:

> Mr. President, I am not satisfied with having political bodies of this Government screen materials relating to the lives of the people. I have seen enough of such screening through the so-called censorship apparatus.
>
> We are not given the information we need even for our national security, much less for our physical well-being. I rise to protest this kind of self-styled secrecy on the part of agencies of this Government when it involves atomic energy information.
>
> It is important that all relevant material on the health effects of radiation be submitted regardless of whether it confirms or casts doubts on Government statements and conclusions regarding the extent of the danger.
>
> I am of the opinion that a good deal of the material could be [currently] held back if it cast doubt on some of the earlier statements of Government officials. I am not willing to let statements of Government officials be considered more important than the lives of my children or the lives of children yet to be born. We find ourselves today with an overwhelming body of evidence coming forth day after day as to the problems involved in bomb testing and as to the dangers of radioactive fallout. There does not seem to be the kind of deep concern in the high councils of this Government that there should be....
>
> Fifth and finally, it is one thing to conduct more research so that we know more of the complete effects of radioactivity on man and his environment. It is another thing to try to see that this rising radioactivity does not raise further. This means that the efforts to halt nuclear weapons testing must continue to be pursued vigorously.
>
> The Senator from New Mexico [Mr. Anderson] told this body today that the northern parts of the United Starts happen to fall within an area in which the radioactive fallout seems literally to gush down upon us, and fall all over us. Because of geography, we happen to be the victims of a larger dose of radioactive fallout than other parts of the world.
>
> Mr. President, the five recommendations and suggestions above occur to me as a result of reviewing the memorandum and articles that I have submitted for the Record today. I hope that the administration will

> see fit to act on them. If not, further investigation by committees of the Congress become a vital necessity.
>
> I assure my colleagues today, as I have done before, that I stand ready to do everything in my power, as chairman of two subcommittees, one on disarmament and the other on matters relating to world health, to study the danger of radioactive fallout in meticulous detail.
>
> This is something which we cannot trifle (Sen. Humphrey, Senate Record 3/23/59, p. 4371).

Included in the congressional record were all the correspondence between Dr. Visscher and Sen. Humphrey; the February 6, 1959 Gov. Freeman press conference report on the levels of Strontium 90 in Minnesota wheat; a report of the Disarmament subcommittee which summarized the latest findings on fallout; and six additional Washington Post articles written in March on everything from the hazards of Sr90 in milk to criticisms of the "maximum permissible concentration" levels as being meaningless and without scientific grounds. The articles repeatedly mentioned the need for getting the responsibility of health and safety monitoring of fallout out of the very agency which manufactures and promotes the bombs and nuclear energy which produce radioactive fallout.

The following day the chairman of the AEC, John McCone, issued a statement to the JCAE, responding to the accusations by Sen. Anderson, and others, that the AEC was withholding information from the American public. McCone said:

> No Atomic Energy Commission information relating to the radioactive content of the atmosphere and the amount of fallout has been withheld from the public or from United Nations.... Finally, I assure this Committee most emphatically and unequivocally that so long as I am Chairman of the Atomic Energy Commission I shall not be a party to the suppression or distortion of any information bearing on the safety and health of the American Public. I am fully prepared to assist any competent body in developing the facts now in controversy on fallout issues and to disclose these facts to the public. I am confident that the Atomic Energy Commission has not been derelict in its duty in studying radioactive fallout and revealing the conclusions of such studies when the data have been collated and evaluated. If, however, your Committee finds any shortcomings on the Commission's part, I pledge you to initiate immediately the most vigorous and comprehensive corrective measures possible (McCone to JCAE, 3/24/59, pp.2,5.).

Sen. Anderson responded to chairman McCone's statement with an example of a study on Sr90 which was written by Cowan, E.C. Anderson and Langham, and whose authors had requested the immediate declassification of the report in October of 1957. The report was still classified. McCone had the report immediately declassified (Anderson to Compton, 4/20/59). Not to be put into such a position again, McCone wrote a memo to the General Manager on March 27, 1959. In the memo, McCone pointed out concerning the remark that no information on radiation in the atmosphere and the amount of fallout had been withheld from the public,

> This statement was reviewed for accuracy by the Divisions of Military Application, Biology and Medicine, Finance, Classification, and Information Services. However, I wish to check further on our activities in this area to make absolutely sure that we are not withholding or suppressing information (McCone to General Manager, 3/27/59).

McCone requested the General Manager to have on his desk by April 1: 1) all the classified information relating to fallout and the basis for that classification; 2) an independent survey by the Division of Inspection on the procedures and policies of releasing fallout data and the people under whose authority that data is released; and, 3) if there was evidence that information was being withheld, it was to be included in the Divison of Inspections report. McCone wanted to know what the Division of Inspections "activities and responsibilities" were, and considered creating an independent Inspector General in the AEC. McCone requested that the General Counsel review the above suggestions for duscussions on the following week (3/27/59).

What McCone found as the result of his request is open for speculation, since the documents are classified...

From May 5-8, 1949, the JCAE special subcommittee on radiation held hearings on the fallout from nuclear weapons testing. The subcommittee conducting the hearings was particularly sensitive to the two issues hammered home by the committee chairman: 1) the suppression of information; and, 2) the location of radioactive hot spots, given the fact that the northern part of the U.S. receives the highest amount of fallout of anywhere in the world. Though AEC chairman John McCone promised all the information possessed by the AEC would be released to the American public, and the

fact that the 1957 hearing held by the same subcommmittee was touted to hold the most comprehensive data on fallout in the world, in the more than 2000 pages of testimony, the AEC did not present Sr90 counts that were as high as those found on the Sauter farm in western Minnesota.

The hearings opened with an introductory statement by Dr. Dunham. He claimed the earlier 1957 hearings before the subcommittee had amassed the most comprehensive data on fallout to date. He stressed that one of the main considerations of the AEC was "To bring to bear on the problem all the information that can be made available; we take maximum advantage of the combined judgement of able and well informed persons" (Fallout from Weapons Tests Hearings, 1959, v.1, p. 46).

Of all the samples taken in the analyses programs which the AEC had conducted throughout the country, Dunham said, "The sample highest in Sr90 which we have analyzed, however, was of wheat submitted to us by the State of Minnesota" (Fallout Hearings, 1959, v.1, p. 27).

It is not surprising that the person who decided to suppress the knowledge of the levels of radiation on Sauter's farm in western Minnesota was also the person to whom Dr. Dunham referred when asked about specific questions on fallout in Minnesota during the opening of the hearings--Dr. Gordon Dunning.

Given the amount of publicity generated by the release of the Sr90 analyses of Minnesota wheat, the AEC was intent on downplaying the hazards of fallout from the recent nuclear tests. The congressmen were interested in finding out if "hot spots" were created by fallout from the nuclear tests. But just as the AEC in the months before had redefined the calculations on the permissible levels of Sr90 in the Minnesota wheat, Dr. Dunham offered a new definition of the term "hot spot":

> As I first encountered it, it was a word coined by Dr. Kermit Larsen, who has done many of the studies in the vicinity of the Nevada Test Site. When he talks about a 'hot spot,' he is talking about a number of acres. He is not talking about whole counties or whole states in which the radioactivity, fresh fallout, is manifold that short distance away. What we are talking about here is areas, counties, several states wide, which in most instances we believe are the results of rainouts occurring in trajectories from weapons detonated at our test site.... These areas are not severalfold in terms of Sr90 or cesium in adjacent areas, but they may be as much as half again to two or three times (Fallout Hearing 1959, v. 1, pp. 36-7).

The congressional representatives were under the impression the topic of hot spots would be the subject of in-depth discussion during the hearings. They found this not to be the case. Rep. Chet Holifield, chairman of the subcommittee which held the hearings, pointed out the AEC failed to address the problem of hot spots in a scientific manner. On May 18, 1959, Holifield wrote the new General Manager, A.R. Luedecke, on the issue:

> It had been our understanding that the hot spot area problem would receive comprehensive treatment in the hearings. Thus, our outline specifically designated it for discussion in the general review of developments since 1957 with the idea that it would be further discussed at appropriate points by AEC and other witnesses. It is true the hot spot problem was touched upon at various points, but it was not dealt with in any thorough scientific manner. I am sure that much data was submitted bearing on the problem, but again it was not teated as a subject of specific concern.
>
> It would therefore be appreciated if the Commission would provide a statement describing and evaluating the hot spot problem. Such a statement might cover among other things:
>
> a) why we have a hot spot problem;
>
> b) the extent of the hot spot problem, i.e., the areas involved, and the radiation levels (both external and strontium)...;
>
> c) the implications of these hot spot areas from the standpoint of maximum permissible exposure levels, both as to testing to date, and possible future testing, using guidelines established by the seminar on implications of testing.... It would be appreciated if the Commission could supply the subcommittee with a supplementary statement on these two matters so that our fallout hearing record may be complete on these two subject areas (Fallout Hearings 1959, Appendix B, p. 2114).

The AEC was mandated by law to fully comply with the request by Rep. Holifield. Instead of submitting any data on hot spots, such as the levels found on the Sauter farm, the AEC responded with a statement entitled, "The Hot Spot Problem and World Wide Fallout," which was a refinement of the argument used in the earlier AEC document "Some Background on Sr90 in Wheat." The AEC stood by the new redefinition of "hot spot" which Dunham made in the introductions to the hearings, i.e.,

> areas in which the external radiation dose from fallout may be higher by a factor of two to three than an adjacent area and the average Sr90 in soil be double that in an adjacent area.

The AEC concluded their statement to Holifield that what really mattered was that the level of Sr90 in the human bone was so minute that the probablilities of anyone contracting leukemia or bone cancer was extremely low (Fallout Hearings 1959, Appendix B, pp. 2115-6.)

Rep. Holifield was not satisfied with the AEC's response to his request for specific information on the levels and locations of local hot spots in Minnesota and North Dakota. He again wrote AEC General Manager Luedecke on June 17, 1959:

> After reviewing the Commmission's supplementary statement on the hot spot problem... I believe some clarification is still required on the specifics of the question for the purposes of a meaningful record.
>
> In particular, it is requested that the AEC provide the subcommittee with specifics on the actual levels of Sr90 as measured in the various hot spot areas such as Minnesota and North Dakota, together with an interpretation of this information.
>
> If such data are not available, the subcommittee would like to know what measures would be required to obtain such data and what increase in the current levels of support would be needed (Holifield to Luedecke, 6/17/59; in Fallout Hearing 1959, Appendix p. 2116).

Three weeks later, Luedecke responded to Holifield's second specific request for all the relevant hot spot information. At this point, if the AEC had wished to comply with the law of the land, they would have provided the

subcommittee with the Sauter farm findings and other information they had on areas in Minnesota which exceeded background radiation by factors in the hundreds rather than one or two; especially since it was the Division of Biology and Medicine, under which Dunning was the head of the Effects of Nuclear Weapons Tests Branch which filed the report. The AEC, however, stuck to the broad definition of hot spot, and lumped the entire North Central States together as one hot spot region. All number values which they submitted to the subcommittee were for average values of Sr90 in the soil, plants, milk, and other foodstuffs. Luedecke said:

> In summary, estimates of total dietary Sr90 referred to as 'maximum diet' applicable to the population of the North Central States is calculated to be 16 micromicrocuries of Sr90 per kilogram of food. This is to be compared with the International Committee for Radiation Protection recommended level of 100 as the maximum permissible level for populations outside controlled areas, and 33 as their `suggestion' for the average concentration in the diet of the whole population (Ibid. 1959, Appendix p. 2117).

The AEC conclusion to the second response to Holifield was:

> In summary, these studies show that:
>
> 1. Sr90 soil values in the areas of interest... are not higher than the average for the United States as a whole;
> 2. these particular areas, considered from the standpoint of Sr90 contamination over the long term, which is the important consideration now, should not be considered 'Hot Spots' (Hearings, 1959, Appendix, p. 2119).

The AEC summary was followed by about 20 tables of Sr90 in milk, water, air, soil, vegetable, hay, cereal and bakery products (Ibid. 1959 Appendix pp. 2122-29). The only table which could be directly compared to the findings on the Sauter farm were the pasture program hay samples (table 17). Of the nine samples, the highest Sr90 level was recorded in Logan, Utah. The Logan, Utah, Sr90 level was 20 times lower than the highest Sr90 levels on Sauter's farm. The only Sr90 level given for 1957 alfalfa on the table was 100 times lower than the levels of Sr90 found on Sauter's farm.

Sen. Anderson persisted in requesting all the information which the AEC possessed on hot spots in America. In a memo to AEC Chairman McCone, Alvin Luedecke, General Manager, noted in March of 1960 that the AEC had specific values of localities which were subjected to higher than average levels of radiation. For instance, the infants in the city of St. Louis were subjected to over 20 times the background dose for I-131. But, because the fallout situation was not exptected to be repeated (considering the probability of the reocurrences of one locality being the subject of repeated high doses of radiation from fallout), and given the adverse media reaction from reporting such figures, the General Advisory Committee felt it advisable to present only average, rather than specific values (Luedecke to McCone, 3/29/60).

Dead Sheep "In the Ballpark of Causality"

It is clear that not only individuals, but state and federal legislative bodies with oversight authority were powerless in their abilities to obtain the whole truth from the Atomic Energy Commission.

Two conflicting issues were at stake:

1) the protection of the health and safety of the American public; and,

2) the future of the nuclear weapons testing program.

One might say the actions taken by Dunning in suppressing the true levels of radioacvitity on the Sauter farm were the actions of only on man. It should be remembered, however, that Dunning headed the branch which dealt specifically with these types of claims within the Division of Biology and Medicine.

Despite the magnitude of the problem, the Effects of Nuclear Weapons Tests Branch was comprised of only three scientists and two office personnel, of which Dr. Dunning was the chief. Though he was in a pivotal position, others knew of the excessive levels of radiation on the Sauter farm, and agreed to keep the true levels "in the family" of the AEC.

John Harley (chief of the Analytic Branch of the Health and Safety Laboratory), who also participated in the 1959 JCAE hearings on fallout; Oliver Placak (who was in charge

of the USPHS Nevada radiaiton monitoring and analysis program); W.W. Allaire (Director of the AEC's Albuquerque Operations OFfice); and Roscoe Goeke (of the AEC's Eniwetok Proving Grounds) all received the July 15, 1958 memo which stated that the true levels on Sauter's farm were not to be made public for fear of being misinterpreted and damaging to the AEC.

If the counts found on the Sauter farm could not have caused the damages which Sauter claimed, why did they suppress the information? Releasing the counts could have set off a negative chain reaction for the AEC.

On the individual level, the counts would have justified a much more intense sampling and analysis of the vegetation and animals on Sauter's farm. Independent scientists could have calculated the level of radiation from the initial fallout and found the levels to be closer to 10,000 times above normal background radiation rather than 100 times. Releasing the figures could have opened the floodgates to countless other claims being filed against the AEC.

On the state level, releasing the true counts would have legitimated the findings by Dr. Visscher and others on the Atomic Development Problems Committee and would have lent great support to the implementation and funding of a state controlled radiation monitoring and analysis program.

If similarly high levels were found by independent state scientists in Minnesota, concerned citizens, congressional representatives and scientists could have used this information in calling for a halt in the nuclear weapons testing program. For this reason, officials within the AEC chose to protect the broader interests of the missions set out in the Atomic Energy Act of 1954, to promote the development of nuclear energy and to develop nuclear weapons, rather than protecting the health and safety of American lives.

The counts were not released.

The final question that remains to be answered, were 40% of the herd, or 92 sheep, killed on Joe Sauter's farm in 1957 as a result of radioactive fallout from the nuclear weapons tests in Nevada?

Three independent scientists were asked to give their opinion on this question. Bernd Franke is the director of the Institute for Energy and Environment in Takoma Park, MD. He came over from Heidleberg, Germany, in 1980 at the request of the scientific panel studying the doses of radiation received by the people in the community surrounding the Three Mile Island accident. Dr. Karl Z. Morgan, former director of the Health Physics department of the Oak Ridge National Labs, and Dr. Roland Finston, currently head of the Health Physics department at Stanford

University were solicited for their opinions on the question.

The most lucid analysis of the question is that of Dr. Finston. Dr. Finston met with me three times over the last two years on the case. In August, 1986, Dr. Finston reviewed the narrative of the case, and compared the gross beta and strontium counts found on the Sauter farm, with the fallout studies and their effect on sheep as a result of the "Nancy" shot from the Operation Upshot-Knothole series in 1953. Dr. Finston picked the "Nancy" study for comparative analysis, because it's dose calculations fit the Sauter case more neatly than any of the other AEC or DOE contracted studies on fallout and its effect on sheep. In that instance, sheep in Nevada and Utah were dusted with fresh fallout within 12 hours after detonation of the bomb. On August 30, 1986, Dr. Finston wrote me with his analysis. Rather than take anything out of context, his analysis is included in full as follows:

Dear Cliff,

I have been pondering what to make of the Sauter sheep story. The greatest unknowns are:

1. How much weathering occurred, between the time the leaves that fell to the ground in 1957 were collected in May of 1958? We could conservatively assume none. (If there was any weathering, the doses would be <u>higher.</u>)

2. How much time were the collected leaves on the trees (and weathering) before falling to the ground? Although it is anecdotally stated that

leaves started falling early, we don't know if the leaves collected that (and therefore weren't eaten by the sheep) might not have been the last ones to fall to the ground. Let's assume the leaves that were collected in 1958, fell to the ground about Sept. 1, after 70 days of weathering, following their contamination on 6/22/57.

3. Using the weathering formula from "Nancy" sheep report PNL-4278: UC-41

   (0.75e-0.693t/5 day +0.25e -0.693t/18 day), the 70-day weathering reduced the amount on the leaves to 0.0387 of its initial value.

4. What did the sheep eat from 6/22 on? Because the fresh fission products have so many short lived species, I believe if they were injured by Wilson fallout, it was as the result of browsing on vegetation on the ground at the time of the rainout, rather than from the leaves, which only began to fall a week later. One might assume that the amount we calculated to be present on the oak leaves was also present (same mCi/kg) on the browse. What do you surmise about that? Were that the case, and neglecting the weathering calculation for a moment, if you back-decay the gross B count (4900 d/m/g ash) to "unit-time" e.g. 1 hour post detonation) and assume the total gross B count was all as the result of Wilson, then assume all the fallout arrived at 96 hours post detonation and the sheep began grazing on it at that time then using

   Fig. 9.26 of Glasstone I calculate "gross B" intake (total) 1.7 mCi between June 22 and Sept. 1 as the result of eating 1.4 kg/day (dry weight) of food contaminated similarly to the oak leaves. If you then take into account the weathering factor: 1.7mCi/(0.0387) = 44mCi total intake gross B-activity.

5. Would such an amount kill the sheep? 3 out of 8 of Sasser, Bell, and West's sheep fed 234 mCi (78 mCi/day for 3 days) of Yttrium 90 died, (on days 25, 102,133 following dosing).

   So we're "in the ballpark," albeit, a bit low. In another analysis, retrospective like ours, Sasser et al calculated a localized dose of 200

rems to part of the rumen wall of the "Nancy" sheep who they calculated had ingested 3.5 mCi in a week (the "40mr/hr (H+12)" group). So, it's conceivable that Sauter's sheep had some local hot spot doses (in their rumens) in the range sufficient to produce G..I. damage 44/3.5 X 200 = 2500 rads).

6. There are a lot of very loose ends in this analysis. I would not stand up in a court of law and try to prove that Wilson fallout caused the kill. It would be better to see if any other measurements on the diet the sheep were on from 6/22-6/29 might be inferred, for that is when the major dose was inflicted (the first week); is is plausible that local rainout from a 10kt shot ever produced 10's of mr/hr at H+4 days, that far downwind?

I look forward to your reaction.

Sincerely,

Roland

P.S. A parallel analysis using the "fresh" Sr-90 activity in the ash leads to a similar conclusion: each sheep would have ingested 9.2mCi gross B intake from 6/22-6/29; assuming a weathering factor of 0.0387, ash is 10% of dry weight, ground vegetation similar to contamination to oak leaves, ingestion began with the rain out of 6/22.

That's about the best I can make of it, somewhere between 10 and 40 mCi ingested (Finston to Honicker, 9/30/86).

Dr. Finston made his analysis on the Sauter case twenty nine years after the fallout took place. He made his analysis 15 years after the death of Joe Sauter. As such, Dr. Finston had to make several logical assumptions about the fallout scenario. In the AEC Claim form that Sauter filed, he noted the first dead sheep were found under the grove of oak trees, whose leaves were "shedding." Sauter's

nephews remembered the leaves falling off well before the first frost, because it was the first and last time they had seen such an event, but they did not remember exactly when that was. Dr. Finston made the assumption that, though the leaves registered a high amount of radiation, it was not the leaves that killed the sheep. It was what they ate "on the browse," the week immediately following the initial fallout.

Dr. Finston made the keen assumption that the leaves Sauter collected, in all likelihood were not the same as the more radioactive leaves that fell off the trees shortly after the fallout hit his farms. Those leaves were eaten by the sheep. The leaves that remained on the trees and were not eaten by the sheep had a longer time to decay. Thus, Dr. Finston came up with the 70-day weather factor.

Dr. Finston points out that the 70-day decay factor is the length of time the leaves weathered on the trees before falling to the ground. Since he had no equations for figuring the weathering factor for the 250+ days that the leaves reamined out in the open, on the ground, that estimate was left out. A longer weathering time factored in would result in a higher dose received by the sheep. As such, Dr. Finston's assessment can be seen as conservative.

Despite the fact, Dr. Finston found that the level of radiation was "in the ballpark, albeit a bit low" for causing the death of the sheep. But, there are too many

uncertainties, too many times where critical facts are not known and assumptions are made, for Dr. Finston to say that the death of the sheep could be proved to be caused by radiation.

One could be drawn into an endless controversy, trying to prove or disprove the death of the sheep due to radiation, based on the known facts. A hundred different factors could be introduced that would either increase or decrease the dose estimates by several factors of magnitude.

Two very important questions, however can be answered. One, is it likely that all of the fallout was from one shot? And, two, did the symptoms that Sauter's sheep exhibited, resemble in any way those exhibited by Bell, and his associates after their experimental sheep were fed Yttrium 90 laced alfalfa pellets, which simulated fallout Bell, et al., 1970: , 71-82)?

If either question is answered negatively, then there is no point to continue any speculation. If the vegetation on Sauter's farm were contaminated by a number of different (and presumably later) shots, then a precise measurement or estimate would be impossible. As equally important, if the symptoms that Sauter's sheep exhibited in no way compared to known symptoms of radiation sickness in sheep exposed to simulated fallout, then a case of radiation exposure would be very difficult to even consider.

There were five other shots whose fallout clouds passed over or near the vicinity of Sauter's farm in 1957, according to the trajectory maps developed by Lewis Machta of the Us Weather Bureau Special Projects office. They are listed below:

Shot	**Kt**	**date det.**	**date passed**	**height**
Wilson	10	6/18/57	6/22	10,000 ft
Kepler	10	7/24/57	7/25,evening	30,000 ft
Owens	9.7	7/25/57	7/26	30,000 ft
Smokey	44	8/31/57	9/1 evening	20,000 ft
Newton	12	9/16/57	9/17 evening	20,000 ft
Morgan	8	10/7/57	10/8	40,000 ft.

The rain data for the town of Alexandria (the town closest to Sauter's farm where climatological data was gathered) for the days the shots passed over or nearby are as follows:

June 22nd..... 1.3 inches

July 25th..... trace

July 26th..... trace

Sept. 1st..... 0.23 inches

Sept. 17th..... trace

Oct. 8th..... 0.01 inches (source: Minn. Star)

The Wilson shot distinguishes itself from the other five shots in two important areas. The clouds from the other shots were in the stratosphere, high above the rain clouds. As mentioned earlier in the report, Willard Libby

and others became embroiled in an argument with Sen. Clinton Anderson on the mean, half-residence time for fallout in the stratosphere. The estimates ranged from two to seven years. The fallout cloud from the Wilson shot that passed in the vicinity of Sauter's farm was in the troposphere, or at 10,000 feet. Fallout in this cloud layer is generally assumed to fallout close to the test site, and it generally falls out of the sky within a few months at most. Where there were light to nearly non-existent rains at the time of the other shots (whose clouds were travelling above the rain line), there was a comparative "deluge" of 1.3 inches at the time of the Wilson shot passing over. The radioactivity from the Wilson shot stands as the most logical candidate for depositing the radioactivity found in the vegetation samples on Sauter's farm.

The answer to the second question can be found by comparing the symptoms Sauter's sheep exhibited with those found in the experimental study of Bell,et al., (1970).

In the claim form that Sauter sent to the AEC, he described the sheep as suffering from scours, shrinkage of the flesh, paralysis, and the entire floor section of bladder and "urinals" in one animal is absent. He described the area (bladder and urinals) as looking cancerous. Another symptom Sauter observed was weight loss: one animal

shrunk from 80 to 40 lbs. Other difficulties centered around the difficulties in birthing and reproduction of the animals.

Bell and his associates found that animals who were fed the higher levels of radiation (the 234 mCi that Dr. Finston mentioned) suffered weight loss on the average of 1-2 pounds per day (Bell et al, 1970: 73). Sheep fed the higher levels of radiation developed mild to severe diarrhea (Bell et al, 1970: 75). And finally, lesions, blisters, polyps developed where the fallout settled in the rumen and abomasum of the digestive tract, although they did not see lesions in the large intestine as earlier predicted (Bell et al., 1970: 77).

There are some similarities between the two. Sauter said his sheep were suffering from "scours." Scours are what farmers call a severe diarrhea in young animals. Bell and his associates found mild to severe diarrhea in the higher level radiation exposed sheep. In both cases, the experienced weight loss. Anorexia is a well known symptom of acute radiation poisoning. Finally, Sauter apparently cut one of the dead animals open and found gross abnormalities in the "urinals and the bladder. The region is cancerous." It is possible that he saw areas in the digestive system where the fallout settled, leaving black,

necrotic, blistered, or polyp like growth areas, as Bell and his associates described in their study.

In conclusion, it is conceivable, even plausible that the sheep on Sauter's farm were injured, even mortally injured by radiation. But it's not provable. The reasons for this do not necessarily deal with the limitations of our knowledge of physics. They have to do with government officials who, 28 years ago, covered up the true nature of the facts regarding fallout, out of fear of damaging the programs of the Atomic Energy Commission.

Had Sauter been given the true counts on the farm back in 1958, even with a detailed denial from the AEC at the time as to their blame for causing the damage Sauter alleged, Sauter could have easily gone to Senator Humphrey for help in finding independent scientists to affirm or refute the AEC's position. Sen. Humphrey, as reported in the April 14th, 1958 edition of the Minneapolis Star, was committed to helping Sauter on the fallout case. Even the state of Minnesota was committed to developing independent sources for monitoring and analyzing radiation. With independent, or even Minnesota state scientists working on the case with Sauter, all the unanswered questions that we face today would have been answered.

The outcome of releasing the information, getting it into the hands of Sen. Humphrey, Sen. Anderson of the Joint

Committee on Atomic Energy, the Minnesota scientists Dr. Caster and Visscher, could have ultimately affected the momentum of the atmospheric nuclear weapons testing program. That is the only interpretation that can be made by Dunning's observation that "misinterpretation of the data could prove damaging to the AEC."

The AEC government officials, who were supposedly making scientific decisions, made a political decision to withhold information for fear of harm coming to the overall nuclear weapons program. But that decision was not theirs to make. It is the right and duty of congressional representatives such as Sen. Humphrey and Anderson to openly question government practices (such as nuclear explosions) that threaten to endanger the lives and property of American citizens. But the AEC officials held a tight rein on information critical to their program, and as such manipulated the public's opinion about the safety of fallout from nuclear weapon's test. The AEC had the absolute power over the control of information coming in this arena. As Lord Acton said "Absolute power corrupts absolutely."

For many years, the Atomic Energy Commission was openly criticized for its dual role in both regulating and promoting nuclear energy. That is why, in 1973, the Atomic Energy Commission was abolished. Out of the ashes arose two agencies, the Department of Energy, which controls the

production of nuclear weapons, and the Nuclear Regulatory Commission, which licenses, and oversees the operation of America's nuclear power plants. But, from the experiences gained from the 1984 Congressional investigation, the actions of the DOE in withholding information from the House Energy, Conservation and Power Subcommittee in 1984, were no different than the AEC withholding information from Sauter, the scientists representing the State of Minnesota and Sen. Humphrey in the late 1950's.

As long as secrecy and fear dominate, sectors of our government will remain more authoritarian than democratic. It is indeed ironic, that the nuclear weapons program was first developed to stand as a bastian against authoritarianism. Yet, the men carrying out the day to day duties of those agencies acted as though the development of nuclear weapons was paramount. Individual's rights could be sacrificed "for the good of the country."

CHAPTER V

CONCLUSION:
THE SOCIOLOGICAL SIGNIFICANCE

Three Rules to Remember

As the son of Dolph Honicker, 25 year veteran news editor of the Nashville Tennessean, I was given three rules of writing and reporting:

> Son, [my father would say] Number one, never make assumptions if the facts aren't there to support them. Number two, don't explain, let the facts speak for themselves. And number three, never end a sentence with a preposition.

It was for these reasons that the most conservative reading of the documents found in the files has been presented. That is why it was stated in the first chapter that Dunning "should" have known (but not that he did know) about the laws regarding fallout and decay curves, and why it was absolutely imperative to factor back to the time of the fallout so as to assess the true level of damage on Sauter's farm. Despite the man's prestigious position as the chief of the "Effects of Nuclear Weapons Testing Branch," I could not categorically state that the man knew the facts on fallout, and that he nevertheless covered up. What if Gordon Dunning was incompetent, hired only because he had a PhD in Science Education, and only as a figurehead to deny any and all claims of radiation injury? He might

have known little about calculating the levels of radiation and the unit dose to individuals (or animals) more than a year after the initial fallout.

Before passing judgement on the man, and the AEC, I had to determine if the man was capable of making certain evaluations, regardless of his position. The critical scientific evaluation that was never done by Dunning in the Sauter affair was the simple calculation of determining the unit dose at the time of fallout. Even excluding the weathering factors, Dunning could have gone back to Glasstone's The Effects of Nuclear Weapons and plotted the decay curve. To this point, following my my father's injunction, I've given the man and the Agency that he represented every benefit of the doubt.

Two new pieces of information concerning Dunning have come to light. Not only did this scientist know about decay curves; when it came time for the Atomic Energy Commission to explain the meaning of decay curves and its relation to fallout at great distances from the nuclear test site, it was Gordon Dunning who explained the scientific nature of the rapid decay factors of fallout to Congress in his address to the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy in the hearings titled "The Nature of Radioactive Fallout and its Effects on Man." (JCAE, 1957: 170-247). Dunning's extensive testimony and presentation of graphs and reports demonstrates the

incontrovertible fact that he not only was aware of decay curves, it was his duty to explain the nature of radioactivity in relation to decay, the effect radioactivity had on humans, plants and animals, including the function of time with respect to dose.

Why, if he knew precisely how to calculate the true levels of radioactivity on Sauter's farm, did he not do that and then use those true levels to make some sort of accurate estimate of the dose that Sauter's sheep received to their gastrointestinal tract? In his testimony subheaded "Internal Exposures," he stated:

> The principal hazards from intake of relatively large amounts of radioactive fallout for several weeks immediately following a nuclear detonation are doses to the: (a) gastrointestional tract, from the gross fission product activity; (b) thyroid, from isotopes of iodine; and (c) bone, principally from isotopes of strontium and barium-lanthanum (Dunning, in Hearings, 1957: 177).

From the symptoms the sheep exhibited before they died (indicating severe gastrointestinal disturbances) and the extremely high 1 year + post shot radiation findings, whistles, bells, sirens should have been going off in Dunning's mind, alerting him to the fact that there was evidence on Sauter's farm that radiation might well have been involved in the death of the sheep.

But instead of investigating, Dunning chose to coverup.

Thirty years later, Dunning's list of problems from fallout have come to haunt Douglas County in Minnesota, the

home of Joe Sauter's farm. Cancer rates for Douglas County have been compiled from the U.S. Cancer Mortality, Rates and Trends Volumes 1-3 by Dr. Richard L. Miller (see Appendix C). Both thyroid cancer and bone cancer are statistically higher than expected in Douglas County compared to the cancer rate for the state of Minnesota as a whole. The facts are even more disturbing when one looks at the fact that Douglas County has a lower cancer rate than the state for "All Cancers Combined," yet many radiogenic cancers such as the two mentioned above, along with leukemia, malignant melanoma, multiple myeloma are above the state cancer rates. (For a graphic illustration of the problems, see Figures 3, 4, and 5.)

Government statisticians might retort that the numbers of cancers in the county are too low to prove radiation exposure and cancer causality. Qualitatively, however, the statistics point in the right direction of causality. It should have to go without saying that the family survivors of the people in Douglas county who died of thyroid and bone cancers would define their own losses as "significant," regardless of anyone else's opinion.

Because of one man's decision, along with the concurrance of his peers at the highest operational levels of the AEC field offices, a tragedy has been allowed.

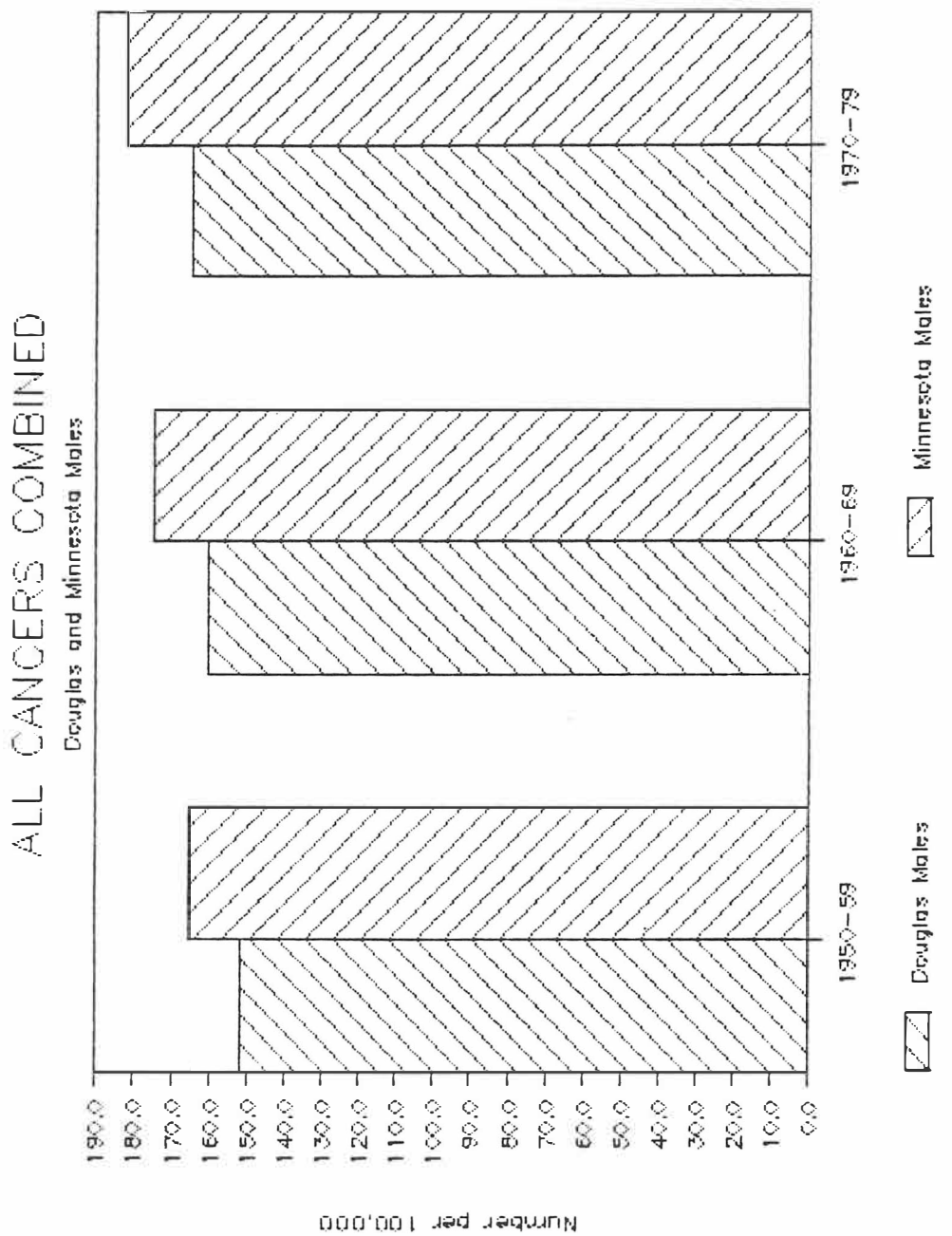

Figure 3. All Cancers Combined Graph

Figure 4. Thyroid Cancer Graph

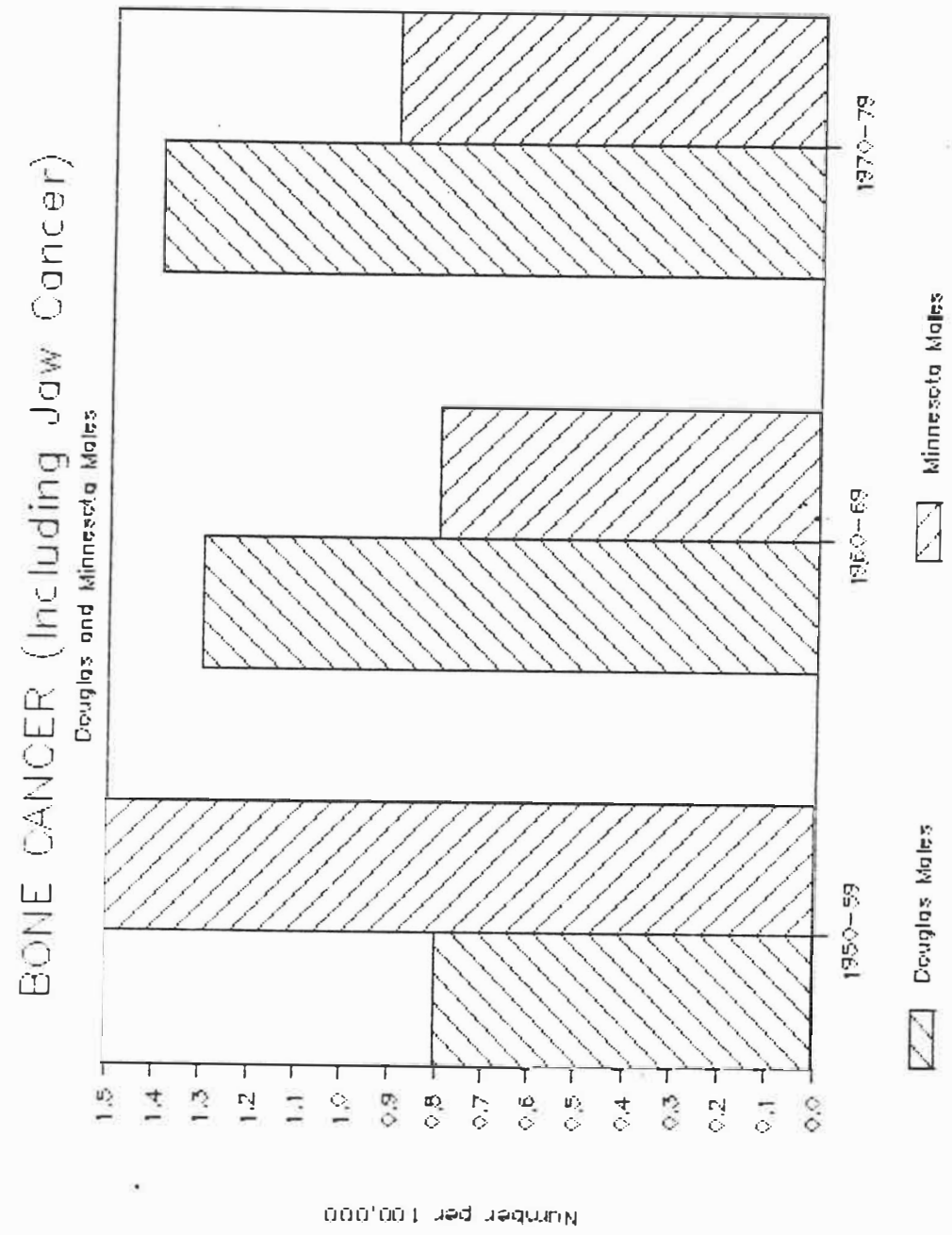

Figure 5. Bone Cancer Graph

Why? Why did he do what he did, when he knew what he knew?

Dunning's own statements, as cited in Ball (1986), provide the probable reason. Note that Dunning is referring to the sanitized verson of the levels of fallout reported by the government Ball prefaces the Dunning quotation:

> AEC medical advisors testified at congressional hearings in 1957 and 1959, and at the AEC commissioner's meetings, that accepting the more conservative safety figures 'would make it impossible to conduct operations at the test site without major changes in procedures'. Dr. Gordon M. Dunning, Division of Biology and Medicine, in 1957 testimony before the Joint Committee, stated that the AEC scientists and technicians, `with moderate effort', could reduce even further the release of radioactive materials into the atmosphere. However, if we continue to reduce the fraction we are willing to release, we eventually reach a cost of control which makes the operation prohibitive. The dilemma is that we must weigh the degree of undesirability of radioactive fallout against the advantages which may be anticipated from activities which are inevitably accomplished by fallout (cited in Ball, 1986: 41).

Put in simpler terms, to significantly reduce the level of fallout would cost so much, that it would be impossible to continue nuclear weapons testing. To gain knowledge, the "advantages" of nuclear weapons testing (superiority over the Russians) Americans must accept some degree of radioactive fallout.

Not to mention disinformation fallout. It is reasonable to presume that Dunning knew exactly what he was doing. He knew that if the Sauter case came to light and established solid evidence for livestock injury due to

fallout that was further from the test site than any other recorded in history, then the costs for insuring that it could never happen again might bring the nuclear weapons testing program to a grinding halt. Imagine that. A billion dollar weapons testing program. A multi-billion dollar arms race. A poor, self-educated farmer in Farwell with dead sheep on his hands and no place to turn.

Neal Shover defines organizational crime as

> ...criminal acts committed by individuals or groups of individuals, thus including conspiracies, during the normal course of their work as employees of organizations, which they intend to contribute to the achievement of goals or other objectives thought to be important for the organization as a whole, some subunit within the organization, or their own particular job duties. Individuals may be well aware while committing such an act or series of acts that their personal fortunes and organizational career(s) will be thereby enhanced or jeopardized. Still, so long as, in their motivation, their acts contain even a modicum of intent to benefit the organization, they fall within the ambit of this definition (Shover, cited in Ermann and Lundman,1978: 39).

From the data presented in previous chapters, it is clear that Dunning committed governmental crime. With forethought and premeditation he broke specific laws of the United States Criminal Codes in the performance of his duties as the head of the Effects of Nuclear Weapons Testing Branch of the Division of Biology and Medicine for the Atomic Energy Commission. Keeping information secret had powerful effects on two different levels.

Six years after the fallout killed Joe Sauter's sheep, five years after Dunning's decision to lie and coverup in

the Sauter case, the above ground nuclear weapons test ban treaty was signed. His job done, Dunning then moved up the AEC ladder to head the Division of Occupational Safety in the AEC.

Meanwhile, Sauter's neighbors thought he was crazier than ever.

Dunning reached retirement age in 1975. After his retirement, he settled in an upper middle class retirement community in Arizona.

Four years before, 1971, Joe Sauter finally succumbed to the cancer that began in his bladder was found inoperable and slowly twisted the life out of his body. He was found in his one-room smoke-filled cabin by the county maintenance snow-remover crew. He was barely able to move, but they got him to the hospital.

Ironically, radiation therapy was used, but to no avail, the cancer took his life. Now, the head of Radiology for Boston University Medical hospital believes that radiation may have caused his cancer.

Secrets: Their Impact on An Open Society

Although the files that comprised the Sauter case did not have any classification markings restricting them from public access, they were effectively kept from public view for thirty years. Several of the other cases that I discovered were classified, from the lowest non-security

classification, "For Officials Use Only," to the highest classification "Top Secret."

What such classification means is that release of the information could be injurious to the defense and national security of America. Though there is nothing in the consitution about the right of the government to withhold information in the national interest, the practice has been with us since the days of our first President and commander in Chief, Mr. George Washington (see Barker and Fox, 1972). The executive priviledge of classifying information was minimal and flexible until the time of the first and second world wars. The rapid escalation of secrecy in government coincided with technological development in warfare equipment.

Security classifications were in three grades, top secret, secret, and restricted data. Barker and Fox give the definition of the three levels of classification

> The most stringent label was "Top Secret." It was to be applied only to that information or material the defense aspect of which is paramount and the unauthorized disclosure of which could result in exceptionally grave damage to the nation such as leading to a definite break in diplomatic relations affecting the defense of the United States, an armed attack against the United States or its allies, a war, or the compromise of military or defense plans, or intelligence operations, or scientific, or technological developments vital to the National defense.
>
> The 'Secret' label was to be applied to a document when disclosure could result in serious damage to the nation, such as by jeopardizing the international relations of the United States, endangering the effectiveness of a program or policy of vital

> importance to the national defense, or compromising important military or defense plans, scientific or technological developments important to national defense, or information revealing important intelligence operations (Barker and Fox, 1972: 13-14).

It's understandable in a time of war that we would want to keep our technological advances in the art of warfare from our enemies. We certainly would not want them to know the weaknesses in our planes, ships, submarines, tanks, radars. To have such information leak out would indeed result in visible damages to the defense of our country. It is understandable that the penalty for disclosing such information could lead to life in prison if convicted (or death, as in the case of the Rosenbergs).

With the AEC, the license to classify information was freely given. Where other agencies in government, such as the State Department must automatically declassify their documents after 30 years, once an AEC official classified a document, it, by law, could stay classified forever.

During the course of my Congressional investigation, I came across a set of files that listed about 80 cases of individuals that, similar to Joe Sauter, had claimed injury by radiation exposure, either at a nuclear weapons test, in AEC-contracted nuclear facilities, or from fallout, as in Sauter's case. Half of the files were classified; from "official use only" to "secret." To our amazement, when we requested a file that reported on the levels of strontium 90

in the soil of the Rongelap atoll following the detonation of the 15 megaton shot "Bravo" on March 1, 1954, in direct response to our request for the files, the Department of Energy upgraded the national security classification of the 30 year old file from "Secret" to "Top Secret."

I remember asking my supervisor who was Q-cleared to review classified files for the reasoning behind upgrading a 30 year old report on radioactive dirt on a small pacific atoll 5000 miles from the US top secret? How would release of information on some hot dirt on a humid tropical island that is smaller than Knox County lead to

> exceptionally grave damage to the nation such as leading to a definite break in diplomatic relations affecting the defense of the United States, an armed attack against the United States or its allies, a war, or the compromise of military or defense plans, or intelligence operations, or scientific, or technological developments vital to the National defense (cited earlier in Barker and Fox)?

My supervisor just shrugged and said that they had the Department of Energy power to do that, and besides, even if she knew what was in the report, she couldn't tell me, it was a secret.

Atomic Power and Social Power

This case study of AEC cover-ups is a study of the use of social power to promote atomic power. But what exactly is to be meant by the term "social power?" Debates over its meaning have been voluminous and contentious (Martin, 1977;

Wrong, 1979; Miller, 1983). suffice to say that its atomic structure has been delved. Still, one of the most enlightening discussion os the concept is that of Steven Lukes (1975). Lukes provides a complex, three-dimensional view of power, which is useful for deepening our understanding of the material at hand.

The first dimension of power is the most easily grasped of the three. In Dahl's (1957:201) explication: "A has power over B to the extent that he can get B to do something that B would not do otherwise." The emphasis here is on observable behaviour, decision-making, key issues, overt conflict, and observable expression of interests (Lukes, 1975: 25).

The federal agency, the AEC (here "A") conducted atmospheric tests of nuclear weapons that created potentially harmful fallout to the American public, the citizens of Minnesota, and Joe Sauter (all "B"s). The AEC was successful in getting all of these (and their more knowledgeable political representatives) to accept this potential harm even though it was contrary to their interests. That is, it is unlikely that any of these parties would have volunteered to be subjected to radiation.

The first dimension of power, as its name indicates, tends to be one-dimensional, suface level, superficial. It is a report of what actions were taken by whome and it may include a report of how decisions were made. The one-

dimensional view of power has a built-in analytic bias in its focus on only those issues which are defined as such by the decision-makers themselves. There is an unstated conservative assumption that even though decisions sometimes may be inequitable, the array of issues in the political arena do, indeed, represent the various interests of the citizenry. Although the legitimacy of the decision-making process may be questioned from time to time, the legitimacy of the agenda-setting process is not.

The second dimension of power focuses on non-decisions, non-issues, expressed grievances, and covert conflict (Bachrach and Baratz, 1962, 1963; Lukes, 1975). The central point of this dimension is most elegantly expressed by Schattschneider (1960: 71):

> All forms of political organization have a bias in favour of the exploitation of some kinds of conflict and the suppression of others, because organization is the mobilization of bias. Some issues are organized into politics while others are organized out.

Examples of second-dimensional power are pervasive throughout the body of this case study. At every step of the way the AEC mobilized its resources (bias) to deny not only Sauter's claim but also the concerns of the state of Minnesota, the press, and Sen. Humphrey's and Sen. Anderson's committees. Issues became non-issues and decisions became non-decisions.

The state of Minnesota requested from the AEC all their data on hotspots in the state. The state had a grievance.

Its scientists had collected river water samples that exceeded the maximum permissible level for human consumption of gross beta radiation products. It wanted data to substantiate the need for extra precautions and it wanted independent state-controlled laboratories to test radioactive fallout. Similarly, Joe Sauter had a grievance. He filed a claim requesting compensation for radiation injury in the death of 92 of his sheep. Sauter wanted a confirmation that vegetation from its farm was radioactive. The AEC made autonomous decisions to report to both Minnesota's Governor's Scientific Advisory Committee on Atomic Energy Development Problems and to Joe Sauter that there was not enough radiation falling out over Minnesota to warrant an independent monitoring and analysis laboratory nor to warrant compensation for the dead sheep.

Requests for information by the state of Minnesota, by Sen. Humphrey, by the chairman of the Joint Committee on Atomic Energy, and by Sauter went through normal bureaucratic channels. These were channels through which nothing flowed out. By withholding information the AEC prevented the mobilization of power resources by the aggrieved parties. The issue was removed from the political agenda.

The mobilization of bias was stretched to absurd lengths in the Sauter case. On a claim against the AEC for only $1556.40, the AEC actively involved or informed a dozen

of their top officials for over a year. The clearest example was the employment on the claim of Dr. Donald Chadwick, head of Special Radiological Services for the Department of Health. Dr. Chadwick was also a member of the Federal Radiation Council, a committee that directly advised President Eisenhower (Metzger, 1972). Of the radiation injury claim against the government, only 0.1% was for personal injury ($15). Yet the AEC had one of its top consultants investigate that portion of the claim. Why? It gave the AEC the appearance of expertise, even though the evidence was not carefully considered.

Walking through the Sauter case, one perceives a clear and pervasive mobilization of bias to insure that nothing happened. The case was not decided openly, equitably, or scientifically. From May, 1958, when the head official of Albuquerque Operations first wrote Sauter denying that fallout from any Nevada Test Operations could possibly have harmed his sheep, to the April, 1959 from the same official, denying his claim for lack of any evidence, the AEC was oriented toward damage prevention to the organization rather than protecting the health and safety of the claimant and the public at large.

Luke ascribes to second-dimensional power a "reformist" value assumption. This dimension gets at what goes on behind closed doors. It implies a call for openness, for due process, for constitutional rights. But the

second-dimensional approach only deepens the description of the problem. It does not address the question of why people do not openly rebel against such abuse.

It is at this point that third-dimensional power comes into play. The third dimension of power refers to the control of information and knowledge as a form of power that structures the process of issue formation. For power is expressed not only when something happens (an issue is resolved), and not only when action is taken to make nothing happen (an issue becomes a non-issue), but also when nobody does anything at all (objective interests remain non-issues). The third dimension of power allows for the analysis of unexpressed interests and latent conflicts in society. As Lukes states, it is difficult, but not impossible to study potential issues that do not become visible as a result of the control of information. John Gaventa's Power and Powerlessness (1980) is an empirical case study of why people, in the face of glaring inequities do not rebel.

Gramsci's (1971) "cultural hegemony" concept is relevant at this point. Social values taught at an early age and continual normative pressure shape people's preconception of what is a real issue, who has a right to determine such issues, and how issues are to be constructed.

Faith in government, accepting the official stand, is for many people an even more powerful influence than the

media. For example, some of Joe's neighbors condemn Joe because he openly criticized the AEC officials for their "willful and premeditated deceit." One neighbor said, "You just don't talk like that about the government." Her tone was not that of fear (as perhaps a Russian might say, "you just don't criticize the Party like that") but more of some one speaking of something distasteful.

Even on an institutional level often there are not sufficient resources to reconstruct an issue once it has been neutralized by second dimensional power. Third-dimensional value consensus limits such attempts. In a sense, what could the Governor Advisory Science Committee do when the AEC officials said, "We have given you all the data, and as you can see, there is no danger from fallout, now or in the future." The scientific advisory committee was compelled to accept the decision because of the cultural hegemony of law and government. The 1954 Atomic Energy Act mandated the AEC, first and foremost, to protect the health and safety of American citizens from any dangers or harm that might arise from nuclear weapons testing operations. Who could doubt that the AEC should abide by the law? Moreover, the AEC was the only agency with the range of expertise to adequately assess the problems involved. The AEC owned the experts and the cultural hegemony of "expertise" ensured its powers. Governor Orville Freeman's Scientific Advisory Committee, Sen. Humphrey's Senate

Committee on Disarmament, Sen. Clinton Anderson's Joint Committee on Atomic Energy, all deferred.

When the Atomic Energy Commission was charged with promoting nuclear weapons development, and protecting the health of the people from the deleterious effects of nuclear weapons testing, the agency was put into a position of irreconcilable conflict. When forced to choose which was most important, the continuation of weapons testing came as a higher priority in the minds of the leading AEC officials charged with protecting the health and safety of the American people. Their rationale: a few must suffer for the good of the many. That simple. The mechanism by which they carried out their duties in perpetuating the nuclear testing program: control of the production and flow of information.

John Gaventa, in "The Powerful, the Powerlessness and the Experts: Struggles in an Information Age" (1985) notes that our society has changed from an industrial society to a post-industrial society based on information. Where, in an industrial society, power was based in the hands of those who owned, as Marx coined it, "the means of production," power in the post-industrial society is based in the hands

of the people who control the flow, production and dissemination of "official" knowledge.[1]

Gaventa rightly points out that the primary mechanism of the power of knowledge is the ability and practice of withholding information from those who want it by those who have it.

> Withholding of knowledge by those who control it may take blatant forms--secrecy, lying, evasion. But there are more subtle forms of knowledge control. Professionalizing knowledge, making it available only in obscure journals, or portrayed in obscure language--all serve the same purpose of keeping it from those those interests may be affected by it. In a system already affected by inequalities in the communication and production of knowledge, the knowledge elite are the gatekeepers, further controlling the dissemination of information, and thus the emergence of certain issues and conflicts altogether (Gaventa, 1985: page 18).

When only experts have the knowledge necessary to decide the critical aspects of a particular public program (such as the nuclear question) in a controversial situation, it simply reduces down to which experts one wishes to believe, the established or the opposing experts. The

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[1]Gaventa's research makes a sharp break with the vast majority of scholarly research in both the fields sociology and political science. Gaventa points out that research by experts is generally a one-way street where knowledge of and about the powerless is conferred to the powerful. He is openly critical of the present state of sociology: "Sociology has worked to create and increase the unequal distribution of knowledge. It has worked to make the power structure relatively more powerful and knowledgeable, and thereby to make the subject population more impotent and ignorant." (Gaventa, 1985: pp. 14-15.)

Atomic Energy Commission used all the tactics mentioned above to keep an iron grip on controlling public opinion on the issue of nuclear testing in the 1950's. Virtually all of the funding for radiobiological research passed through the AEC. As Dr. Caster's and many other's experiences demonstrated, when research findings proved contrary to the AEC doctrines, one could expect his research grants to be abruptly cancelled. In the small professional circles of radiobiology, epidemiology and other radiation related areas, word quickly spread of the experiences of Caster, Knapp, Gofman, Tamplin, Morgan, Mancusso and others. Those without a firmly grounded set of ethical principles, who were wedded to the idea of financial security, thought twice or even three times before publishing material that would meet the disapproval of the Atomic Energy Commission.

Continuing on the control of information, as Gaventa rightly notes, control of an issue is maintained when the language is deliberately kept obscured, or printed in obscure professional journals. For an example of this, one need only go to the 4,000 pages of testimony and articles submitted by the Atomic Energy Commission to the Joint Committee on Atomic Energy. Much of the material is so recondite as to be nearly unintelligible, certainly not written for consumption by the legislators or the general public. Rather, it was written to give an air of expertise. The general attitude displayed in the testimony: "The

issues are very complex, but reasonable policy can be established on scientific grounds; if you can follow our technical analysis, you will agree that our conclusions are reasonable." Many of the question/answer sessions in the testimony bring out the evasiveness and heightened abilities of the AEC scientists to obsfucate an issue when asked a direct question. Often the answers would become so circuitous as to be meaningless. But, given the loquacity of the scientists, and the sheer volume of material presented to Congress, the legislators were forced to the conclusion that the AEC had provided them with the "truth," despite the uneasy feeling of some that they were not being dealt with squarely, as the exchanges between the AEC and Senator Clinton Anderson demonstrate.

Only through the near absolute control of the interpretation of knowledge did the AEC have the ability to influence public opinion so radically on the issue of fallout in the 1950's. Uranium prospectors' geiger counters in Nevada would go off scale as fallout clouds passed over head. The AEC said "no problem." Thousands of sheep were killed in Utah following the shots passing over in 1953 that were called "Nancy" and "Dirty Harry."[2] Despite one AEC

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[2]See Fuller (1985) for an action-packed journalistic account of the trials and tribulations of the Utah sheep
(Footnote Continued)

livestock inspector's conclusion that the sheep were "hotter than a two dollar pistol" after passing his geiger counter over their wool, the AEC was effectively able to divert the cause of death to "range mismanagement" and "malnutrition." Five years later, the same AEC officials involved in the Utah case, Allaire and Dunning, would suggest the same reason for Sauter's dead sheep.

By having a monopoly on the control of interpretation, then, in the face of overwhelming evidence to the contrary, the AEC could effectively lie when all other tactics failed. They could get away with it for a number of reasons. First, there was no outside agency monitoring the actions of the AEC (except for the JCAE, which was impotent in their duty as watchdog). Sauter might have been able to find an "expert" to further his cause. Being a rural uneducated farmer in the backwoods of western Minnesota it is not surprising that he found none. But for every expert he might find that would publically support his contention of radiation injury, the AEC could muster 20-30 experts to not only refute the lone expert's position, but to publically ridicule him as well. Gaventa aptly notes that in a society where people don't question the expert, "the greatest power

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(Footnote Continued)
farmers. The book so disturbed Dr. Dunning that he wrote a 35-page rebuttal to the book that was circulated within the American Health Physics Society.

of the monopoly of knowledge is the power to engineer its own consent" (Gaventa, 1985: 24).

Tom Cochran accurately summed up the problem in his ariticle "Secrecy and Nuclear Power,"

> The federal government has repeatedly abused its classification authority to deflect public concern, minimize nuclear fears and avoid embarrassments and debate. To my knowledge, no public official has ever been punished for these abuses. Instead, some of those most responsible receive commendations and promotions for their valuable public service. And those who have sounded the alarm-- the whistle blowers--where their identity is known, have been rewarded with poor performance evaluations and removed from their jobs (Cochran, 1981: 37).

Problems/Solutions

Given that I have spent over 150 pages pointing out a serious problem in the byproducts of the creation of the nuclear age, I would be remiss in not pointing out a few solutions to the problem. Mortin Halperin, former assistant secretary of defense, and a key figure in the Pentagon Papers controversy states quite clearly the first change that must take place before any hope of rectifying the problem is possible:

> If we are to have less secrecy we need to change the rules of the game, to take away from Presidents and bureaucrats the unfettered authority that they now have to determine what should be kept secret in the interests of national security. We need in short, laws that will require more disclosure and greater respect for First Amendment values (Halperin and Hoffman, 1977: 4).

How does one change the law, especially on an issue that calls for a radical curtailment of power in the hands

of officials long used to such power. Certainly, they will not relinquish it readily. Wilson and Rachal note:

> A government agency operates in a milieu of politically supervised autonomy. All organizations value autonomy and strive to reduce threats to it. There is no businessman who would not prefer less competition to more, certain markets to uncertains ones,and guaranteed revenues to contingent ones. Given half a chance, a firm will try to acquire as much of a monopoly position as it can. But government agencies share in the authoritative power of the state, which preempts all rivals and establishes a monopoly position itself (cited in Ermann and Lundman, 1978: 316-317).

The AEC was firmly in control of this issue when the reins of power passed to the ERDA in 1973 (which was later abolished. In the separation of powers, the Department of Energy was charged with the production and testing of nuclear weapons components, the Nuclear Regulatory Commission was charged with the regulation of the nuclear power industry in America). Efforts to bring outside intervention into the processes of decisionmaking concerning health and safety issues, recognition or compensation for radiation injuries related to AEC/DOE Activities have failed miserably (e.g., the Glenn/Wirth Radiation Reorganization Act failed even to come to the floor for a vote).

Howard Ball, (1986: 201-02) sees the only solution as court action.

> The picture is a bleak one when one reviews recent compensatory legislation for the downwinders. Since 1979, it has languished in the legislature, unsupported by legislators and roundly attacked by White House bureaucrats who have periodically visited the Capital to lobby against the Kennedy and Hatch

> proposals. While there was a slight chance of adding an amendment to the Marshall Islands Compact of 1984 to create a trust fund for the American downwinders, the legislative picture is generally discouraging for the survivors. It is especially poignant that a national dilemma has been turned into a local one, perceived by legislators as Hatch's 'pork-barrel' bill for a few Mormons who live in southern Utah.
>
> The Reagan White House, committed to reducing nonessential, government financial support in the domestic arena, has completely opposed any kind of legislation that would provide taxpayer funds for persons injured by negligent governmental activities in the past. Reaganomics is based on reducing entitlement programs, and the Reagan personnel see a compensation bill as a type of entitlement that would commit the federal government to an expenditure of untold billions of dollars to these and other victims of the government's lack of due care. Consequently, it has made every effort to kill the legislative effort and has been unwilling to discuss a settlement with the plaintiffs' attorneys in the Allen litigation.
>
> The downwinders' best and probably only hope for the foreseeable future, therefore, is the judicial remedy. Despite the very nature of the federal judicial system, with its lengthy time delays and prohibitive costs, the plaintiffs have the ability, at least in federal court, to mount a substantive challenge to governmental negligence--within the limits of the existing law. Until the political branches reevaluate the complexities of the downwinders' problem and develop a public policy that addresses society's responsibility to react to governmental wrongs committed against its citizens, the only remedy is the one found in the federal district courts (Ball, 1986: 202).

Although the book is less than a year old, Ball's solution is already sadly outdated. The judicial remedy that Ball counted so heavily was the class action suit of Allen, et al. Vs USA. Judge Bruce Jenkins heard before his court a handful of the plaintiff's cases from the more than 1100 downwinders represented by Stewart Udall. After hearing months of testimony from both sides, reviewing over

7,000 pages of documentation, Judge Jenkins recessed. He then spent over 14 months in preparing his memorandum opinion. His was a landmark decision. He broke with past judicial rulings and found that the government had been negligent in its duty to warn and adequately protect the lives of the people downwind from the nuclear tests. He found exception to the discretionary clause of the federal torts claims act that holds the government immune from prosecution. His logic was that the stated policy of the government at the time was to protect the health and safety of the American public from deleterious effects of weapons testing. Jenkins noted there was a breakdown at the operational level, specifically the field managers failed to provide the protection and adequate warnings needed to protect the public. He awarded the plaintiffs $2.3 million, opening the way for the other 1000+ cases to be heard. The case was settled in 1984. As a ruling of the court, it provides not only some of the most elegant demonstrations of the use of logic, but it is also one of the most comprehensive and thoroughly well written treatises on the weapons testing/radiation exposure issue.[3]

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[3]The document most frequently cited in the ruling (over 35 times by my count) is Dr. John Gofman's Radiation and Human Health. Dr. Gofman is probably the most well-known critic of America's nuclear power program. A former

(Footnote Continued)

The Allen decision was appealed by the government attorneys from the Justice Department and the Department of Energy's General Counsel's Civil Litigation Branch. The hope that Ball and so many other attached to the Allen decision were dashed to the rocks in April, 1987 ago when the Federal District Court overturned Jenkins decision finding that the government had sovereign immunity in such cases.

The decision will be appealed to the Supreme Court, but it is unlikely that the appeals court decision will be overturned. In this, as in many other radiation injury cases, the government has spent several fold over what it would cost to settle so as to avoid setting a "bad" precedent.

My reading of Gaventa (1985) would suggest another solution the problem. The legislative or the judicial strategies, in which experts are pitted against other experts, duking it out on behalf of their constituencies is simply a perpetuation of the existing problem, the problem of the control of knowledge being in the hands of the few, rather in the minds of the many. Gaventa would advocate a shift in that control of knowledge to the powerless. He

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(Footnote Continued)
assistant director of Lawrence Livermore Labs, his funding was abruptly cancelled after a critical report from him and his colleagues showed expected increases in cancer from normal routine releases of radiation from nuclear power plants. (See Gofman and Tamplin, Poisoned Power.)

points out the many problems attendant to the shifting of the power of control and production of knowledge to the powerlessness. In a majority of instances where outside researchers come in and work with disenfranchised groups, the skills, knowledge, and resources that the researcher brought with him, often leave when the researcher decides to move on to greener pastures. Gaventa (1985: 33) stresses that the loop of dominance/subordination between the researcher and the powerless group must be broken.

> Ideally there is some accountability between researcher and researched: the researcher begins with questions that the powerless group has posed, the information is provided back to them in a usable and understandable form.

He goes on say that the real power of a researcher is not so much to provide the group with information so much as it is to provide the powerless with the skills to produce their own information, thus making the researcher's presence no longer necessary. Gaventa cites Oleiveras on the problem:

> The group must gain control of the research process, meaning that they have succeeded in appropriating to themselves the knowledge and science which the researcher brought. Acquisition by the group of methodological tools which were once the monopoly of the researcher, prevent the repetition of the dependence relationship'... (Oleivera cited in Gaventa, 1985: 34).

The difficulty with Gaventa's solution to the problems outlined in this thesis is that, in Minnesota at least, there is no clearly definable group which might go through the empowerment process that Gaventa advocates. Gaventa's

approach of empowerment using participatory research works best when there are specific groups of people (such as families adjacent to strip mines, or workers in an unhealthy workplace, etc) with a common and somewhat easily defined common problem.

With fallout from radiation, even if the person received a dose well exceeding maximum permissible standards and died within a few years of known radiation related disease or syndrome, proving causality is next to impossible. To further compound the problem, in fallout cases over great distances, the number of people affected might be only 1 in a thousand, ten thousand or a hundred thousand. There may be only a few here, and a few there. Yet, the damage may be quite severe when the number of people, over the years, and across the country are all added together. Gilbert Geis (cited in Ermann and Lundman, 1978: 285) wrote on this very problem. Geis credits C. Wright Mills for posing a most eloquent statement of the problem.

> The first prerequisite for imposing heavier sanctions on corporate criminals involves the development of a deepening sense of moral outrage on the part of the public. A number of factors have restricted public awareness of the depth and cost of white collar crime. That the injuries caused by most corporate violations are highly diffused, falling almost imperceptibly upon each of a great number of widely scattered victims is undoubtedly the greatest barrier to arousing public concern over white-collar crime. 'It is better, so the image runs' C. Wright Mills once wrote, 'to take one dime from each of ten million people at the point of a corporation than

> $100,000 from each of ten banks at the point of a gun.' Then Mills added with wisdom: 'It is also safer'(Mills, 1956: 95).

Analogously, public outrage is diffused, sanctions are limited, and government crime is safe when victims are scattered.

Postscript

When I began this work, I was convinced that the only way to seek a solution to the problem was through Congress. An individual or group would be stymied in any attempts to gain access to the needed information on other cases, because of the privacy act and the national security restrictions. A congressional oversight committee has the power to override both. My solution, turning to a Congressional subcommittee turned out to be a mistake.

After this thesis is "put to bed," the work on the Minnesota case will continue. Rather than seeking an experts solution to the problem, however, a few things will be turned upside down. After a March, 1987 trip to Minnesota, a number of radio, newspapers and at least one TV station reported on my findings. I had asked that people ask their representative Gerry Sikorski (D-MN) to meet with me on the issue. He has invited me to DC, where to inform him of my research. Given that Congress has failed to effectively regulate the actions of the agency and its

predessors for the past years, it is more likely they will continue to be part of the problem rather than part of the solution.

After that trip, I will be going back up to Minnesota to work with the Minnesota Public Interest Research Group on the issue. Several people have called in to the radio stations, newspapers, and MPIRG with their own stories of strange happenings that coincided with the nuclear weapons tests. Some people in the far western part of the state want to know if the unexplained clusters of rare cancers in their areas might be connected to radiation. I will be going back up to Minnesota to help set up participatory research groups, and begin the process shifting knowledge from the experts to the people in rural western Minnesota.

Because of the magnitude of the problem posed by radioactive fallout and the concomitant suppression of information spanning over 30 years, any "solution" such as just compensation for the victims, will come neither easily nor quickly. The solution will certainly be of no use to those who have already died from fallout's ill effects. The solution may not even come in time for the immediate survivors to reap from its benefits. But if people learn the truth, and learn the truth in such a way that their own lives are enriched and empowered by the participatory research methods outlined in Gaventa's "Knowledge Struggles

in an Information Age," then something will have been gained from all this. If, out of this tragedy, some people at least recognize it for what it is, a case of governmental homicide in the name of national security and a case of criminal bureaucratic cover-up in the name of scientific expertise, perhaps such abuses will be limited in the future.

Governmental homicide is an extreme example of raw, first dimensional power. It is mystified by the exercise of second dimensional power, the ability of government to stifle protest by keeping grievances off the agenda. Classification of information, the doctrine of sovereign immunity, and criminal withholding of information are examples of such power. If power is to be gained by common citizens, they must gain the power to set agendas. But such power is mystified further yet by a third dimension of power, deference to legitimate authority and expertise. Only when common citizens learn to break omniscient deference to experts will they begin to increase their ability to create public issues and thereby mobilize publics to action. If the hegemony of expertise is to be broken, common people must come to recognize the legitimacy of their own "local" knowledge. The raising of such consciousness is a long road to travel. My desire is that this research will draw people in Minnesota and elsewhere across the country a few faltering steps along that path.

BIBLIOGRAPHY

BIBLIOGRAPHY

Allen, Irene et al., vs USA Memorandum Opinion, US District Court of Utah: Central Division. Judge Bruce Jenkins, presiding, 1984.

Atomic Energy Act of 1954. Washington, DC: Government Printing Office, 1966.

Bachrach, Peter and Morton S. Baratz. "The Two Faces of Power," in American Political Science Review 56 (1962): 947-52.

Bachrach, Peter and Morton S. Baratz. "Decisions and Nondecisions: An Analytical Framework." American Political Science Review 57 (1963): 641-51.

Ball, Howard. Justice Downwind: America's Atomic Testing Program in the 1950's. New York: Oxford University Press, 1986.

Barker, Carol M. and Matthew H. Fox. Classified Files: The Yellowing Pages. New York: The Twentieth Century Fund, 1972.

Bell, M.C., et al. "Effects of Feeding 90Y-Labeled Fallout Simulant to Sheep." Radiation Research 43 (1970): 71-82.

Bradley, David. No Place to Hide. Boston: Little Brown, 1948.

Cochran, Thomas. "Secrecy and Nuclear Power." Bulletin of the Atomic Scientists 37 (1981): 37.

Dahl, Robert A. "The Concept of Power." Behavioral Science 2 (1957): 201-05.

Edelman, Jacob Murray. The Symbolic Uses of Politics. Urbana: University of Illinois Press, 1964.

Ermann, M. David and Richard J. Lundman, eds. Corporate and Governmental Deviance: Problems of Organizational Behavior in Contemporary Society. New York: Oxford University Press, 1978.

"Fallout From Nuclear Weapons Tests." Hearings before the Joint Committee on Atomic Energy's Special Subcommittee on Radiation, May 5,6,7 and 8, 1959. Washington, DC: U.S. Government Printing Office, 1960.

Fry, Shirley A. and Karl Hubner, editors. The Medical Basis for Radiation Accident Preparedness. New York: Elsevier, 1980.

Fuller, John. The Day We Bombed Utah: America's Most Lethal Secret. New York: New American Library, 1984.

Gaventa, John. Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley. Chicago: University of Illinois Press, 1980.

Gaventa, John. "The Powerful, The Powerless and the Experts: Knowledge Struggles in an Information Age." Draft of article for forthcoming book by Peter Park, et al., eds., Participatory Research in America. Draft dated February, 1985.

Geis, Gilbert. "White Collar Crime: The Heavy Electrical Equipment Antitrust Cases of 1961." Corporate and Governmental Deviance: Problems of Organizational Behavior in Contemporary Society. Ed. M. David Ermann and Richard J. Lundman. New York: Oxford University Press, 1978. 59-79.

Glasstone, Samuel and Philip Dolan. The Effects of Nuclear Weapons. 3rd ed. Washington, DC: U.S. Government Printing Office, 1957.

Gofman, John W. and Arthur R. Tamplin. Poisoned Power: The Case Against Nuclear Power Plants. Emmaus, PA: Rodale Press, 1971.

Gofman, John W. Radiation and Human Health. San Francisco: Sierra Club Books, 1981.

Gramsci, Antonio. Selections from the Prison Notebooks of Antonio Gramsci. Ed. and trans. Quintin Hoare and G. Nowell-Smith. London: Lawrence and Wishart, 1971.

Halperin, Morton H. and Daniel Hoffman. Top Secret: National Security and the Right to Know. Washington, DC: New Republic Books, 1977.

Hersey, John. Hiroshima. New York: A. A. Knopf, 1946.

Hewlett, Richard G. and Oscar E. Anderson, Jr. The New World. Washington, DC: U.S. Atomic Energy Commission, 1962.

Lukes, Steven. Power: A Radical View. London: MacMillan Press, 1974.

Martin, Roderick. The Sociology of Power. Boston: Routledge and Kegan Paul, 1977.

Metzger, H. Peter. The Atomic Establishment. New York: Simon and Schuster, 1972.

Miller, Richard L. Under the Cloud: The Decades of Nuclear Testing. New York: Free Press, 1986.

Miller, Richard W. "Questions of Power in Political Theory." What Should Political Theory Be Now? Ed. John S. Nelson. Albany: Southern University of New York Press, 1983.

Mills, C. Wright. The Power Elite. New York: Oxford University Press, 1956.

Muller, Claus. Politics of Communication: A Study in the Political Sociology of Language. New York: Oxford University Press, 1973.

"The Nature of Radioactive Fallout and its Effects on Man." Hearings before the Joint Committee on Atomic Energy's Special Subcommittee on Radiation May 27, 28, 29 and June 3, 1957. Washington, DC: U.S. Government Printing Office., 1958.

Pilat, Oliver. The Atom Spies. New York: G. P. Putnam's Sons, 1952.

Pringle, Peter and James Spigelman. The Nuclear Barons. New York: Avon Books, 1981.

Rosenberg, Howard. Atomic Soldiers: American Victims of Nuclear Experiments. Boston: Beacon Press, 1980.

Schattschneider, E.E. The Semi-Sovereign People: A Realist's View of Democracy in America. New York: Holt, Rinehart and Winston, 1960.

Shover, Neal. "Defining Organizational Crime." Corporate and Governmental Deviance: Problems of Organizational Behavior in Contemporary Society. Ed. M. David Ermann and Richard J. Lundman. New York: Oxford University Press, 1978. 37-40.

Smith, Alice Kimball. A Peril and a Hope: The Scientists Movement in America, 1945-47. Chicago: University of Chicago Press, 1965.

Weber, Max. From Max Weber. New York: Oxford University Press, 1946.

Wilson, James Q. and Patricia Rachal. "Can the Government Regulate Itself?." Corporate and Governmental Deviance: Problems of Organizational Behavior in Contemporary Society. Ed. M. David Ermann and Richard J. Lundman. New York: Oxford University Press, 1978. 309-322.

Wrong, Dennis. Power: Its Forms, Bases, and Uses. New York: Harper and Row, 1979.

The main body of information for CHAPTER III. THE CASE OF JOE SAUTER can be found in the file of Joseph August Sauter at the Department of Energy Repository in Las Vegas, Nevada. The file is protected by the Privacy Act, and can be used only with the permission of the deceased's sole surviving relative, Mary Lou Sauter Young.

Humphrey to Strauss, 4/8/58
Sauter to AEC Chief, 4/12/58
Allaire to Driver, 5/16/58
Allaire to Sauter, 5/19/58
Bruner to Rogers, 8/14/58

Peterson to Driver, 5/28/58
Driver to Allaire, 5/29/58
Rosenberg 1980, p. 77-78
Allaire to Dunham, 6/6/58
Allaire to files, 7/15/58

Hacker, ch. 10, p. 34
Allaire to files, 7/15/58
Goeke to Allaire, 8/13/58
Bruner to Rogers, 8/14/58
Allaire to Driver, 9/5/58

Weaver to files, 4/2/59
"Summary Discussion" 1959 JCAE Hearings, May 5-8, p. 2119
Allaire to Driver, 9/5/58
Peterson, Wentworth to Driver, 9/11/58
Goeke to Terrill, 12/1/58

Sauter to Chadwick, 7/9/58
Allaire to Chadwick, 4/17/59
Allaire to Sauter, 4/1/59
Reeves to Starbird, 4/1/59

Dunham Testimony, 1959 JCAE Hearings, p. 27
Reeves to Starbird, 4/1/59
Weaver, 4/2/59

The main body of information for CHAPTER IV. AEC COVERUP: KEEPING THE STATE OF MINNESOTA UNINFORMED was gathered in the three month Congressional investigation that this researcher initiated and directed in 1984 through the Energy Conservation and Power Subcommittee of the House Energy and Commerce Committee. Request for specific documents may be made through an FOIA to the Chief Historian of the Department of Energy, Germantown, MD.

Minneapolis Tribune, 6/4/57 (Freeman)
Visscher to Dunning, 2/20/58
Dunning to files, 3/12/58
Machta to Dunning, 2/26/58
Freeman to Fields, 3/1/58

Interview with Caster, 9/23/84
Minneapolis Star, Minneapolis Daily, 3/7/58
Visscher, New York Times, 3/19/58
Salisbury to Dunham, 3/19/58
Dunning to Armstrong, 3/27/58

Caster, "The Biological Hazard of Fallout," 5/58, p. 9-10
Dunning to Caster, 4/10/58
Terrill to Dunning, 6/3/58
Allaire to files, 7/15/58
1959 JCAE Fallout Hearings, vol. 1, p. 17

Fields to Freeman, 4/11/59
Caster, "Basic Data ... in Minnesota," p. 37
Loevinger to AEC, 7/29/58
Task Group on Basic Research, 8/22/58
Lough to Dunham, 11/10/58
Allen vs. USA, Civ. #70-0515-J, p. 86
Visscher press conference, 2//6/59

Caster interview, 9/23/84
Visscher press conference, 2/6/59
Visscher to Humphrey, McCarthy, 2/9/59
Werner to Wells, 2/12/59
1959 JCAE Hearings, Appendix B, p. 2141

Associated Press, 2/24/59
Background on Sr90 in Wheat (n.d.)
Harms to Anderson, 2/23/59
Visscher to Harms, 2/20/59
Visscher to Humphrey, 2/28/59

Dunham to McCarthy, 3/20/59
Libby to Visscher,, 3/6/59
Dunham to Libby, 3/25/59
Loper to Anderson, 2/17/59
Libby to Loper, 2/27/59

Attchmt #4, JCAE rel. #211, 3/22/59
Fryklund, "Anderson Sees...", Washington Star, 3/22/59
Gamarekian, "New Fallout Data...", Washington Star, 3/23/59
Editorial, "Faster Fallout," Washington Post, 3/23/59

Sen. Anderson, Senate Record, 3/23/59, p. 4369
Sen. Humphrey, Senate Record, 3/23/59, p. 4371
McCone to JCAE, 3/24/59, pp. 2, 5
McCone to General Manager, AEC, 3/27/59

1959 JCAE Hearings, vol. 1, p. 46
Ibid., p. 27
Ibid., pp. 36-7
Ibid., Appendix B, p. 2114
Ibid., Appendix B, pp. 2115-6

Holifield to Luedecke, 6/17/59
1959 JCAE Hearings, Appendix B, p. 2117
Ibid., Appendix B, p. 2119
Ibid., Appendix B, pp. 2122-9
Luedecke to McCone, 3/29/60

APPENDIXES

APPENDIX A.

SAUTER AEC CLAIM FORM

Budget Bureau No 30-S070
Approval Expires 5-15-57

CLAIM UNDER SECTION 167, ATOMIC ENERGY ACT OF 1954 FOR BODILY INJURY, DEATH, OR DAMAGE TO OR LOSS OF PROPERTY

(Use additional sheets if necessary)

Do not write in this space. See reverse side for instructions.

1. NAME OF CLAIMANT (Last, first, and middle initial)

Fowler, Jos A.

2. ADDRESS OF CLAIMANT (Street, city, zone, State)

Route #1, Farwell, Minnesota

3. PLACE OF INJURY, DEATH, DAMAGE OR LOSS

Fowler ranch, Holmes City Twp., Douglas County, Minn.

4. DATE OF INJURY, DEATH, DAMAGE OR LOSS — TIME

June 28th, 1957 — 9:00 A.M. P.M.

5. AMOUNT OF CLAIM

BODILY INJURY $.....

DEATH $.....

PROPERTY DAMAGE $.....

PROPERTY LOSS $.....

TOTAL $.....

6. DESCRIPTION OF ACCIDENT OR INCIDENT OUT OF WHICH CLAIM ARISES

State below, in detail, all known facts concerning accident or incident which appear to may affect claim (location, place and property, including ownership, and persons, including witnesses, involved. State nature of injury, death, damage or loss.

This claim for asserted damage from fall out, noted June 28, 1957, 9:00 A.M. Coloration on clover legume and some turn-over effect on top of stem and plant. Noted trees after October, 1957, shrunken seed, leaves, etc., still clinging to trees varieties Oak, Ash, Maples and Boxelder. Noted heavy lamb loss during the shed period, Clover seed did not fill. Breeding schedule on stock sheep in 18% barren lamb loss & otherwise, 1958 lambing schedule. Paint destroyed on barn. Operator received unidentified burns of hands and eyes April 21, 1958 and timber is damaged. Schedules, enclosed and insert of I (Do Not) agree to accept said amount as final settlement of this claim. Claim placed on operational basis, amount $1,551.66, 1957 operations only. Specimens are being forwarded.

STATUS VERIFIED UNCLASSIFIED
John A. Campbell
SEP 9 1981
Date

PENALTY FOR MAKING OR PRESENTING FALSE, FICTITIOUS OR FRAUDULENT CLAIM

Fine of not more than $10,000 or imprisonment for not more than 10 years, or both (See 18 U.S.C 287)

PENALTY FOR FALSIFYING, CONCEALING, OR COVERING UP A MATERIAL FACT, OR FOR MAKING FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR REPRESENTATIONS OR FOR MAKING OR USING FALSE WRITING OR DOCUMENTS

Fine of not more than $10,000 or imprisonment for not more than 5 years, or both. (See 18 U.S.C 1001)

7. I CERTIFY THAT THE AMOUNT OF THIS CLAIM COVERS ONLY INJURIES, DEATH, DAMAGES OR LOSSES CAUSED BY ACCIDENT OR INCIDENT ABOVE DESCRIBED.

I ~~do not accept~~ SAID AMOUNT IN FULL SATISFACTION AND FINAL SETTLEMENT OF THIS CLAIM.

Jos A. Fowler

SIGNATURE OF CLAIMANT

(SIGN FIRST NAME AND INITIAL EXACTLY AS THEY APPEAR ON ITEM NO 1)

8. DATE OF CLAIM

June 12, 1958

9. IF CLAIM IS BASED ON DEATH OR, IF CLAIM IS FILED BY OTHER THAN THE PERSON INJURED OR DAMAGED, STATE RELATIONSHIP OR CAPACITY:

CLAIM

This claim for asserted damage from fall out noted on my Red Clover June 28, 1957 in form of copper red or rust coloration on top side of leaves and some of the clover tops turned over and some rusty looking holes were through the leaves. The deposit was (taken from rush coloration and turn-over effect of clover) more dense on Southerly leading slopes and also in land basin or ravine areas. The usual 1st cutting was taken off for hay about July 4th and fed on a ration basis of 4 to 6 bales per day to the stock ewes beginning about December 1, 1957, to about 60 animals. They were also receiving about 4 to 6 bales of 1st and 2nd cutting alfalfa during this time per day. Except for recurrences of heat period in some of my best animals, including 5 of the 1957 heavy weight ewe lambs and with a total of 3 prominent masters. No other ill effect was noted until after the seed crop (near barren) clover was entered into the feed ration about March 1st to 15th - 2 cases of temporary paralysis occured apparantly stiffening the forelegs (joints) entirely. One ounce of lime in 4 ounces water drench was given, the ewes survived and both birthed premature dead and near dead lambs a few days later, in one case , and about 2 weeks later in the other case. The clover feeding was discontinued at this occurance and other feed purchased.

History, ranch operational since 1951 on these lands. Lambing paralysis has not occurred. A field of the entire sugar beets, 2 acres, given over to the ewes preparatory to breeding in the fall of '57. However the tree petrification as now found greater and less, denotes the contour beet field was in the border at least of the fall-out streak or felt. The early breeding, pen bred and to select sire, was taken up during the beet foraging period, a proven high masculin sex throw master for 2 years previous, and some of the same dams delivered only normal male out of the first 14 lambs born. A total of 3 males were birthed, both other males were dumb birth and were one of twin lambs and perished in pens by the dam. These were normal breeding and not mingle or interbred . Apparantly the trend of male sex delivery improved after November 10 to November 15 breeding schedule. Nearly all single births sired before November 10th were ewe lambs and 3 sires represented in breeding reduction from twin to single lambs is severe, and in my best stock, both Hampshire and Columbian a total of 95 lambs and 80 ewe schedule as compared to 140% on this ranch previous operation or 25 lamb loss in reduction. Therefore continuance of claim in part through 1958:

(1) 1958 clover scorch noted May 28th.
(2) 1958 corn burn noted June 9th, reference local agricultural field man, Douglas Co., Mi
(3) Timber damage cannot be fully assessed at this date.
(4) Personal unidentified eyes and hands burn of April 21, 1958, handling linbage, eyes not over it.

1957 Lamb Loss Schedule

The first lamb losses occurred about Sept. 1, 1957. Two were found dead lying upright at foot of slope and under grove of oak and ash trees in Lot 5, Sec. 17 of my properties in this sector only blue grass and shedding tree leaves and petrified seed and no approach to water. They appeared to have died sleeping. This was followed about Sept. 3, 1 four year old Hampshire ewe near the same area and paralysis forelegs and shoulders noted about 5:00 P.M. and dead at 8:00 P.M.. Lamb losses increased to 6 found about Sept. 15 near watering and resting stations and again upright, muzzles resting on ground, apparantly died sleeping. A few cases were noted, sudden death following taking water at an inland watering station and this station, untreated, with liming process but petrified maple trees and oak material overhanding the drinking area. Only a few extended cases, these developed scours and shrinkage of flesh, stiff joints in most cases. Noted most, knee & hock of forelegs, also hip. A few noted slight froth from mouth before death, average life extended cases tone to three days. Only 1 case two weeks. One case survived but the entire floor section of bladder or urinals region is absent. The region is cancerous and animal shrunk from about 80 lbs to about 40 lbs at this date. It may be plated at this ranch only, provision permitted or retained evidence, operational 1958 schedule.

Sauter, Joe A.
Route #2, Parvell, Minn.

CLAIM

Purchased 118 head, average wgt. 55 lbs. Taken Sept. 1, 1957 carriage of own raised lambs, 112 average wgt. 70 lbs. Total 68 head loss (both groups). Taken 40 head own lambs loss, schedule average .22¢ per pound sales. Taken 48 head purchase lambs loss.

40 head, wgt. 70 @ .22	$616.00
48 head, wgt. 55 @ .22	$580.80

Of 8 1957 ewe lambs added to herd, 5 head barren, taken production loss schedule of 50% = 2.5 lambs average sales schedule $20.00 per head or $50.00.

Reasonable maximum death loss 8% - claim loss lambs $1101.06.
Lambs only, barren, total claim $ 50.00

Clover seed loss, 14 acres, taken minimum production 100 lbs, per acre @ .25 per pound, 80% claimed = $280.00.

Personal, unidentified burns of eyes and hands April 21, 1958.

Schedule doctors	$6.00
Medicine & glasses	$9.60

Estimate paint for barns:

5 gallons @ 7.00 per =	$35.00
Labor to apply	$70.00
Total	$105.00

Timber damage 200 more or less trunks in ash, white oak, hard maple, red oak, silver maple and boxelder cannot be assessed at this date. Personal (eyes) are not in complete recovery at this date. Operational 1958 schedule cannot be assessed at this date, therefore the insert in the government form and not to accept in final settlement of this claim.

Sauter, Joe A.
Route
Farwell, Minnesota

APPENDIX B.

DUNNING TO REEVES 10/23/58

Office Memorandum • UNITED STATES GOVERNMENT

TO : James E. Reeves, Assistant Manager for Test Operations, ALOO

DATE: October 23, 1958

FROM : Gordon M. Dunning, Chief, Radiation Effects of Weapons Branch Division of Biology and Medicine, Washington

SUBJECT: CLAIM OF JOE A. SAUTER, FARWELL, MINNESOTA

SYMBOL: BNREW:GMD

This is in reply to your memorandum of September 16, 1958 requesting our opinions on the claim of Joe A. Sauter for radiation damage from fallout.

There is nothing in our experience of radiation effects that would suggest that fallout, in the amount experienced at Farwell, Minnesota and environs, could have produced the alleged damage as described in Mr. Joe A. Sauter's claim. The external gamma radiation exposure in that area probably has been less than 100 milliroentgens which would not produce any observable effects on humans, plants, or animals. The amount of radioactive fallout material that would produce this external gamma exposure could also produce external and internal beta exposure. However, these potential beta doses do not change our overall evaluation of the damage hazard. The potential beta doses would be most pronounced in plant life and might be in the order of tens of rads to the plant tissues in the Farwell, Minnesota area. Experimental and field data collected at such placed as Brookhaven and Oak Ridge show that exceedingly higher radiation doses than these are required to produce observable effects in plants.

It is correct that there is considerable information that is not known on radiation effects, especially for low level chronic exposures. It is possible for a claimant to raise these questions as they did in the sheep trial in Utah. This aspect, I believe, can be handled by expert testimony as was done for the sheep case. However, if the Sauter claim does come to court you probably will need more monitoring data than now exists, especially in light of the radiochemical analyses made by HASL on selected samples from the Farwell, Minnesota area.

cc: Dr. Dunham
Dr. Shilling
Dr. Western

APPENDIX C.

CANCER RATES

CANCER IN DOUGLAS COUNTY AND STATE OF MINNESOTA (PER 100,000)

	1950-59	1960-69	1970-79
THYROID CANCER			
Douglas Male	0.0	0.6	1.1 (high)
Minn. Male	0.4	0.5	0.3
MALIGNANT MELANOMA			
Douglas Male	2.4	1.4	3.3
Minn. Male	1.0	1.3	1.9
Douglas Female	1.8	3.0	1.4
Minn. Female	0.9	1.1	1.2
EYE CANCER (no known cause)			
Douglas Male	0.8	1.4	0.0
Minn. Male	0.3	0.3	0.3
Douglas Female	3.1	0.0	0.0
Minn. Female	0.3	0.2	0.1
LYMPHOSARCOMA			
Douglas Male	2.2	6.0	6.3
Minn. Male	4.3	6.1	6.6
Douglas Female	0.7	3.7	6.4
Minn. Female	0.3	4.6	4.8
MULTIPLE MYELOMA			
Douglas Male	0.7	2.6	4.5
Minn. Male	2.1	2.8	3.3
Douglas Female	3.0	1.7	3.9
Minn. Female	1.3	1.7	2.1
LEUKEMIA			
Douglas Female	7.5	8.0	6.2
Minn. Female	6.8	6.6	5.6

LIVER AND GALLBLADDER

Douglas Male	1.5	0.8	7.1
Minn. Male	3.1	3.6	4.2
Douglas Female	5.1	5.4	4.8
Minn. Female	5.4	4.8	4.1

BONE, including Jaw cancer

Douglas Male	0.8	1.3	1.4
Minn. Male	1.5	0.8	0.9
Douglas Female	2.1	2.6	0.0
Minn. Female	1.0	0.7	0.6

ALL CANCERS COMBINED

Douglas Male	152.0	160.3	165.0
Minn. Male	165.3	175.0	182.4
Douglas Female	150.1	135.6	116.0
Minn. Female	139.6	129.7	124.6

APPENDIX D.

CAST OF CHARACTERS

CAST OF CHARACTERS

Joe A. Sauter - sheep farmer who claimed that he, his sheep, and his hay crops were damaged by radiation (fallout)

Mary Lou Sauter Young and **John Sauter** - children of Joe A. Sauter and wife, **Rose**

Joe Sauter - nephew and namesake, spent more time with Sauter than anyone

William Sauter - nephew

William W. Allaire - Director, Nevada Operations Division, ALOO

Gordon M. Dunning - Chief, Radiation Effects of Weapons Branch, Division of Biology and Medicine

James E. Reeves - Assistant Manager Office of Test Operations, ALOO

Fred Driver - Veterinarian in Charge, USDA, St. Paul, MN

Dr. Alfred Peterson, Leon Fleisher, Jr., and **James E. Wentworth** - Veterinary Livestock Inspectors

C.L. Weaver - Radiological Safety Officer,, ALOO

Roscoe H. Goeke - Radiological Safety Advisor, Office of Test Operations

Dr. Donald R. Chadwick - Chief, Radiological Health Program, Public Health Service (PHS)

James G. Terrill, Jr. - Assistant Chief, Radiological Division, PHS

Oliver R. Placak - PHS liaison officer, Las Vegas Branch

Dr. Robert Letson and **Dr. Gordon E. Lee** - Sauter's physicians

Brig. Gen. Alfred D. Starbird - Director, Div. of Military Applications, AEC

Lewis Strauss - AEC Commissioner 1946-50, Chairman AEC 1953-58

Kenneth Fields - General Manager, AEC 1955-58

Charles Dunham - Director, DBM Div. of Military Applications

John Harley - Chief, Analytical Branch of the Health and Safety Laboratory, NYOO

Richard D. Elliot - Director of Information, Santa Fe Operations Office

Senator Hubert Humphrey - Senator from Minnesota

Senator Clinton Anderson - Senator from New Mexico

Senator Eugene McCarthy - Visscher appealed to McCarthy to investigate AEC on fallout studies

Dr. William O. Caster - Minnesota scientist involved in fallout studies Atomic Energy Development Problems

W.F. Libby - AEC Commissioner

John McCone - Commissioner, AEC 1959

Maurice Visscher - University of Minnesota scientist

Gov. Orville Freeman - Governor of Minnesota

Lester Machta - Director, US Weather Special Projects Bureau

Morse Salisbury - Director, Information Services, AEC 1958-59

Dr. Armstrong - University of Minnesota scientist, Dr. Caster's superior

Lee Loevinger - Attorney, represented state of Minnesota

S. Allan Lough - Director, HASL, NYOO

Konni Zilliacus - British Parliament member, called for ban on US wheat based on Minnesota findings

Mrs. J. Harms - concerned U.S. citizen

Gen. Herbert B. Loper - Asst. to Secretary of Defense for Atomic Energy, accused by Sen. Anderson of withholding fallout data

Rep. Chet Holifield - JCAE member, requested hot spot data from AEC

Alvin R. Luedecke - General Manager, AEC

Eisenbud - scientist

Kulp - scientist

Samuel Glasstone - editor, The Effects of Nuclear Weapons, Washington, DC: AEC, 1958

VITA

Clifford T. Honicker was born in Mobile, Alabama on Flag Day in 1958. He was raised in Nashville, TN. His mother is the well known nuclear power critic, Jeannine Honicker (author of Shutdown; and Honicker Vs Hendrie). His father, Dolph Honicker,is the news editor of The Tennessean.

He entered the University of Tennessee in the fall of 1976. He worked as a work-study research assistant to Dr. Donald Clelland from 1976-1980. His studies were fully funded by work-study, need-based, and academic scholarships. In June, 1980, he received a Bachelor of Arts degree in Sociology.

He worked for a year as a consultant to an organization doing economic conversion research of mothballed Department of Energy facilities. In 1981, he entered the master's program in Sociology at the University of Tennessee.

In 1983, he left the University to become Director of the non-profit organization, Radiation Research Project, based in Knoxville, TN. In 1984, he initiated and directed a Congressional investigation through the House Energy, Conservation and Power

Subcommittee. The thesis "Premediated Deceit: The Atomic Energy Commission Against Joseph August Sauter," was a product of his research while employed with the Radiation Research Project.

The author is married to Jacqueline Odessa Kittrell Honicker. His two boys are named Myles Henry, and Nicholas Beckett Honicker.