

**FACING
REALITY**



**Ending the
Culture of Secrecy
in the U.S.
Nuclear Weapons
Complex**

This ***FACING REALITY*** report is published under the auspices of the Council on the Department of Energy's Nuclear Weapons Complex, an initiative of the Tides Foundation's Project for Participatory Democracy.

Official Use Only, the fifth in a series of Council publications, was preceded by:

FACING REALITY: The Future of the U.S. Nuclear Weapons Complex; a companion

Citizens' Guide to the Future of the U.S. Nuclear Weapons Complex;

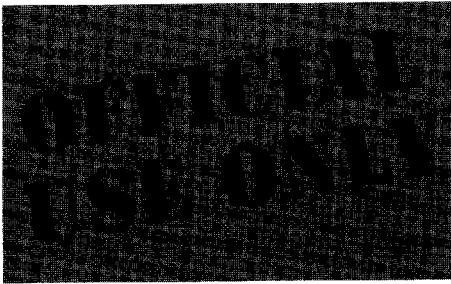
BEYOND THE BOMB: Dismantling Nuclear Weapons and Disposing of their Radioactive Wastes; and

Nuclear Weapons "CLEANUP:" Prospect Without Precedent.

This booklet focuses on excessive government secrecy, primarily as it relates to the nuclear weapons complex operated by the U.S. Department of Energy. The postwar explosion of classified information can be traced to the Manhattan Project that produced the world's first atomic weapons. We do not, however, mean to suggest that the secrecy problem is confined to the DOE. While other agencies might not be subject to the same statutory complications, much of the "culture of secrecy" is similar. U.S. government information policy in general is long overdue for a thorough overhaul.

Official Use Only presents policies to guide action and attempts to present complicated problems in an understandable way. It emphasizes needed steps toward reforming secrecy policy and practice to better serve the national interest. The report is intended for policymakers, citizens, and organizations concerned about secrecy and the future of the U.S. Nuclear Weapons Complex.

Funding for this publication has been provided by the W. Alton Jones Foundation, the Merck Family Fund, Rockefeller Financial Services, and the Project for Participatory Democracy of the Tides Foundation.



Contents

Overview

The Arms Race	1
Bureaucracy of Secrecy	3
Persistence of Secrecy	4
Obsolete Rationales	4

Fallout from Excessive Secrecy . .	8
---	----------

How We Got Here

Early History	10
Growth of Secrecy	11
Three Efforts to Declassify . . .	14

The Costs of Secrecy

Monetary Costs	17
Blocking Civilian Uses	18
Costs to Scientific Research . .	18
Weakening Democracy	19
Nuclear Proliferation	21
Environment and Health	22

Toward Better Policy

Establish Effective Oversight . .	25
Amend the Atomic Energy Act . .	25
Hold Congress Accountable . . .	26
Balance Benefits and Risks . . .	27
Improve Access to Information .	28
Coordinate Public Interests . . .	28

Conclusion	29
-----------------------------	-----------

Endnotes	30
---------------------------	-----------

This report is based upon published government documents and the research efforts of many independent experts and organizations. Also cooperating in producing the current report have been many members of the Military Production Network, a national alliance of organizations working to address issues of nuclear weapons production, waste, and contamination.

Review Committee for this Report:

Steven Aftergood, Federation of American Scientists, Washington, DC
Scott Armstrong, Journalist and Executive Director, Information Trust, Washington, DC

William Burr, National Security Archive, Washington, DC

Drew Caputo, Attorney, Natural Resources Defense Council, Washington, DC

Sharon Carlsen, Consultant to Public Interest Groups, Seattle, Washington

Tom Carpenter, Director, West Coast Office, Government Accountability Project, Seattle, Washington

Peter Gray, Writer and Editor, Seattle, Washington

Dr. Arvin S. Quist, Classification Officer, Oak Ridge National Laboratory and Oak Ridge K-25 Site, Oak Ridge, Tennessee

Robert Schaeffer, Public Policy Communications, Belmont, Massachusetts

Writer and Editor – **Peter Gray**

Public Education Consultant – **Robert Schaeffer**

Photographs – **Robert Del Tredici**

Secretary to the Council – **Richard Boone**, Director of the Project for Participatory Democracy, The Tides Foundation, San Francisco, CA

Names of organizations are for identification purposes only. Review does not imply unqualified endorsement by all individuals.

Overview

The Arms Race

Nuclear weapons have dominated national politics and international relations for the 50 years since the atomic explosions at the end of World War II. Only recently have the economic and environmental side effects of a military focus on nuclear weapons become widely recognized.

The Manhattan Project of the 1940s led to profound changes in the policies of the U.S. government. Unprecedented secrecy, originally intended to prevent other countries from obtaining the Bomb, pervaded the Atomic Energy Commission (AEC), its successors including the present Department of Energy (DOE), and other related agencies and programs.

The idea that a small group of individuals should make decisions on behalf of the country, based on secret information, was the dominant attitude of the early post-war era. Citizens deferred to an elite of the “best and brightest” to formulate policy and strategy.

However, expertise in one field does not imply proficiency or even rationality in another. The absence of public scrutiny and debate contributed to a series of spectacular fiascoes, including the Vietnam War, various CIA misdeeds, and unrestrained nuclear weapons production with its environmental and economic aftermath. Among the unfortunate leftovers of World War II and the Cold War is an ingrained habit of information concealment that has proven extraordinarily resistant to reform.

Historically, in the United States official secrecy has been reserved for “protecting national security.” Legitimate secrets can include diplomatic plans, the identities of spies, and new military technologies. The extraordinary destructiveness of nuclear weapons provided a rationale for unparalleled efforts to contain this new technology. With little public debate the executive branch gave itself broad powers to classify information (literally, to identify and file documents according to a perceived need for preventing their release). Congress also granted unprecedented secrecy specifically covering nuclear energy information.

.....
*The
Manhattan
Project of
the 1940s led
to profound
changes in
the structure
and function
of the U.S.
government.*

.....
*The burdens
and risks
associated
with huge
nuclear
arsenals
were not
justified by
a coherent
plan.*

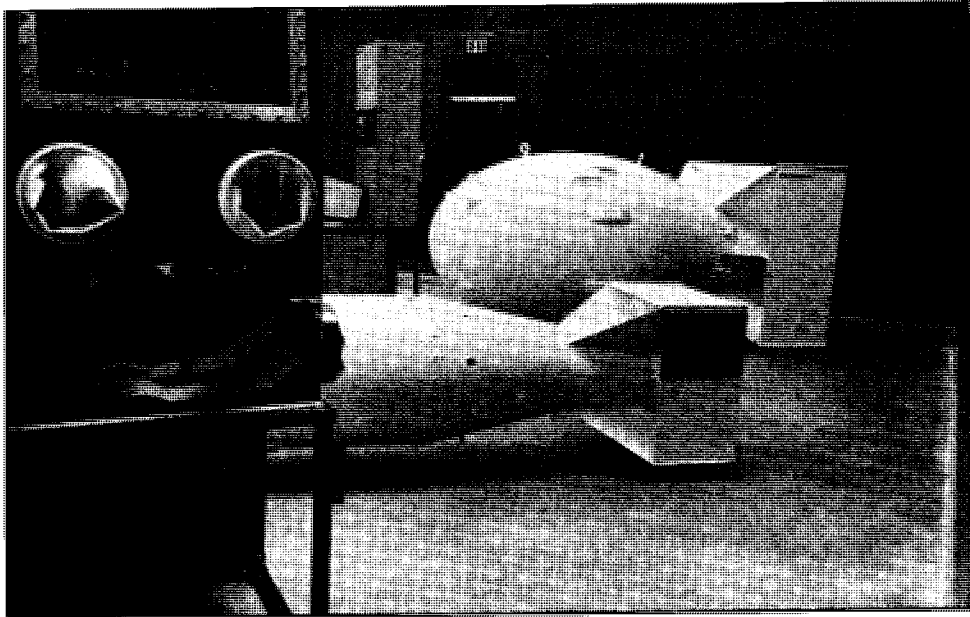
This culture of secrecy has been and often still is used to shield government decisions and operations from public scrutiny. This culture has undermined the principles of openness and public accountability, contributing to a profound public distrust of government.

Protected by secrecy, nuclear weapons production was taken to gross excesses that probably would not have survived public scrutiny. The Cold War arms race produced global arsenals that exceeded 50,000 warheads, posing a serious threat to civilization and to all living things. Nuclear warhead production and testing in the United States consumed at least 400 billion (1995 equivalent) dollars in direct expenses, not including the missiles, bombers, and submarines to carry them.¹ These activities also put communities near the bomb factories at environmental risk.

While the superpowers have stopped mass-producing nuclear weapons, warhead dismantlement and the disposition of crucial materials will require decades. The long-term costs of coping with radioactive waste and contamination from weapons production are likely to exceed 250 billion dollars.² Unless many optimistic assumptions turn out to be valid, actual costs are likely to be much higher.

The vast burdens and risks associated with huge nuclear arsenals were not justified by a coherent plan, nor was there review by other than a small group of insiders. During recent years many military and strategic experts have concluded that nuclear weapons are useless in battle, and that deterrence could have been achieved with retaliatory arsenals roughly 100 times smaller than those amassed during the Cold War.

The aggressive secrecy that marked this era was largely ineffective in terms of its primary goal of maintaining a monopoly on nuclear weapons. Although most of the public was unaware that atomic bombs were being built until one exploded over Hiroshima, the possibility of a nuclear chain reaction was known to many scientists around the world. In 1949 the Soviet Union completed its own atomic bomb, and after that its nuclear weapons development lagged that of the United States by only a few years. To some extent, secrecy might have delayed the spread of crucial technologies to additional countries, but the basic principles of nuclear explosives have been available from published sources for many years.



Replicas of a plutonium-handling glovebox and of the bombs dropped on Hiroshima and Nagasaki. Bradbury Science Museum, Los Alamos, New Mexico. Along with weapon design details and nuclear materials technologies, the assumptions behind large arsenals and information about the environmental effects of warhead production were treated as "born secret" during the Cold War.

Bureaucracy of Secrecy

A blanket authority to classify information connected with nuclear weapons has often prevented citizen oversight of government programs. Although committees of Congress have nominal oversight, they cannot cope with the vast quantities of classified information. In addition to preventing informed debate and external scrutiny, secrecy inhibits cooperation within and among agencies. This leads to redundant efforts and to the government working at cross purposes.

An emphasis on keeping secrets has also reinforced bureaucratic tendencies to hide embarrassing mistakes. The system favors massive classification on the part of the DOE, the Pentagon, intelligence agencies, and private contractors under agency direction. Nuclear weapons-related activities have generated so much classified information, much of it held by private contractors, that the DOE has been unable to even keep track of the number of secret documents for which it is responsible. During 1995 the DOE increased the official estimate of its classified material from 32 million to 130 million pages.³

.....
*The DOE
 has been
 unable to
 even keep
 track of the
 number of
 secret
 documents
 for which
 it is
 responsible.*

Out-of-control classification often backfires on its practitioners. The DOE has operated in exceptional secrecy, and for many years has inspired particularly high levels of public distrust. While public hostility toward government in general has intensified during the past several years, at least one opinion survey indicates that Energy Secretary Hazel O'Leary's openness initiative has paid off in "greater trust and confidence among the people who deal most frequently with the agency."⁴ O'Leary has said that this is a positive sign, but that "We have a long way to go to develop the open, honest, and productive relationship with the public that we want and need. I don't want anyone in the department thinking this improvement means we can relax. Instead it means we're on the right track. . . ."⁵ But as one secrecy expert noted, "Congress is actively considering eliminating the Department of Energy before the new trend can get totally out of hand."⁶

.....
Few officials are willing to give up control over information and take the risk of embarrassing revelations.

Persistence of Secrecy

Although experts from across the political and professional spectrum have described classification policies as excessive, irrational, burdensome, and "broken," the system lives on. Few officials are willing to give up control over information and take the risk of embarrassing revelations. Congress likewise decries the system, then fails to take significant action. As a result, fundamental Cold War laws and executive orders governing secrecy have changed little during the past 30 years. The Atomic Energy Act was passed in 1946, amended in 1954, and remains the same four decades later.

The political inertia surrounding secrecy policy has not been counteracted by an effective coalition in favor of reform. While a wide variety of interests including journalists, historians, scientists, and private industry would benefit from openness, secrecy is the primary concern of very few organizations. Most counter-secrecy efforts have focused on individual battles to obtain information. A strong potential coalition has yet to come together and agree on principles and goals. Compounding the political problem is a conundrum unique to secrecy. To paraphrase a common official attitude: "If only you knew what I know, you would understand why I need to withhold this information . . . but unfortunately I can't tell you what I know."

Obsolete Rationales

Great quantities of information were initially withheld because of their perceived strategic value to the Soviet Union. With that enemy gone, the United States should take another look at the habit of secrecy that developed in response. An

~~SECRET~~

* 19940000081 *
DOE-OR

4234



April 17, 1947

U. S. Atomic Energy Commission
P. O. Box 8
Oak Ridge, Tennessee
Attention: Dr. Fidler

Subject: MEDICAL EXPERIMENTS ON HUMANS

1. It is desired that no document be released which refers to experiments with humans and might have adverse effect on public opinion or result in legal suits. Documents covering such work field should be classified "secret". Further work in this field in the future has been prohibited by the General Manager. It is understood that three documents in this field have been submitted for declassification and are now classified "restricted". It is desired that these documents be reclassified "secret" and that a check be made to insure that no distribution has inadvertently been made to the Department of Commerce, or other off-Project personnel or agencies.

2. These instructions do not pertain to documents regarding clinical or the rapetic uses of radioisotopes and similar materials beneficial to human disorders and diseases.

ATOMIC ENERGY COMMISSION

O. G. HAYWOOD, JR.
Colonel, Corps of Engineers.

~~RESTRICTED DATA~~
This document contains information which is classified as Restricted Data under the Atomic Energy Act of 1954, and the release of such information is controlled by the Atomic Energy Commission.

CLASSIFICATION CANCELLED
AUTHORITY: DOE/SA-20
BY: H. R. SCHMIDT, DATE:
HRJ/cl/bb 2/22/94

~~SECRET~~

This document about radiation experiments on humans was classified as "Restricted Data" by the Atomic Energy Commission in 1947, and declassified by the Department of Energy in 1994. In part it reads: "It is desired that no document be released which refers to experiments with humans and might have adverse effect on public opinion or result in legal suits. . . . It is desired . . . that a check be made to insure that no distribution has inadvertently been made to the Department of Commerce, or other off-Project personnel or agencies."

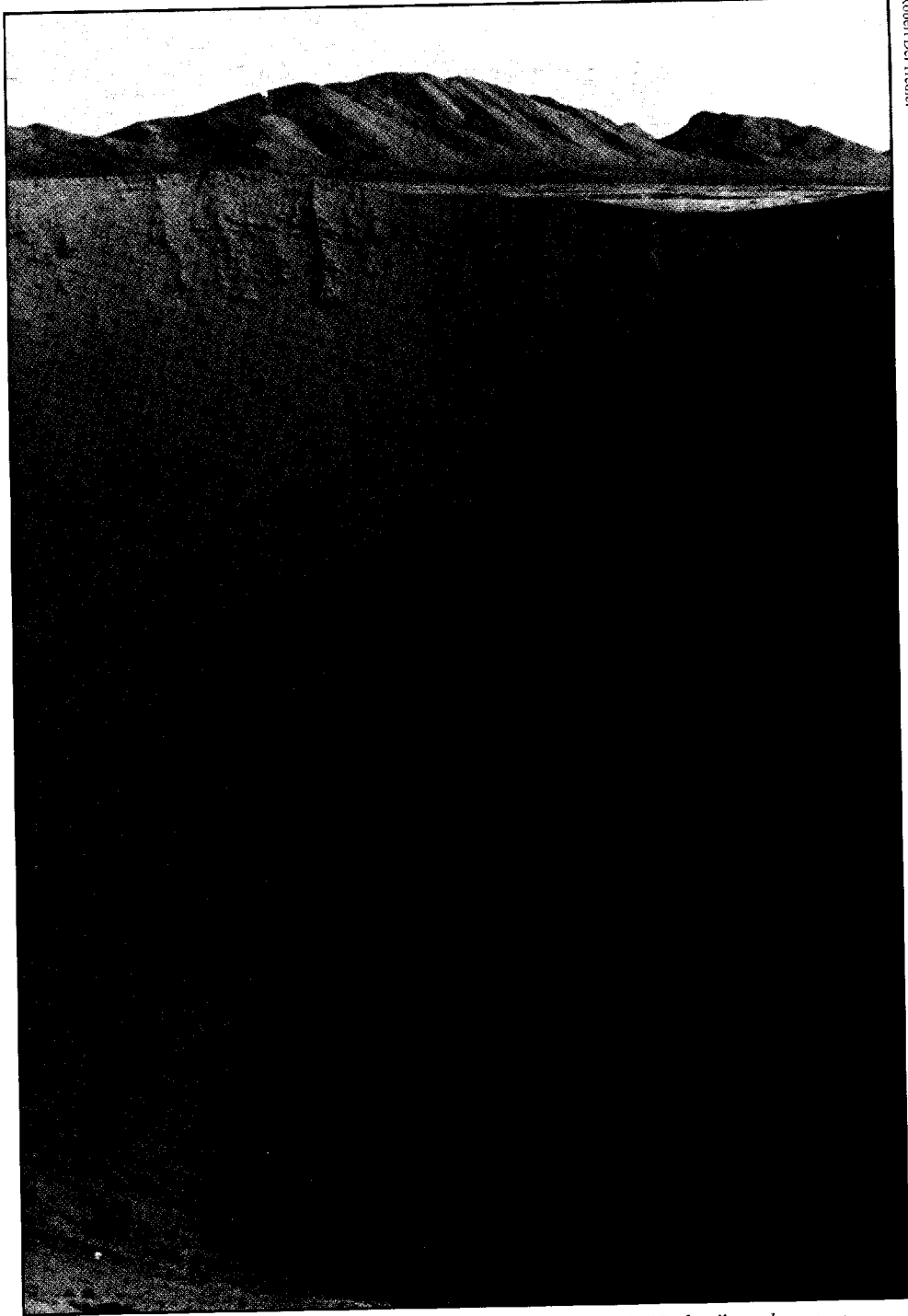
open and thorough review of its rationales can help separate legitimately classified information from the rest. For example, the total number of nuclear warheads in the U.S. has long been classified. By continuing to obscure its nuclear capability, the United States complicates arms control and verification efforts such as the nuclear nonproliferation treaty. The DOE and other agencies that hold secrets for obsolete reasons should be given a choice: either declassify the information in question or produce and defend a valid justification for keeping it secret. A clear and concise rationale should be made public for each discrete type of data.

.....
Strategic assumptions and basic facts behind the supposed need for more nuclear materials production are kept secret, preventing informed debate.

During the late 1980s, the DOE selectively released information to support its attempt to continue making plutonium at Hanford, Washington, saying that “national security reasons do not allow the permanent shutdown” of a production reactor.⁷ In fact, the nation had a plutonium glut, and now struggles with the problem of where to put tens of tons of this surplus warhead material. Similar tactics are now being used by the government and its contractors as they try to gain support for continuing nuclear test explosions in the face of worldwide opposition, and in proposing to spend billions of dollars on a reactor to produce tritium, another crucial nuclear weapon ingredient. The strategic assumptions and basic facts behind the supposed need for these programs are kept secret, preventing informed debate.

Discussion of and debate over classification standards would help develop a more reasonable policy. The DOE-sponsored research of Arvin Quist, at the Oak Ridge, Tennessee K-25 Site is a good first step toward understanding classification policy and making it more rational.⁸ The volumes written by Quist provide a valuable discussion of the costs and drawbacks of secrecy as well as describe types of potentially secret data, rationales for classification, and levels of classification. Notably, despite the hundreds of billions of dollars at stake, this study is the first of its kind. The DOE has also undertaken a Fundamental Classification Review to examine the basis for secrecy policy, with assistance from the National Academy of Sciences. To be effective, this review should solicit and respond to public input at regular intervals.

This report in the *Facing Reality* series briefly describes the history of secrecy, with emphasis on the DOE nuclear weapons program, in order to illustrate where we are and how we got here. But it is time to go beyond simply bemoaning the situation. In the interests of true national security, economic efficiency, and democracy itself, fundamental reform is long overdue. *Official Use Only* concludes with recommended reforms.



A crater 600 feet deep and 1,200 feet wide left by the July 1962 "Sedan" nuclear test. The effects of fallout from atmospheric testing were obscured by secrecy for decades.

The Fallout

[T]his was one of our greatest failings: I don't believe we ever took the issue [of the Vietnam War] to the people and debated it, either in the press or, more importantly, before the Congress. . . . And then after we got into the mess, and some of us said "Look, we've got to go back to Congress and really get this thing thrashed out . . .," then [the leaders of the Senate] said, "for God's sake, don't bring it back to us. It will tear us apart, we're so split." But that's the price we should pay in a democracy. If it tears us apart, let's debate the issue, tear ourselves apart, and then reunify. And at least have [the people] behind whatever decision the president makes. We didn't have that. It was a terrible error, and we should never make that mistake again. . . . Because we made the mistake then, we've been tearing ourselves apart ever since.

— former Secretary of Defense Robert S. McNamara,
interview on National Public Radio, May 8, 1995.

During the past 25 years the massive error in Vietnam has been well documented, initially due to the efforts of a few courageous individuals such as Daniel Ellsberg who exposed the Pentagon Papers. Similarly, secrecy related to nuclear weapons production has resulted in policies and programs that have torn apart communities and wrecked lives.

The absence of public disclosure and oversight has led to indefensible and dangerous actions. For instance:

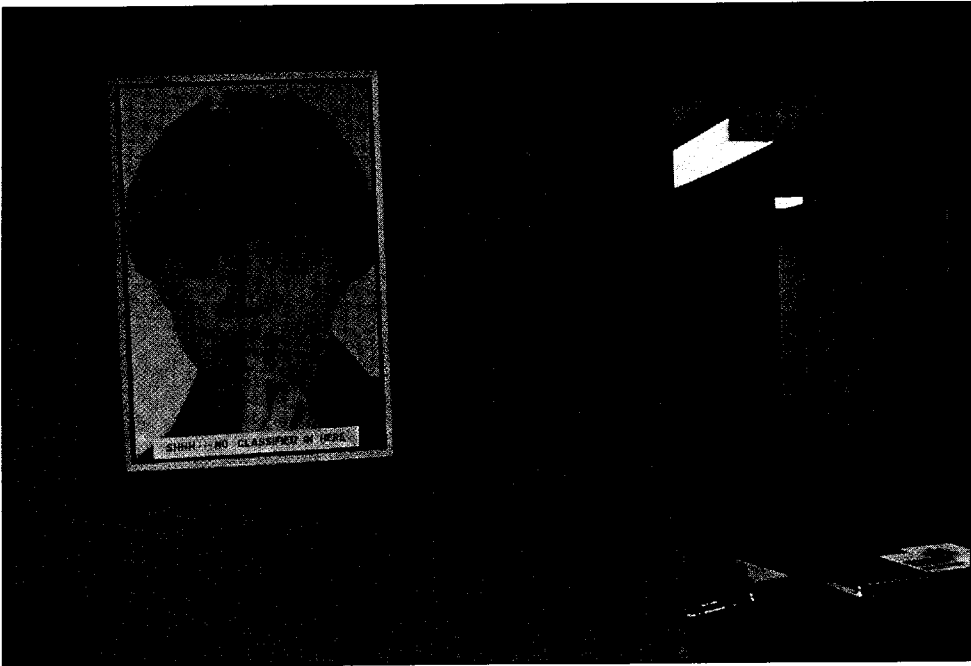
- At the Fernald Plant in Ohio, where materials for nuclear weapons were processed, roughly one million pounds of toxic uranium dust were released into the air and water. Several local drinking water wells were known to be contaminated for years before residents were notified.
- The nuclear weapons facilities at Oak Ridge, Tennessee polluted the environment with about 800,000 pounds of mercury along with numerous other toxic and radioactive materials. Mercury-contaminated soil was used as fill at a local church and for a public school playground. Government officials and contractor employees who knew about the contamination were not allowed to alert the public.
- The Hanford, Washington site released about 27,000 times as much radioactive Iodine-131 into the air as was released by the Three Mile Island accident. On at least one occasion, I-131 was emitted deliberately as an experiment. Nearby residents were sometimes exposed to radiation doses hundreds of times the level believed safe at the time. Information on these releases was kept secret from the late 1940s until the mid 1980s.

from Excessive Secrecy

What happened [in Nazi Germany] was the gradual habituation of the people . . . to being governed by surprise; to receiving decisions deliberated in secret; to believing that the situation was so complicated that the government has to act on information which the people could not understand or so dangerous that, even if people could understand it, it could not be released because of national security. . . .

— Milton Mayer, *They Thought They Were Free*, 1966.

- About 250,000 military servicemen were exposed to heavy radioactive contamination from nuclear weapons tests on islands in the Pacific and in Nevada, without being informed of the health risks.⁹ Tens of thousands of sailors were given the futile task of cleaning badly contaminated ships that had been moored near nuclear explosion sites. Similar numbers of soldiers were exposed to nuclear explosions at close range to prepare them for the “atomic battlefield.” These men were sworn to secrecy about the tests, which delayed the possibility of recognition or compensation for 30 years.
- About 60,000 U.S. servicemen were exposed to chemical weapons in tests during World War II, with a variety of debilitating effects. Records of the tests were kept secret well into the 1990s.¹⁰
- U.S. atmospheric nuclear weapons tests spread radioactive fallout around the planet for nearly 20 years. Government officials described nuclear testing as harmless to the public. Meanwhile, the AEC established a secret global network for illegal human tissue sampling in order to study the effects of fallout. In 1955, AEC official Dr. Willard Libby emphasized the importance of obtaining samples from children, saying that “if anybody knows how to do a good job of body snatching, they will really be serving their country.”¹¹ Not until 1995 were documents about this research made public, and then only due to the specific efforts of DOE Secretary O’Leary and the President’s Advisory Committee on Human Radiation Experiments.
- Hundreds of U.S. citizens, including hospital patients and mentally handicapped children, were subjected to radiation experiments without their informed consent. These experiments were not as grotesque as those performed on prisoners by Germany during World War II, but the reasoning behind them was remarkably similar.



Administration Building, Pantex Nuclear Weapons Final Assembly Plant near Amarillo, Texas.

How we got here

Early History

.....
The country's founders gave the President primary authority for setting secrecy policy.

During the late 1700s, the Articles of War contained provisions barring illicit correspondence with the enemy and allowing the Continental Congress to keep its daily records temporarily secret. Proceedings of the 1787 Constitutional Convention were not published until 1819. Diplomatic communications and some military information were also held secret, but restrictions were of limited scope and duration and information was shared among the branches of government. The country's founders gave the President primary authority for setting secrecy policy, and specified that Congress would publish its affairs except when diplomatic or military information is involved. In an era of slower technological progress, relatively little information was held back. Secrecy was primarily employed during wartime to protect military plans. This information would have been useful to an enemy for only a short time, and generally it was kept secret for a minimal period.¹²

In a few cases during the Civil War, newspapers were suppressed when they revealed military secrets. However, corruption stemming from secrecy inspired President Lincoln to ask for legislation that would enable people who witnessed fraud to report it. The 1863 "Lincoln Law" later became the False Claims Act. At about this time, the industrial revolution increased the development of new technologies usable in war and led to increased efforts to delay enemy acquisition of essential information. In the 1880s, Britain attempted to control the spread of new torpedo technology by contracting with different companies for various components. That effort was meant to prevent any potential spy from knowing an entire weapon's design. (Later, during the Manhattan Project, this approach was dubbed "compartmentalization.")

World War I brought a more organized approach to secrecy, including a system of marking (or "classifying") documents as "Secret," "Confidential," or "For Official Use Only," depending on the perceived consequences from revealing each document. The Espionage Act and the Trading With the Enemy Act, both passed in 1917, gave statutory authority to the executive branch to classify specific types of information including, for the first time, private patents that might "assist the enemy or endanger the successful prosecution of the war if released."¹³

After World War I, the classification system gradually increased in complexity, largely reflecting new spying techniques such as aerial photography. However, most secrecy was confined to data related directly to diplomacy or the military, rather than to hide costly government projects or to cover up bureaucratic fiascos.

The Growth of Secrecy

World War II brought radical changes in U.S. secrecy policy. To a greater extent than ever before, military advantage hinged on cutting-edge science and engineering. Radar, cryptography, aviation, submarine warfare, and other fields advanced rapidly. In 1940 President Roosevelt signed the first Executive Order dealing with secrecy, somewhat expanding the scope of secret documents and materials as well as the number of government and contractor employees given classification authority.¹⁴

.....
*World War
II brought
radical
changes in
U.S. secrecy
policy.*

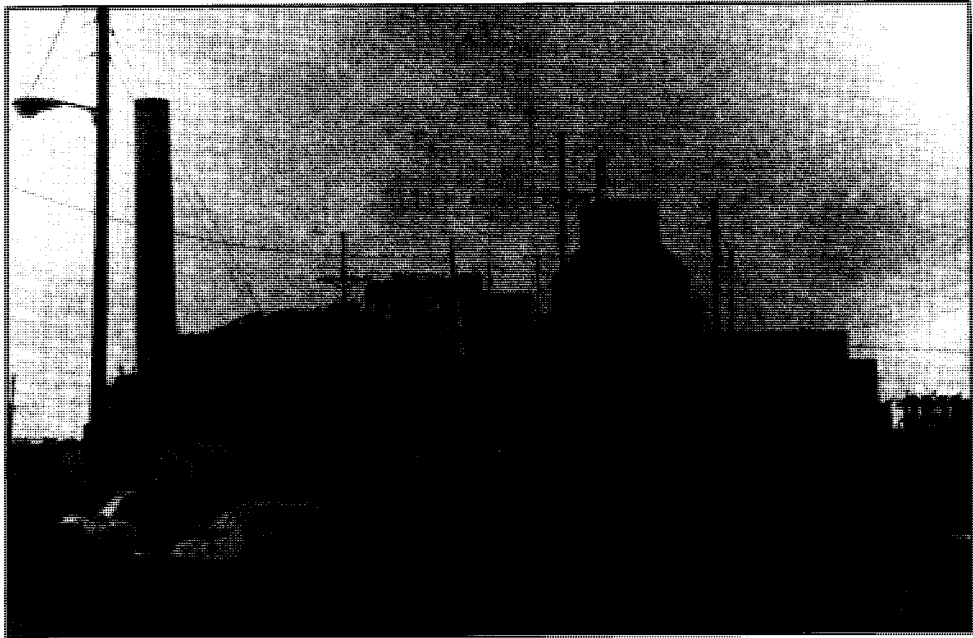
Scientists have traditionally chafed under any restrictions on information, but in the case of the atomic bomb it was a group of nuclear physicists, not generals or bureaucrats, who initiated self-censorship. In early 1939, nearly three years before the United States entered the war and began the Manhattan Project, Leo Szilard and other physicists agreed among themselves not to publish papers that could be useful in designing reactors for producing crucial nuclear weapons materials.

.....
Information was and is classified simply by virtue of its connection to the nuclear industry rather than because of any demonstrated national security implications.

The Manhattan Project quickly constructed a vast network of reactors and exotic factories, and just as quickly institutionalized the effort to control nuclear information. All documents and data pertaining to nuclear weapons production were classified. The very existence of key facilities was kept secret. Many workers did not know the real names or purposes of the materials with which they were working. The National Defense Research Council, formed in 1940 as a scientific advisory panel to the military, advocated “compartmentalization” in order to prevent anyone from obtaining “any classified information except that needed for the performance of the particular tasks which had been entrusted to him.”¹⁵

After World War II, the Atomic Energy Act (AEA) of 1946 created the statutory framework for military and civilian uses of nuclear energy, and for the control of related information. The Atomic Energy Commission (AEC) was given authority both to promote and to regulate nuclear power, and to build nuclear weapons while preventing their proliferation. These contradictory roles were matched by a wide disparity in perceptions and actions regarding secrecy.

As one contemporary writer put it, “partly because they themselves were successfully kept from knowing about the [atomic] bomb until it had burst, Americans have considerable faith in the feasibility of keeping secrets.”¹⁶ That faith led, through the AEA, to the classification of broad categories of “Restricted Data” that were “born secret.” This information was and is classified simply by virtue of its connection to the nuclear industry rather than because of any demonstrated national security implications.



The L Reactor at the Savannah River Site, South Carolina, was used to produce plutonium and tritium for nuclear weapons. Blanket secrecy also obscured the substantial contamination generated at the site.

Congress and Presidents

The only major national legislation promoting openness has been the Freedom of Information Act (FOIA), which is based on a premise that the executive branch has an obligation to publish its policymaking and regulatory actions whenever possible. By filing FOIA requests, citizens, independent researchers, and journalists have managed to bring to light many scandalous government activities, undoubtedly providing some incentive against such behavior. As a practical matter, however, obtaining information through the FOIA usually requires prior knowledge that a program exists or an event occurred. The release of documents often depends on the whim of unaccountable officials. Prying loose information that should never have been secret in the first place is a long, arduous process.

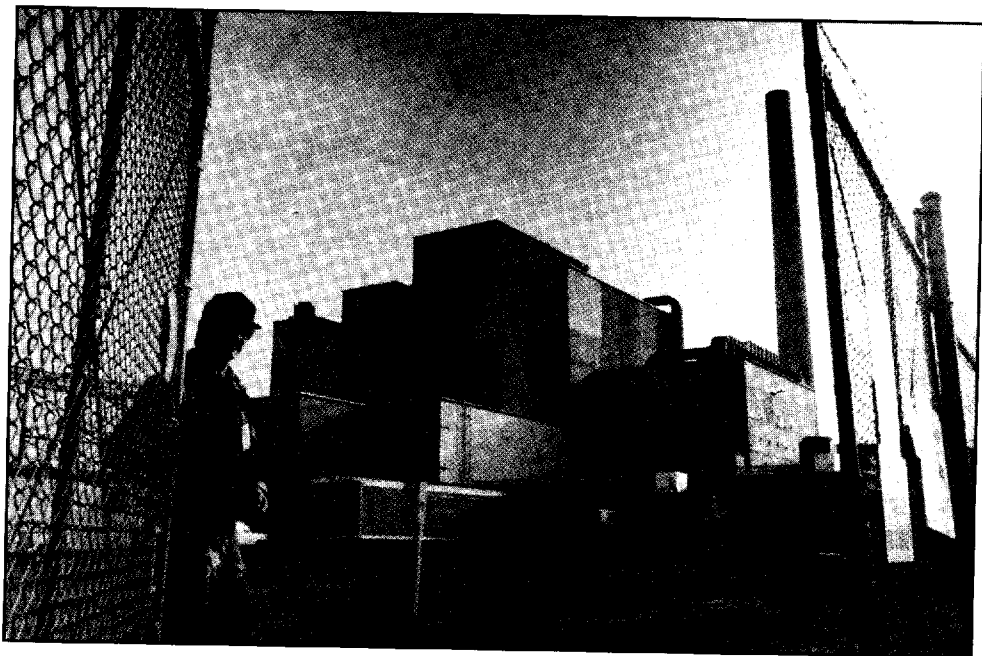
• • • • •
*Prying
 loose
 information
 that should
 never have
 been secret
 in the first
 place is a
 long,
 arduous
 process.*

Executive Orders (EOs) issued by Presidents Truman, Eisenhower, Nixon, Carter, Reagan, and Clinton have, at the margins, tightened or loosened classification standards. For example, the EO issued by President Reagan essentially eliminated the “balancing test” that had been established by President Nixon to help bring the public interest in openness into secrecy decisions. President Clinton’s order aims to restore that test and to put time limits on secrecy for large volumes of documents. This presidential statement has symbolic importance and serves as the foundation for future policies and regulations.

Three Efforts to Declassify

1: The Smyth Report – 1945

Experts such as General Leslie Groves, head of the Manhattan Project, and physicist Leo Szilard recognized as early as 1945 that scientific secrets were impossible to keep. In Szilard’s estimation, half the secrets were revealed at the moment of the Hiroshima bombing, and half of the remaining secrets were revealed by the Smyth Report, released two days



The B Reactor at Hanford, Washington was the world’s first plutonium-production reactor. It operated from 1944 to 1968 and made plutonium for the Trinity test in New Mexico and the Nagasaki bombing. Not until the late 1980s did Hanford begin to open its records regarding its major radioactive and toxic emissions.

after Nagasaki was bombed. That report was published by the government in order to recognize the Manhattan Project and give credit to the individuals and institutions involved. This was done in order to establish a baseline of public information, but with the rationale that the remaining secrets could be more easily kept once substantial information had been released. This was the first major effort at declassification related to nuclear weapons.

Some officials and many Manhattan Project scientists recognized that the realities of nature could not be hidden for long, and they believed that secrecy would delay acquisition of the atomic bomb by other nations for at most one or two decades. They advocated sharing the secrets and internationalizing control of nuclear weapons, thus perhaps blocking construction of nuclear arsenals. Whether this approach could have worked at the time is unknown; in any case, the opposite path was taken. Now, 50 years later, the world is inching toward a system of international control, inspection, and verification of nuclear weapons materials and capabilities.

The Soviet Union tested its first atomic bomb in 1949, shattering any public illusion that the new weapon could be monopolized by the United States and its allies. By then, however, the new habits of secrecy and a closed, unaccountable classification system were well established. The U.S. government built its framework of secrecy with almost no open debate.

The culture of secrecy established by the Atomic Energy Act remains largely in effect today. When the Act was amended in 1954, some of its secrecy provisions were modified, but primarily in order to release data useful to the civilian nuclear power industry rather than to increase public access to information.

2: Citizen Pressure in the 1980s

Health hazards of atmospheric nuclear testing, the long-term problem of radioactive waste and contamination, and numerous accidental and deliberate releases of dangerous materials were hidden for decades. Not until the mid 1980s did citizen groups near the major nuclear weapons production sites obtain significant portions of the secret information regarding their own safety and health. Despite the difficulties, persistent citizen pressure and a series of court cases brought this second series of revelations about the nuclear weapons complex.

.....
*The culture
of secrecy
established
by the
Atomic
Energy Act
in 1947
remains
largely in
effect today.*

3: Openness Initiative – the 1990s

In 1993 Energy Secretary Hazel O’Leary began a third major declassification effort with an openness initiative that released long-withheld documents and data, including some having to do with radiation experiments on involuntary human subjects. To reflect the intentions of O’Leary and her staff, the DOE Office of Classification was renamed the Office of Declassification, and steps were taken to improve public access to documents. In March 1995 O’Leary announced the first comprehensive review of DOE classification policies in nearly 50 years. The DOE and its contractors, however, still hold far more secret documents than they did during the early decades of the Cold War.

.....
*The DOE
and its
contractors
still hold far
more secret
documents
than they
did during
the early
decades of
the Cold
War.*



Energy Secretary Hazel R. O’Leary (center) with “whistleblowers” at an “Openness and Secrecy” symposium in May 1994. On a number of occasions O’Leary has met with those who have raised questions about DOE activities. She has also announced a policy of “zero tolerance” for reprisals against whistleblowers .

The Costs of Secrecy

Monetary Costs

Many of the costs of over-classification cannot be put in monetary terms, and the expenditures for which we have estimates are probably among the least important aspects of the societal burden. The weakening of democracy and public trust caused by decisions that would not have been accepted by fully informed voters cannot be measured in dollars.

Direct costs include secure storage space, multiple locks, guards, surveillance, buildings within buildings, and other physical and administrative measures taken wherever classified documents are stored. These expenses are amplified by the costs of providing, reviewing, and maintaining security clearances for employees. When millions of pages of material are treated this way, and when classification is for the indefinite future, the burden is compounded every year. Tracking of these costs is sketchy and inconsistent, but undoubtedly totals billions of dollars annually. A May 1994 report by the Office of Management and Budget indicates that taxpayers spend about 16 billion dollars per year just to physically safeguard classified information.¹⁷ Many experts view this estimate as a gross understatement of secrecy's true cost.

Inefficiency, waste, and fraud are inevitable features of classified work. Executives who have worked on top-secret projects estimate that secrecy adds at least 20-25 percent to contract costs.¹⁸ Based on insights from court cases regarding misuses of secrecy, other observers believe that secrecy and compartmentalization probably double the costs of government work.

Costly projects have been shielded from criticism while billions of dollars are poured into them. By the time they are revealed, such programs become politically difficult to halt. The A-12 (which finally was canceled) and B-2 aircraft programs are outstanding recent examples, but the DOE's attempts to build new production reactors even with a glut of nuclear weapons materials also wasted billions. Current efforts by the weapons labs and the Pentagon to resume nuclear testing are part of the same tradition.

.....
*Taxpayers
spend about
16 billion
dollars per
year just to
physically
safeguard
classified
information.*

If the irrationality of oversized arsenals and the environmental effects of nuclear weapons production had been exposed earlier, the DOE's vast "cleanup" problems would have been greatly reduced.¹⁹ Yet even in the 1990s, secrecy blocks informed debate over projects such as a proposed multi-billion-dollar tritium production reactor.

Once information is designated as secret, the burden of protecting it is passed on indefinitely unless it is given a clear declassification date. Reviewing documents for declassification has also been expensive. Under rigid, outmoded practices of line-by-line review, rather than "bulk declassification" of some document categories, releasing data can be more costly than guarding it for another year. An agency focused on its annual budget has little incentive to declassify information, even though secrecy costs more than openness in the long-term.

.....
An agency focused on its annual budget has little incentive to declassify information.

Blocking Civilian Uses

While there is little likelihood that the hundreds of billions of dollars that have been poured into military research can be recovered, some of the technologies developed within classified programs probably can be adapted to civilian uses. In many cases there is no national security benefit to keeping these technologies locked away. However, the difficulty of declassification, along with uncertainty about whether contractors or the government own the technologies, prevents economic benefits from being realized. Roughly 6,000 U.S. inventions have been put under secrecy orders since the 1940s.²⁰ Some of the technologies and materials developed at taxpayer expense might have valuable civilian applications and pose no security threat, yet costly and cumbersome declassification obstacles block their release.²¹

Costs to Scientific Research

Secrecy weakens scientific endeavors. Many capable scientists stay away from classified research, recognizing that they will not be able to publish their discoveries. The AEC recognized this problem as early as 1949 when it said, "Staffing of atomic energy projects is hampered so long as there is feeling on the part of many scientists that employment in the atomic energy program precludes their working on any but 'classified' research projects. . . ." ²² In 1970 the Department of Defense observed that "the laboratories in which highly classified work is carried out have been encountering more and more difficulty in recruiting the most brilliant and capable minds." ²³

“Need to know” rules prevent communication among scientists, leading to missed opportunities, redundant work, and inadequate peer review. As the AEC put it in 1950, “Secrecy, if unwisely applied, can go far beyond its objective of safeguarding vital information—it can stifle and smother freedom of research and freedom of inquiry in nonrestricted areas, and from this the Nation could only suffer a net loss.”²⁴

In spite of these drawbacks, research at the DOE’s nuclear weapons laboratories continues under indiscriminate secrecy policies stemming from the Atomic Energy Act.

Weakening Democracy

Secrecy blocks informed decision making. Elected officials cannot make the best choices when they are denied crucial information. Coordination and planning within and among government agencies are also hampered by excessive secrecy. Policies are often set by unaccountable bureaucrats who do not receive independent perspectives and are subject to conflicts of interest. For instance, several strategic weapons systems developed by the United States, including both multiple-warhead and highly accurate missiles, were undertaken without independent review or consideration of their long-term hazards. Without full public disclosure, such programs were aggressively lobbied through Congress by the DOE nuclear weapons labs and contractors. Many of these new weapons accelerated and destabilized the arms race and imposed enormous risks on the entire world.

When secret activities finally come to public attention, the details are often disillusioning or scandalous. The 20 year period following World War II was a time of national optimism and public trust. This era, however, coincided with an unprecedented level of secret government activities. Afterward, as official errors and misdeeds were exposed, the illusion could not be maintained that an unaccountable elite would act in the general interest.

.....
*When secret
activities
finally come
to public
attention, the
details are
often
disillusioning
or
scandalous.*

.....
The security clearance system and the rewards and punishments that go with it constitute an unaccountable means of promoting bureaucratic rather than national interests.

Secrecy erodes individual rights and subverts justice. Carried to extremes, it becomes ludicrous. For instance, for many years, Manhattan Project physicist Glenn Seaborg was not allowed to even read his own private diary. People who have access to secret information as part of their work have been harassed, particularly when they have questioned secret decisions or official versions of the truth. The revocation of security clearances (a career-destroying action), without recourse or independent review, has been used to punish those who dare to speak out. The security clearance system and the rewards and punishments that go with it constitute an unaccountable means of promoting bureaucratic rather than national interests.

The above problems are compounded by the way secrecy policy limits our ability to learn from mistakes. Indefinite classification of information distorts the historical record and obscures the truth. Fifty years after the Hiroshima bomb historians still have problems obtaining basic information about the earliest days of the nuclear weapons era.

Cynicism pervades the official secrecy system. Classified information is often published inadvertently or leaked for political purposes with no apparent effect on national security, and no prosecution or penalties. Although this disregard is one way to get around a flawed system, government through leaks is prone to manipulation. Sporadically and illegally released information is a poor basis for public policy and reminds citizens that they are not privy to information that should be a part of public dialog. As one analyst has suggested, "If current trends are taken to the limit, everything may eventually be classified—but nothing will be secret."²⁵

The drastic decline since the 1960s in the percentage of U.S. citizens who say they trust their government is surely linked to the numerous official lies that have been exposed. When officials are seen as unaccountable, citizens often conclude that their own voices do not count. Many respond by not voting or otherwise participating in the political process. Some react by subscribing to conspiracy theories or joining extreme anti-government organizations.

Nuclear Proliferation

In some ways, the secrecy intended to protect national security and prevent nuclear proliferation has indirectly had the opposite effect. For example, a lack of openness in the United States about its arsenal and its nuclear testing program has delayed or weakened arms reduction treaties. A lack of U.S. (and other nuclear power) reciprocity in facility inspections and other confidence-building measures serves to undermine the nuclear nonproliferation regime. Although extension of the Nuclear Nonproliferation Treaty has recently been agreed to by a majority of its signatories, many nations question whether the nuclear weapons states are serious about their stated commitment to pursue complete nuclear disarmament. Because it would not reveal the size of its own arsenal, the United States also missed a potential opportunity to gain crucial information about the former Soviet Union's nuclear weapons stockpile which is now a source of smuggled materials and possibly might supply complete illicit warheads.

Secrecy surrounding the licensing of nuclear technology exports blocked oversight that might have prevented Iraq from buying crucial equipment for its nuclear weapons effort. The Commerce Department treats its decision making as "proprietary information," which is not subject to even minimal review. This prevents watchdog groups and scholars from assessing U.S. contributions to proliferation.

According to the House Government Operations Committee, "Preventing companies from being embarrassed over selling certain items to proliferator nations clearly is not sufficient reason to hide export licensing information from the public eye. . . . The policy of treating license review as a secret activity, shielded from public and open congressional scrutiny, works against the objectives export controls are trying to accomplish."²⁶

.....
A lack of openness in the United States about its arsenal and its nuclear testing program has delayed or weakened arms reduction treaties.

Environment and Health

For decades, policies of secrecy have concealed the mishandling of radioactive and toxic materials at all the major U.S. nuclear weapons production sites. Oversight that might have led to better methods was delayed, and many citizens were exposed to involuntary risks. Partly due to secrecy, partly due to inattention and poor record-keeping, the health effects of nuclear weapons production are poorly understood. The loss of the DOE's credibility, however, is clear. This legacy of distrust only complicates and increases the cost of present and future environmental cleanup efforts.²⁷

Toward Better Policy

.....
No good rationale has been offered for retaining the excessive secrecy inherited from the Cold War.

The end of the Cold War, the breakup of the Soviet Union, and the end of mass production of nuclear weapons coincide with a growing consensus across a broad political spectrum that the present secrecy apparatus serves the United States poorly. Observers including Dr. Edward Teller, known as the Father of the Hydrogen Bomb, have recommended drastic reductions in the amount of information kept secret as well as the length of time before it is released. Many individuals, including historians, journalists, scientists, as well as private industries, have strong interests in obtaining information that could not plausibly threaten national security if it were released.

No good rationale has been offered for retaining the excessive secrecy inherited from the Cold War. However, progress toward reform has been disappointing. Congress has occasionally taken symbolic positions in favor of openness, yet it has lacked the will to act decisively. For example, good estimates of the total budget devoted to intelligence activities have long been available, and in 1994 Congress inadvertently disclosed the actual numbers, with no apparent harm to national security. Yet Congress remains unwilling to officially reveal the cost to taxpayers of intelligence programs.

HANFORD CODE *a-146*

FILES CIRCULATING COPY
RETURN TO:
TECHNICAL INFORMATION FILES

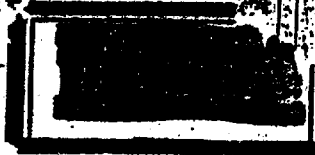
DEVELOPMENT DIVISION

HEALTH INSTRUMENT DIVISIONS

DISSOLVING OF TWENTY DAY METAL AT HANFORD

DEATH RE

May 1, 1950



CLASSIFICATION CANCELLED
WITH DELETIONS
BY AUTHORITY OF DOE/JOC
Lee D. Sullivan 5/6/89
APPROVED BY DATE

GENERAL ELECTRIC

NUCLEONICS DEPARTMENT

HANFORD WORKS

RICHLAND, WASHINGTON

INVENTORIED
JUN 2 1952
DOCUMENT AUDIT AND
INVENTORY UNIT

INVENTORIED
SEP 28 1950
DOCUMENT AUDIT AND
INVENTORY UNIT

89100

Cover page of a document about the "Green Run" at Hanford. Plant operators deliberately released radioactive Iodine-131 into the atmosphere, exposing nearby residents to hundreds of times the annual dose believed "tolerable" at the time. Citizens were not informed of the risks imposed on them, and they were not able to obtain this document until 1994.

.....
*The
agencies that
classify
information
have been
incapable of
serious
reform on
their own.*

On April 17, 1995, President Clinton signed Executive Order 12958 regarding classification, ending, for now, a revision process that began in 1985. The order recognizes that “democratic principles require that the American people be informed of the activities of their Government,” and it attempts to establish a “uniform system for classifying, safeguarding, and declassifying” information.²⁸ EO-12958 also includes requirements for declassification of old documents after 25 years, and new ones after 10 years. Exemptions are included for information whose release would “clearly and demonstrably” damage national security. In theory, the order should lead to the release of millions of pages of information. However, any real progress toward openness will depend on: 1) interpretation of vaguely worded sections; 2) the content of five directives that will be based on EO-12958; and 3) declassification regulations implemented and resources allocated by executive branch agencies and congressional appropriators.

In general, the agencies that classify information have been incapable of serious reform on their own. The notable exception is the Department of Energy under Secretary O’Leary, but there is little reason to suspect that O’Leary’s declassification efforts will enjoy lasting support among DOE bureaucrats. In the government as a whole, each year more information continues to be classified than declassified.

While the Soviet threat provided the rationale for widespread secrecy, the end of the Cold War has not led to openness. The persistence of costly, undemocratic assumptions and practices stems from the entrenched culture of secrecy more than from any conspiracy or malicious intent. Bringing that culture in to line with reality will require executive leadership, legislation, standards, and incentives that reflect a societal interest in openness.

The following actions are crucial to the development of a new openness policy.

Establish Effective Oversight

Whatever the classification system, it should be accountable to an independent entity charged with meaningful oversight. Without such accountability there is nothing to stop the insular security bureaucracy from continuing its historical overemphasis on secrecy.

Courts are one tool for oversight, but too many judges question their own expertise in the national security area and thus refuse to critically review the classification decisions of federal agencies. As another tool for accountability and oversight the DOE should be subject to an independent Classification Review Board comprised of non-government experts appointed by the President, serving for fixed terms, and working under security clearances. The Defense Nuclear Facilities Safety Board is a good example of such a panel that has provided valuable advice and oversight.

This new board would be empowered to make recommendations to the Energy Secretary on classification policy in response to appeals brought by citizens. The Secretary should be expected to respond to each recommendation, either accepting it or explaining the reasons for rejection. In addition to providing an informed judgment on classification matters, such a board would bestow on secrecy the public credibility that comes from independent oversight.

Amend the Atomic Energy Act

The AEA, unchanged for more than 40 years, established an anti-democratic presumption of secrecy and turned over too much control to unelected and unaccountable officials. While the Congressional Joint Committee on Atomic Energy theoretically oversaw AEC operations from 1946 until the early 1970s, many of the committee's deliberations were not subject to public review. As a result of the Act, vast quantities of information have been treated as equally deserving of secrecy simply because they are related to military nuclear activities. The classification provisions of the Act should be replaced with guidelines and regulations that recognize the benefits as well as the potential dangers of openness. In particular, presumptive secrecy needs a thorough and independent review.

.....
*The DOE
should be
subject to an
independent
Classification
Review
Board
comprised of
non-
government
experts.*

Under more sophisticated standards, data would be sorted into categories for both declassification and classification. Secrecy presumptions would be in accord with a more realistic estimation of the risk posed by release. For example, the specific design codes and engineering data for nuclear warheads would be presumptively classified; in other words, deliberate action would be needed before they could be revealed. Information related to environmental discharges from nuclear weapons plants or worker health and safety data, on the other hand, would be presumptively accessible. Classifying presumptively accessible information would require specific intervention by an accountable official.

.....
The legal basis for classification should be shifted strongly in favor of openness.

In general, the legal basis for classification should be shifted strongly in favor of openness. This is necessary to counter the inevitable bureaucratic bias toward secrecy as well as to bring U.S. policy up to date in a post Cold War world. The reasons for keeping secrets are themselves often secret, sometimes with good justification. Exceptions can be made for such cases, but to prevent secrets within secrets from being used as a blanket excuse not to declassify, independent review is essential. That review should be conducted openly in order to avoid repeating the mistakes that invariably stem from covert policymaking.

Hold Congress Accountable

In theory, Congress has an oversight role in secret government activities. In practice, legislators have a dismal record of policing the DOE, the CIA, and the Pentagon. Invariably, strong Congressional oversight begins only after scandals become public. Part of the problem is that “inside information” is perceived as a perquisite of power that members of Congress do not want to risk losing. This is compounded by the filtering and political bias often applied to data before it goes to Senators and Representatives.

Efforts to reduce the burden of government are commendable, but some shortsighted budget-cutting moves will actually increase costs to taxpayers. In June 1995, for instance, the House Intelligence Committee voted to cap annual declassification spending by each intelligence agency to 2.5 million dollars, a minuscule budget compared to the billions spent to protect unnecessarily secret documents. As one analyst put it, this is “about enough to keep the lights on and write a couple of reports about what they would do if they had enough money to do it.”²⁹

Many Congressional deliberations themselves are unnecessarily secret. For example, most of the work on Senate Appropriations for military programs, including DOE nuclear weapons and environmental work, occurs in closed “markup”

sessions. In the opinion of at least one Senate staffer, this secrecy is intended solely to keep out the press and the public, since the vast majority of the information discussed is unclassified. Congress could remedy this situation through a simple rule change so that closed sessions would be limited to discussions of classified information.

Voters have ultimate oversight of Congress, but that power cannot be fully exercised without knowledge of how members of Congress respond to classified information. The consequences of weak oversight have included a trillion-dollar military buildup based on inaccurate estimates of Soviet economic and military strength. Billions of dollars were spent on weapons systems such as Star Wars, which was lobbied by the Reagan Administration and industry sponsors without full public disclosure and debate. Star Wars was a system many experts believed could not work and would not have benefitted the country had it worked.³⁰ Who in Congress was responsible for this gigantic oversight failure? Voters still have not been told how much information was given to which Committees of Congress.

Citizens concerned about secrecy should constantly bring the denial of information to the attention of their representatives, particularly when specific attempts to obtain information are thwarted. Citizens must insist that their representatives make rigorous inquiry about these issues and not simply refer inquiries to executive agencies, knowing the likelihood of a routine response.

The media could also contribute to greater Congressional accountability by a return to serious investigative journalism directed to unnecessary classification, the dismal record of Congressional oversight, and how both contribute to the continuing culture of secrecy with its enormous costs, inefficiencies, and scandals.

Balance Benefits and Risks

Several presidential Executive Orders have attempted to grapple with the costs and benefits of secrecy by specifying that the public interest in having the information should be somehow balanced against the national security interest in keeping it secret. The Atomic Energy Act does mention that competing interests should be balanced in classification decisions, but the AEA gives priority to military concerns and does not specify consistent classification standards. In addition, government agencies and employees have little expertise in calculating the long-term expected costs to society of their decisions. Bureaucratic interests, career incentives and penalties, and the fact that releasing information is irreversible, combine to make openness a risky option for classifiers.

.....
*Citizens
concerned
about
secrecy
should
constantly
bring the
denial of
information
to the
attention of
their
representa-
tives.*

.....
Declassification should be seen as a national investment with a high rate of return.

A more rational system should be developed to assess the risks and benefits of classification. Such a system would recognize the bureaucratic tendency toward secrecy and provide specific measures to prevent routine, presumptive classification. President Clinton's Executive Order 12958 will require reporting on the direct financial costs of secrecy-related policies, which today are not reliably known. Some effort should also be made to assess the indirect costs. Without a better understanding of these costs, it will be difficult to achieve a sound policy.

Improve Access to Public Information

Information obtained at taxpayer expense is often kept secret simply because it is not clearly identified or traceable. Agencies under pressure to reduce government spending may take a short-sighted view, guarding a document for years because it costs more to declassify than to maintain the status quo. One solution is to identify categories of information that can be put through less costly "bulk declassification." Declassification should be seen as a national investment with a high rate of return.

Much of the money that is now spent to protect secrets should be redirected to other endeavors, including declassification of documents and development of more rational, less costly policies. A relatively small investment could also put declassified documents into libraries and into computer-accessible forms. Unfortunately, Congress seems likely to cut the small budgets now available for informing citizens of their government's activities. The inevitable distrust, inefficiency, and scandals are sure to make this a false economy.

Coordinate Public Interests

There is a large latent constituency in favor of secrecy reform that includes journalists, historians, scientists, citizen groups, and organizations promoting government efficiency. For several reasons, this potentially potent force has not coalesced: 1) while excessive classification is at the root of many problems facing these groups, secrecy is a top priority for very few of them; 2) by definition, secret information is amorphous and difficult to work with; and 3) private funding sources generally have not fully recognized the importance of open information to the development of informed public policy and accountability.

A consistent effort should be made by philanthropists to bring together the organizations they fund in order to optimize their collective influence on secrecy issues. Massive funding and a wholesale reordering of goals and priorities are probably not necessary, but more attention should be given to coordinating the interests in secrecy reform that span a wide range of constituencies. Because information access is fundamental to informed public policy and accountability, support for research, education, and advocacy can have substantial leverage.

.....
*Information
access is
fundamental
to informed
public
policy and
accountability.*

Conclusion

Government agencies and individuals with the power to withhold information from the public can make decisions with far reaching effects on democracy and the economy. They must be held accountable for those decisions. The bureaucratic tendency toward excessive secrecy must be balanced through independent oversight, legislation that favors openness, and incentives that discourage over-classification. Initiatives by the Department of Energy since 1993 under the leadership of Secretary Hazel O'Leary are the first steps in the right direction. Those steps should be extended and given permanence.

Although the Cold War is over, the Oklahoma City bombing, as well as the prospect of nuclear bombs falling into the hands of terrorists, demonstrate that the world is still a dangerous place. Such actual and potential events might serve as arguments for avoiding secrecy reform or even for increasing covert government activities. However, the nuclear weapons production legacy is a classic example of the hazards of inadequate public accountability. The vast problem of environmental cleanup, the monumental accumulation of secret documents, and pervasive public distrust should serve as constant reminders of why the United States needs to escape from the culture of secrecy.

ENDNOTES

- 1 Conversation with Stephen I. Schwartz, Brookings Institution Guest Scholar and project director for forthcoming *Atomic Audit: What the U.S. Nuclear Arsenal Really Cost*.
- 2 *Baseline Environmental Management Report*, mid-range estimate, April, 1995.
- 3 Statement of Wolfgang Panofsky, National Academy of Sciences, at DOE Fundamental Review of Classification, Washington, DC, March 16, 1995.
- 4 *DOE This Month*, May 1995, at page 9, citing a late 1994 survey conducted by Washington State University.
- 5 Cited in Aftergood, Steven, *Secrecy & Government Bulletin*, Federation of American Scientists, June 1995.
- 6 *Ibid.*
- 7 Statement of DOE Under Secretary Joseph F. Salgado, quoted in *Science*, May 1, 1987, at 516.
- 8 Quist, Arvin, *Security Classification of Information, Vol. II. Principles for Classification of Information*, Oak Ridge Gaseous Diffusion Plant, for the U.S. Department of Energy.
- 9 Weisgall, Jonathan M., *Operation Crossroads: The Atomic Tests at Bikini Atoll*, Naval Institute Press, 1994, at 278.
- 10 *Secrecy & Government Bulletin*, February 1993.
- 11 Leary, Warren E., "U.S. Collected Human Tissue to Monitor Fallout," *The New York Times*, June 21, 1995.
- 12 Quist, at 9-11.
- 13 Trading With the Enemy Act of 1917, ch. 106, § 10(I), 40 Stat. 422.
- 14 Quist, at 26.
- 15 Stewart, I., *Organizing Scientific Research for War*, 1948, at 7.
- 16 Gelhorn, W., *Security, Loyalty, and Science*, Cornell University Press, 1950, at 9.
- 17 Smith, R. Jeffrey, "32,400 Workers Stockpiling U.S. Secrets," *The Washington Post*, May 15, 1994.
- 18 Rich, Ben R. and Leo Janos, *Skunk Works*, Little, Brown & Co., 1994, at 333.
- 19 Gray, P., ed., *Nuclear Weapons "Cleanup": Prospect Without Precedent*, Tides Foundation, January 1995.
- 20 Budiansky, Stephen, "Keeping research under wraps," *U.S. News & World Report*, March 22, 1993.
- 21 For examples, see Nordwall, Bruce D., "Many Civil Uses for Defense Technology," *Aviation Week & Space Technology*, November 8, 1993.
- 22 U.S. Atomic Energy Commission, *Fifth Semiannual Report*, January 1949, at 107.
- 23 *Report of the Defense Science Board Task Force on Secrecy*, at 11.
- 24 U.S. Atomic Energy Commission, *Eighth Semiannual Report*, July 1950, at 180.
- 25 *Secrecy & Government Bulletin*, November 1994.
- 26 House Government Operations Committee, *Strengthening the Export Licensing System*, H. Rep. No. 102-137, 102d Cong., 1st. Sess. 41 (1991).
- 27 *Closing the Circle on the Splitting of the Atom*, U.S. Dept. of Energy Office of Environmental Management, January 1995, at 81.
- 28 Executive Order No. 12958, Federal Register, Vol. 60, No. 76, April 20, 1995 at 19825 to 19843.
- 29 Conversation with Steven Aftergood, June 20, 1995.
- 30 Cahn, A.H., "Team B: The Trillion Dollar Experiment," *The Bulletin of the Atomic Scientists*, April 1993.

A project of
The Tides Foundation
1388 Sutter Street
San Francisco, CA 94109

**This report is available at \$2.00 per copy. Inquiries
accepted for bulk orders (more than 10 copies) at reduced
rates. Make payments to Tides/MPN. Write to:**

Military Production Network
1914 North 34th Street, Suite 407
Seattle, WA 98103
phone: 206-547-3175

*Reproduction of this report, in full or in part, is encouraged.
When doing so, please credit the Tides Foundation.*

July, 1995

Design and Production: Peter Gray
Editorial Assistance: Barbara Houchins