

NUCLEAR SECRETS AND THE CULTURE WARS

CLINTON'S ENERGY DEPARTMENT
CARES MORE ABOUT ENVIRONMENTAL
CORRECTNESS THAN NATIONAL SECURITY.
THE LATEST CHINESE SPY CASE IS JUST
A HINT OF THE DAMAGE IT HAS DONE.

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THE AMERICAN SPECTATOR
MAY 1999

Operation Desert Glow began like clockwork at 0900 on the morning of June 6, 1989, just outside Denver, Colorado, almost a hundred heavily armed federal agents, including seventy special agents from the Federal Bureau of Investigation, descended en masse upon the Rocky Flats Nuclear Weapons Plant.

FBI Agent Jon Lipsky, whose investigative work led to the creation of Operation Desert Glow, was taking no chances that morning. Rocky Flats' senior managers were gathered inside one of the hundred buildings sprawled over four hundred acres at the Department of Energy complex. The cover story the FBI gave them was that they should all assemble for a briefing on a threat from the environmental extremist group Earth First to carry out a terrorist attack on the plant, which produced plutonium triggers for America's atomic weapons arsenal.

The waiting executives were unaware that the agents who were already descending on them would thoroughly search the Rocky Flats facilities for eighteen days, guard it twenty-four hours a day, and gather more than 104 boxes of evidence. They didn't know that the innocuous-looking airplane that had flown over the complex on three separate nights six months earlier was operated by the FBI and crammed with infrared surveillance equipment.

Assistant U.S. Attorney Ken Fimberg would later recall how strange it seemed, sitting in the airplane next to Agent Lipsky during the nighttime surveillance flights, to be spying on a U.S. facility in Colorado. Fimberg, a self-described liberal Democrat and environmentalist who had clerked for the Environmental Defense Fund, was an ardent advocate of Lipsky's operation. More than anyone else in the federal government, the two thirty-something friends were responsible for the entire probe. Spurred on by Agent Lipsky, Fimberg would eventually take the fight for criminal prosecutions of those individuals ensnared by Desert Glow to the top levels of the Justice Department.

Operation Desert Glow had been authorized at the highest levels of government. FBI Director William S. Sessions, Attorney General Richard Thornburgh, Energy Secretary James D. Watkins, and EPA Administrator William K. Reilly had all sanctioned the massive federal raid on Rocky Flats. But this extraordinary cabinet-level attention was not due to suspicions of foreign espionage at the weapons production facility. The hundred federal agents were sent to Rocky Flats to search for criminal violations of environmental laws. The controversial case Lipsky and Fimberg built around Rocky Flats would consume years of investigative work and vital FBI manpower and still not be fully resolved eight years later, in 1997. U.S. Assistant Attorney Fimberg's grand jury returned criminal indictments against three Department of Energy weapons plant officials and five contract employees. Although Fimberg insisted on prosecuting, Rockwell

International -which managed Rocky Flats under contract to DOE - spared the individuals criminal trials by pleading guilty to ten counts of violating federal environmental laws. Rockwell was fined \$18.5 million, one of the largest environmental pollution fines in history, second only to the Exxon Valdez case.

The raids at Rocky Flats were deeply ironic. The FBI chose to launch the operation on the forty-fifth anniversary of D-Day's Normandy Invasion, almost as if to herald the end of the World War II Manhattan Project which spawned Rocky Flats and 57 other sites around the country involved in nuclear weapons production and research. Once sites reflecting the nation's scientific ability and advanced technological prowess, by 1989, with the destruction of the Berlin

Wall and the start of Velvet Revolutions across central Europe, the nuclear weapons complexes and national research labs came to be viewed in a new light. Our own government, giddy with the prospect of peace dividends and an end to the era of nuclear stalemate, started to see DOE's nuclear weapons plants as Cold War fossils, dangerous environmental polluters, or a combination of both.

Operation Desert Glow marked the beginning of a cultural shift in the U.S. government that would last through the Bush administration and accelerate under Clinton. Insiders say that this decade-long assault on the institutional values of the Department of Energy's nuclear weapons complex created a lax security atmosphere that resulted in the most ruinous loss of nuclear technology in any espionage case since the Rosenbergs gave the Soviets the atomic bomb.

STRANGE NEW PRIORITIES

Inside the U.S. intelligence community, the targeting of America's nuclear secrets is a well-established fact. During John Herrington's tenure as Energy secretary in Reagan's second term, Chinese efforts to infiltrate Energy Department facilities were constant and persistent. So were similar efforts by the Russians, the South Africans, and the Israelis.

Herrington knew how important cooperation between the FBI and DOE was in preventing foreign espionage. So when at the end of the Reagan administration Bush's incoming FBI director, William Sessions, wanted to meet for a briefing, Herrington readily agreed. Sessions, a former federal judge, knew little about DOE's national security mission. Herrington gave him an overview and urged Sessions to "get read into and briefed up" on the secret side of the department's activities. Sessions promised he would.

Sessions's tenure as FBI director was less than six months old at the time of Operation Desert Glow. Herrington was incredulous when he learned about the Rocky Flats raid. At a reception in California, the former cabinet member confronted the FBI director.

"Why are you sending the FBI out to Rocky Flats," Herrington asked in straight Marine Corps fashion, "when we have problems in this country with drugs, with crime, with espionage in Silicon Valley?"

"You know," Sessions answered defensively, "these are high priority cases, too."

Herrington still bristles at the government's prosecution of the weapons plant managers. "They put the pedal to the metal for us;" he says, referring to Congress's and the administration's orders to match the Brezhnev-era, Soviet build-up by accelerating weapons production in the eighties. "They were only doing what we told them to do."

The new management culture looked upon those same executives and scientists with a mixture of suspicion and disdain - as, at best, useless relics of the Cold War; and at worst, environmental criminals and pro-bomb fanatics. Security and morale in the nation's nuclear weapons infrastructure plummeted as a result.

Insiders say there is a direct correlation between the cultural shift at DOE and the degradation of security that permitted China to steal the secrets of one of the most advanced nuclear weapons in the U.S. arsenal, the W-88 warhead. To appreciate their perspective, it's important to understand what preceded Operation Desert Glow.

FROM TIGHT SECURITY TO NUCLEAR SHUTDOWNS

Contrary to Mr. Clinton's recent statements, security at the labs was extremely tight in the mid-eighties. In 1985, Energy Secretary Herrington initiated the most massive increase in security spending at DOE in two decades.

In the mid-eighties, Rep. John Dingell (D-Mich.), then chairman of the House Energy Committee, held oversight hearings probing whether terrorists could penetrate nuclear weapons sites. Dingell's hearings meant there was a good chance that Congress would give DOE funds to improve security.

Edward V. Badolato, Herrington's deputy assistant secretary for security affairs from 1985 through 1989, was told one of his first tasks at the Energy Department was to evaluate the security problems first-hand. He quickly pulled together a team of half-a-dozen specialists. Over the next thirty odd days, they surveyed all 58 facilities which make up the nation's nuclear weapons infrastructure.

Badolato's recommendations resulted in Operation Cerberus, a \$1.5-billion comprehensive security program. The overhaul spanned the gamut from instituting new physical fitness and marksmanship qualifications standards for plant security guards to high-technology safeguards. At Rocky Flats, four miles of barbed-wire fence line was replaced with PIDS, the Perimeter Intrusion Detection System, a state-of-the-art integrated microwave and multi-sensor system. "If a mouse went through that line," Badolato recalls, "we knew it!"

Operation Cerberus did more than tighten physical access to the weapons plants and nuclear labs. Fighting espionage was a key element. In his March 19 news conference, President Clinton asserted that the U. S. is not certain that China employs espionage to probe our nuclear secrets. But China's interest was no mystery in the mid-eighties.

"I can tell you as a fact that the Chinese visiting scientists would consistently ask, 'Do you have any Chinese-American scientists here?'" Badolato says. "And then they would want to meet these people, get their names. We knew what they were up to."

Prime opportunities for espionage occur during academic conferences and exchanges between scientific delegations, many of which take place overseas. Secrets can be imparted intentionally, and unintentionally, in the course of conferences. There is an inherent conflict between academic freedom and openness and the need for security to safeguard nuclear secrets, a conflict that can only be resolved through creative counter-intelligence. In addition to academic conferences, foreign delegations also visit U.S. facilities and meet our nuclear weapons researchers. The introductions sometimes open the way for efforts to recruit spies.

Herrington's response was to ask for FBI counter-intelligence agents to be detailed to the Energy Department to work closely with Badolato's teams. One result of the close cooperation between DOE and the FBI was Operation Tiger Trap, a sting to draw in and thwart foreign spies before they got past Operation Cerberus's sentinels. 'Me details remain classified, but Badolato confirms that Tiger Trap snared "a lot" of would-be nuclear spies.

The FBI also kept close tabs on scientists traveling overseas. In one case in the eighties, a man carrying classified information had second thoughts during his overseas flight. Unaware that he was under FBI surveillance, the suspect went to the airplane restroom, tore up the papers he was illicitly transporting, and flushed them down the toilet. Thinking he was safe, he returned to his seat. But when the plane landed the FBI retrieved the documents and built a case against him.

Counter-intelligence agents monitored the lifestyles of those with access to the most sensitive data. After one scientist purchased a sailboat and in other ways spent beyond his means, he was placed under FBI scrutiny. The vigilance was thorough. "The FBI was doing an excellent job," Badolato says.

But after Operation Desert Glow, the change in atmosphere was detectable.

Troy Wade, who was DOE's assistant secretary for defense programs in the late eighties, thinks that the security regime began to falter after the end of the Cold War. Admiral James Watkins, the former chief of naval operations who was appointed Energy secretary by President Bush, liberalized the scientific exchanges to a degree that Wade believes was imprudent.

"There have been legitimate scientific exchanges between the labs for years," he says. "Like with the British. But it wasn't until Watkins that foreign scientists were invited to join as fellows." Wade believes that Watkins was basically anti-nuclear weapons all along, and that the damage that he did was thus essentially deliberate. (Not so, responds another

nuclear insider, who describes Watkins as "your typical run of the mill techno-military bureaucrat," and attributes the damage he did to simple "stupidity.")

Early on his watch, the admiral shut down the Savannah River Productions Reactors -which had been a source of friction among DOE, environmentalists, and state officials in South Carolina for many years-and ordered some \$2 billion in improvements. The facility produced tritium, a vital component of every nuclear weapon's triggering mechanism.

Even after the massive spending and several years' halt in production, the critics weren't satisfied. So Watkins simply shut the plant down, thereby curtailing all tritium production for the U.S. nuclear arsenal. Tritium's radioactive half-life is seven-and-a-half years, so as a result of Watkin's decision, unless the U.S. reviews its tritium production, our nuclear weapons will cease to function sometime early in the next century.

By the end of the Bush administration, Watkins had fallen out of favor, particularly because of the seemingly open-ended financial commitments he was making with state governments to mitigate clean-up costs and environmental claims from nuclear weapons production. In the summer of 1992, President Bush decided that if he won a second term he would replace Watkins with Shelby Brewer, a former Navy officer and head of the nuclear power program under Reagan, who had made a confidential study of the DOE at the request of Bush's national security adviser, Brent Scowcroft.

NOTHING-TO-HIDE O'LEARY

After the 1992 election, matters only got worse. "The priorities were wrong," says former Secretary Herrington, "and when that was over you had a secretary of Energy put in there whose priorities were world travel, junketing with businessmen and CEOs, and a huge declassification effort including things that shouldn't have been declassified. And you had a culture at DOE that was anti-nuclear."

When she took over the department as Clinton's first energy secretary, Hazel O'Leary made clear that she thought DOE had too many secrets. She ordered an agency-wide review of files and documents for the purpose of releasing information. Her new team of political appointees, many drawn from the ranks of the anti-nuclear movement or extremist environmental groups, were eager to ferret out and disclose the department's secrets.

O'Leary chose Dan Riecher, from the Natural Resources Defense Council, to be her chief of staff and later named him assistant secretary. "That was like putting a fox in the henhouse," says Brewer, who points out that the activist hard-line NRDC had frequently filed nuisance suits against the department during the eighties. Riecher drew other environmental activists into the ranks of DOE's mid-level and junior political appointees.

Another senior O'Leary appointee, Terry Lash, was drawn from the Illinois state environmental protection agency. At DOE, Lash drew fire from Congress for misusing funds appropriated for nuclear reactor and safety research programs by reallocating the money for alternative and renewable energy grants.

One former high-ranking Energy Department security official is convinced that O'Leary's environmental activists have used their access to official information to funnel documents to environmental and anti-nuclear groups, ensuring a wave of litigation against future nuclear power or nuclear weapons programs. He believes that classified information has been compromised because of the political ideology of the anti-nuclear activists.

Meanwhile, those who think differently are liable to be punished for doing their jobs. Notra Trulock 111, DOE's special adviser for intelligence activities, is the man who put together the analysis that concluded that the Chinese had successfully built and tested a nuclear device like W-88. When the Clinton administration persisted in withholding the details from Capitol Hill, Trulock alerted Congress. In retaliation, Energy Secretary Bill Richardson tried to demote him, but so far has been blocked by the high profile of the case.

Since at least 1993, Trulock "appealed to the urgency of security," according to Del Bergen, a former high-ranking scientist at Los Alamos National Laboratory. Knowing the long history of Chinese efforts to steal U.S. nuclear secrets

and the lax state of security at the national labs, Trulock urged more vigilant counterintelligence programs. But inside DOE, his warnings went unheeded.

In December 1993, O'Leary declassified 204 previously-secret nuclear tests just before traveling to Russia. The secretary justified disclosing the secret tests in order, as she put it, to "expose the impact of the Cold War, both in terms of environmental health and safety impacts and also impacts on, if you will, the psyche of the nation." According to a Washington Post account from December 8, O'Leary's goal was to expose secrets from "an unresponsive bureaucracy wedded to a bomb-building culture."

Instead of heeding Trulock's warnings, O'Leary ordered the department's intelligence division to cease gathering information on anti-nuclear extremists and environmental radicals such as those responsible for the recent arson at a Vail, Colorado ski resort-who frequently impede shipments of nuclear materials. She forbade them even to keep newspaper clippings on the suspect groups.

O'Leary's actions were destructive to department morale. "The guys making the nuclear weapons felt like they were the bad guys, and they really got the short end of the stick," recalls Bergen.

Tight budgets and program cutbacks at the national labs after the Cold War left U.S. weapons scientists, like their Russian counterparts, wondering about their futures. The new disrepute of the nuclear weapons profession and the government investigations at Rocky Flats combined with the sudden declassification of long-guarded DOE secrets fostered the perception among nuclear lab employees that security no longer mattered. The situation virtually invited foreign intelligence services to redouble their efforts to recruit nuclear spies.

Trulock was not the only one to warn O'Leary to tighten security. As part of her declassification drive, the secretary had appointed a top-level committee to decide which secret DOE activities could be declassified. The end-product was something called the Fundamental Review, which determined that many of the documents and programs classified during the Cold War no longer required secrecy. But as the Fundamental Review progressed, there arose a strong belief among the committee that the department's vital secrets needed better safeguarding. "We should identify what really ought to be protected, and build the walls higher around it," explains Troy Wade, who served on the committee.

But while O'Leary was more than pleased to accept the committee's recommendations on declassification, she ignored its advice to improve security in coordination with other agencies including the FBI and the Defense Department.

One measure of the failure to respond can be found in a November 1997 General Accounting Office report. The GAO found that between 1994 and 1996 there were 5,472 visitors to the national labs from 22 countries on a U.S. government "sensitive" list. Of those visitors, only 892-a mere 16 percent received background checks before being permitted to enter the nuclear facilities.

This astonishing statistic becomes all the more difficult to grasp when viewed against the history of Chinese spying in the United States. The W-88 nuclear theft is not the first time China has raided U.S. facilities to advance its nuclear superpower ambitions.

CHINA'S "SIMPLE WAY"

James Lilley, a former CIA station chief in Peking and U.S. ambassador to China, divides China's nuclear espionage program into two phases. Phase one started in the late 1940's after the Communists took control.

K'ang Sheng, Mao Tse-tung's intelligence chief, built dossiers on Chinese students who had gone abroad in the thirties to study in France, Britain, and the United States. By the end of 1949, he had some 3,500 names in the files, including hundreds of well-placed scientists and engineers. K'ang's intelligence service played on the Asian cultural trait of extreme family loyalty to enlist spies. Scientists were urged to cooperate either to improve their relatives' prospects in the PRC, or to avoid retaliation against family members. Slogans were rife in Mao's China, and K'ang's slogan was "the right

way is the simple way" i.e., using Chinese living abroad to acquire sensitive intelligence for the fledgling People's Republic. (The story of China's early nuclear spying is told in Richard Deacon's 1974 book, A History of the Chinese Secret Service Ambassador Lilley confirms Deacon's account.)

One of K'ang's spies was Chi'en Hsue-Shen (Americans often called him G.S. Tsien), an aeronautical engineer with degrees from MIT and Caltech, who operated unsuspected for many years in the United States before being implicated as a spy. There was insufficient evidence to prosecute him, but he was stripped of his security clearance and eventually went back to China. The August 19, 1965 edition of the Far Eastern Economic Review identifies him as heading China's nuclear missile program with the help of another Chinese scientist, Chien Wei-chang, who had also worked at Caltech.

China exploded its first nuclear bomb in 1960 China's next nuclear feat came in 1965, when Chinese scientists perfected a missile-launched nuclear blast. In both instances, there is evidence that China used ethnic Chinese scientists' access to American research facilities to boost their nuclear know-how.

Ambassador Lilley says the second phase of China's espionage against the U.S. started in the seventies, when the PRC established a mission in the U.S. By 1973, after the historic Washington Peking rapprochement the Chinese, espionage program really took off." Their top intelligence goals were to gain access to nuclear technology and to disrupt Taiwan's relations with the U.S.

Chinese agents began to "spot, develop and recruit" spies in the Chinese-American community, Lilley says. "We know this from defectors and from documents. We know it."

"It's a massive operation," he says. "There are hundreds of cases of illicit acquisition of high technology."

Notra Trulock's assessment that China had the W-88 sent shock waves through the U.S. intelligence community. Until then, defense planners had dismissed China's nuclear arsenal as sixties-era technology, amounting to a small number of intercontinental ballistic missiles that could not support multiple warheads.

Now the strategic calculus has changed. According to the Office of Naval Intelligence, China is developing a nuclear submarine fleet that is expected to be operational early in the next century. China's ballistic missile submarines will be armed with 16 advanced JL-2 missiles capable of hitting parts of the United States while operating off China's coast. If the JL-2 missiles are armed with W-88 type multiple warheads, each Chinese submarine can carry up to 80 nuclear warheads.

China is also modernizing its land based missile forces. Sometime next year China is expected to begin deploying the DF-41 road-mobile ICBM, with a range Of 7,500 miles. These mobile missiles can also be adapted to carry W-88 type warheads. In addition, China is upgrading its silo-based nuclear missiles.

A new variant, the CSS-4, will have an 8,000 mile range. When China's new land and sea-based nuclear weapons platforms are operational, the W-88 design will make the PRC a full-fledged member of the nuclear club.

WHO HELPED WEN HO LEE?

China's sharing of missile technology with North Korea and nuclear technology with allies such as Pakistan raises entirely new security concerns for U.S. defense planners. A key question regarding the theft of the W-88 design is precisely what China acquired from its spies in the United States. Recent press reports have speculated that our shift from underground nuclear tests to computer-simulated explosions helped the Chinese learn the W-88 design. But interviews conducted for this article suggest that this is highly unlikely. It is equally unlikely that Wen Ho Lee was able to give the Chinese sufficient information to copy the W-88.

Even within Los Alamos's so-called X Division, where nuclear weapons are designed, secrets are not widely shared. A handful of people - perhaps only two or three at a time - has complete knowledge of both the physics and the engineering characteristics of a given weapon design. A wider group of scientists knows the theory of how the weapon works. Some of those have a lot of information about the physics; a different group knows a lot about the engineering. Given the division of knowledge, for one inside spy to assemble all the information needed to build a sophisticated, reliable nuclear bomb, "he would have to go to several different places," says Bergen.

Wen Ho Lee had access to the hydrodynamic codes and subcodes at the laboratory. General discussion with other academicians could have augmented his knowledge beyond his narrow work specialization. With an understanding of the codes, experts say that it is theoretically possible to reverse-engineer in order to arrive at the design of the nuclear device. And Bergen says it would have been easy to give a foreign intelligence agency access to the codes: "all you do is download it onto a computer disk there was nothing in place that prevented people from walking out with floppy disks in their briefcase."

But to have value to a foreign intelligence service, the codes need to be explained in detail. That takes at least a day or two, and exposes the spy to further risks. Maloof's charges were confirmed. Even then, fabricating a workable nuclear device like the W-88 is a significant engineering achievement requiring advanced progress on PRC Military capabilities, technology -technology to which Wen Ho Lee did not have access. The simplest explanation is that China's nuclear spying probably extends beyond anything that Wen Ho Lee is alleged to have done.

"The evidence is that [Chinese agents] were talking to many people," says Ambassador Lilley. "We don't know if there's a mole in Los Alamos. That it is the target of their activity, that we know."

Clinton has asked former Senator Warren Rudman, head of the President's Foreign Intelligence Advisory Board, to make a full assessment of the damage from Chinese spying. CIA Director George Tenet has tasked retired Navy Admiral David Jeremiah with leading the agency's independent review. The CIA's internal review will be headed by Robert Walpole, national intelligence officer for strategic and nuclear programs for the National Intelligence Council.

Intelligence insiders expect the publicly disclosed assessments to be a whitewash. Citing the administration's strenuous efforts to suppress publication of Rep. Chris Cox's committee report on Chinese espionage, they expect the White House to try to keep the details of the W88 theft classified.

It is unlikely that any of these review boards will come up with the solution proposed by Shelby Brewer in Senate hearings two years ago. Brewer, who is now with the nuclear power investment holding company Brewer-Hanzlik Nuclear Partners, testified that the national security functions of the Energy Department should be split off and given to the Defense Department. Former Defense Secretary Caspar Weinberger appeared on the same panel and seconded Brewer's view.

If the culture wars truly contributed to the lax security that permitted the most significant loss of nuclear secrets since the Rosenbergs, it would be only logical to shift the DOE's nuclear weapons function to a more hospitable culture. Such a move would set the stage for eliminating the department's Cabinet status. The ultimate casualty of the W-88 espionage scandal may turn out to be the Department of Energy itself.