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# TRITIUM AND THE TIMES

How the Nuclear Weapons-Production  
Scandal Became a National Story

by

William Lanouette

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## PREFACE

For over a year, the Joan Shorenstein Barone Center on the Press, Politics and Public Policy has been publishing and distributing Discussion Papers. These have been essays on interesting experiences and analyses relating to press/politics, from Dayton Duncan's recollections of his days as press spokesman for the Dukakis presidential campaign in 1988 to Sissela Bok's thought-provoking essay on the collapse of political ethics in America.

Now, with this study, the JSB Center launches a new series of Research Papers, the distinction being that a Research Paper is based primarily upon . . . research, rather than personal experience. In this case, William Lanouette, Washington correspondent for *The Bulletin of Atomic Scientists* and a Fellow at the Joan Shorenstein Barone Center on the Press, Politics and Public Policy during the spring semester of the 1988-89 academic year, has written an exceptionally important case study on the ways in which the press and disgruntled elements in government collaborated, in a sense, to create a

public policy. The study focuses on a decade-long nationwide scandal on nuclear weapons production.

Dr. Lanouette surveyed press coverage beginning with 1980. Regional newspapers and local television stations, occasionally stories in specialized publications, such as *New Scientist* or *Technology Review*, did focus on health, safety and environmental problems, but the scandal did not become a nationwide story until October 1988, when, not coincidentally, *The New York Times* began a sustained series of front-page articles at roughly the same time that the Energy Department used leaks to battle for increased funding. Suddenly, what had been a "local" story blossomed into a national crisis, not to mention a political embarrassment.

"Tritium and *The Times*" is Bill Lanouette's work. He deserves all the credit. The JSB Center was pleased to be able to provide the proper kind of academic environment for his research into press, politics and public policy.

**Marvin Kalb**  
**Edward R. Murrow Professor**  
**Director, Joan Shorenstein**  
**Barone Center on the Press,**  
**Politics and Public Policy**

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## INTRODUCTION

For more than a decade, pieces of a nationwide scandal had surfaced from the vast and sprawling system that produces America's nuclear weapons; as health, safety, and environmental stories at the 17 facilities in 12 states. For years, accounts appeared in the regional and local newspapers, among them *The Seattle Post-Intelligencer*, *The Seattle Times*, *The Spokane Spokesman-Review*, *The Portland Oregonian*, *The [Salt Lake City] Desert News*, *The Rocky Mountain News*, *The Denver Post*, *The Chicago Sun-Times*, *The Columbia [South Carolina] State and Record*, *The Charlotte [North Carolina] Observer*, and *The Washington Star*. And occasionally, feature articles were printed in specialized publications such as *Science* magazine, *New Scientist*, *Technology Review*, and *The Bulletin of the Atomic Scientists*. Reporters on the "defense" and "science" beats for national publications also noted the production system's vital role in maintaining the U.S. strategic nuclear deterrent. But with few exceptions, the weapons-making system itself was never considered an important national news story.

This weapons-making system's costs were buried in the Energy Department's budget; its policies concerned a metallurgy and chemistry whose details were secret; its governance was obscured by military censors; and its dangers were only seen or sensed by workers and residents in remote areas — many of whom depended on these facilities for their livelihood.

Then, in October 1988, the problems that had developed in secret over decades suddenly gained the full attention of the national press: as front-page features in the country's leading newspapers, as cover stories in the weekly news magazines, and as leading items on the commercial television news programs.

How and why this long-acknowledged but ignored topic became a "national" story when it did demonstrates the ways in which public-policy issues are shaped and strengthened by politicians and the press. In the case at hand, the nuclear-weapons production story developed through a combination of factors: surprising leaks to the press from a federal agency split by policy feuds, persistent congressional staff investigations and initiatives, related concerns about safety in civilian nuclear power plants, and a respected national newspaper's ambitious "crusade."

This research paper examines how the story broke, and explores what new role the press plays in the future of U.S. nuclear-weapons policy. More broadly, this paper raises questions about how news is made in the murky world where science, politics, and national security collide.

Research on this paper was begun when I was a Fellow at the Joan Shorenstein Barone Center on the Press, Politics and Public Policy. The views in this paper are my own, however, and do not necessarily reflect those of the John F. Kennedy School of Government or Harvard University.

## 1.

### HOW THE STORY BROKE.

At 2 p.m. on September 28, 1988, the House Armed Services Subcommittee on Procurement and Military Nuclear Systems began a public hearing on the restart of a nuclear reactor at the U.S. Government's Savannah River Plant near Aiken, South Carolina. This reactor had special significance to the Pentagon — and to the Department of Energy, which manufactures nuclear weapons — because until the previous month, when it had been shut down after an operating mishap, this was the military's only source of tritium in the United States.

Tritium is a radioactive, gaseous form of heavy hydrogen that is used to boost the explosive force in H-bombs. Because the chief ingredient in nuclear weapons — plutonium — is a very heavy metal, weapons designers can use tritium, a gas, to make their warheads both lighter and more powerful. In short, the more light tritium they can use, the less heavy plutonium they need to achieve the same explosive force. Tritium allows bomb designers to make lighter and smaller thermonuclear weapons: in some cases, one-third to one-tenth the weight of those made without it, yet with a comparable explosive force. The United States has about 25,000 warheads in its nuclear arsenal, of which about 22,000 contain tritium.

Unlike plutonium, whose radioactivity decays over hundreds of centuries, tritium's decays quickly: at a rate of 5.5 percent a year.<sup>1</sup> As a result, new tritium must be added to nuclear warheads every few years to keep them fully operational. The amounts and intervals for adding tritium are classified information, although many details in the technical literature have been widely reported since the weapons-production scandal broke in October 1988.

Few reporters sat at the press table for the Armed Services Subcommittee hearings that September afternoon as Troy E. Wade II, acting Assistant Energy Secretary for Defense Programs, said that the P-Reactor at the Savannah River Plant had been shut down in April for repairs and that when re-started on August 7, a rapid temperature and pressure buildup had forced another

shutdown. "We must restart the reactor," Wade said. "Our tritium supply requires replenishment [of warheads] to assure national security and we are concerned about the sufficiency of the [tritium] inventory in the absence of prompt restart" of the reactor. Wade estimated that the P-Reactor could restart and resume making tritium in 30 to 45 days.<sup>2</sup> No national publication or broadcast outlet covered the hearing. It was, by all accounts, an arcane and insignificant event.

Two days later, something quite different happened on Capitol Hill as a joint House-Senate hearing took up the same topic. The co-chairmen at this second session, Rep. Mike Synar (D-Oklahoma) and Sen. John Glenn (D-Ohio), released a memorandum that had been written in 1985 by an engineer with E.I. du Pont de Nemours & Co. Du Pont was the contractor that had operated the Savannah River Plant since it opened in 1952, and this memo offered the first public details of 30 serious accidents at the site's nuclear reactors. Some of the events reported in the memo had been as serious as the widely-publicized 1979 accident at the Three Mile Island power-plant in Pennsylvania, and involved the melting of radioactive fuel. Some led to significant releases of radioactivity into the atmosphere and the ground water. Some had been rumored, even mentioned obliquely in local press accounts of operations at the Savannah River Plant. But military secrecy and employee loyalty had kept these details from the press and public for more than three decades.

Many reporters at the press table for the second hearing on September 30 had been alerted by the committees' staff that the Du Pont memo would be released and would contain important revelations. But the memo alone still did not make the subject of tritium production — and the weapons-making system behind it — into a national news story. Among national publications the next day, only The New York Times reported the hearings on page one. (Newspapers in South Carolina featured the story, as they had for years, but the only other national publication to report it was The Los Angeles Times, which carried an Associated Press dispatch on page I 19.)

In fact, it took a dedicated effort by writers and editors at The New York Times to focus national attention on the weapons-production story: first by running front-page articles of their own; second, by attracting other news media to cover the story; and third, by weaving together old and new information about the 12-state complex and its problems. The New York Times had prepared to commit manpower and space to the military's atom problems even before the Du Pont memo's

release, but that document provided both the "news" (30 unreported accidents) and the "peg" (the congressional hearing) on which to hang more thorough coverage. At last, a formerly local and arcane topic began to gain national press attention.

Curiously, the spark for *The New York Times* to take the weapons-production story seriously came not from the defense or science beats, but from an agricultural reporter who covered the Midwest and West from the paper's Washington DC bureau. Keith Schneider had found in the new National Editor, Soma Golden, a colleague who shared his outrage at the environmental and health hazards the Energy Department facilities were causing throughout the country, so that by the time of the Synar-Glenn hearings in late September 1988, Schneider and three *Times* colleagues were at work on a four-part series about the disintegrating nuclear-weapons system.

By contrast, when a staff member for Senator Glenn's committee had alerted *The Washington Post* to the forthcoming Du Pont memo, his tip led nowhere. Whoever took the call at the *Post* saw nothing newsworthy in it, and the staff writer who might have responded, environmental reporter Cass Peterson, was then in Houston covering NASA's space-shuttle launch. Peterson had written about problems at the various weapons plants for years, and in August had broken the story about the P-reactor accident at Savannah River that had finally halted all U.S. tritium production. But editors at the *Post* saw no reason to cover the hearing, and later considered the wire-service account unimportant and not worth reprinting.<sup>3</sup>

On October 1, 1988, the day after the Synar-Glenn hearing, *The New York Times* gave the Du Pont memo page-one coverage. And for the first eleven days that month, the *Times* alone among national publications featured front-page articles on the weapons-production scandal. Although some papers did carry brief news items from the wire services, no other national paper carried its own report on the story until October 6, the day the *Times* ran two front-page articles and a third inside.

Back from Houston, Cass Peterson produced a page-three piece on the Du Pont memo in the October 6 *Washington Post*. "Report Cites Hazard in Arms Reactor Mechanism, Operator Attitude," was her paper's first coverage of the Energy Department's revelations.<sup>4</sup> From then on, Peterson reported events in the weapons-production system, as she had for years, but also continued to cover unrelated environmental issues. The *Los*

*Angeles Times* did not run a staff-written story on the system until October 11, when John M. Broder reported on lax security at the weapons laboratories. Science writer Robert Gillette teamed up with Broder for the paper's first page-one story, on October 12, about the Energy Department's admissions of past mistakes. Like Peterson, Gillette had covered the topic for years and saw little new in many of the stories coming from *The New York Times*. Still, he sensed a pressure from his editors to "match" and to "follow-up" some *New York Times* stories, a pressure also felt by regional and local reporters who had covered the topic for years.<sup>5</sup>

By this time, however, *The New York Times* was onto something much bigger: a series of the sort that Golden had long considered the essence of investigative journalism, one that combined personal tragedy with political intrigue and secrecy. "It was just the kind of story I was waiting for," she said.<sup>6</sup> "It was fun. It was a great story; you could just feel it. We had a new way to portray a story that had been nagging a lot of people. There is a moment there, like riding a wave, so we kept going."<sup>7</sup> (For details of editorial decisions at the *Times*, see section 5.)

With *The New York Times* clearly in the lead, other national publications eventually picked up the story. On October 7 Paulette Thomas reported in *The Wall Street Journal* that "Required Tests Go Undone on Reactors Used in Production of Nuclear Weapons," a story that appeared on page B7. At the *Journal*, environmental writer Barbara Rosewicz was on leave when the Du Pont memo was released. Also on the 7th, *The Christian Science Monitor's* Alf Slewiers wrote "Weapons plants: not always safety first. Energy Department debates solutions," a page 3 story.

From October to December 1988, *The Washington Post* carried 21 articles, 7 on the front page. At *The Los Angeles Times* 46 articles appeared, 7 on the front page; at *The Wall Street Journal*, 21 articles appeared, 7 on the front page; and at *The Christian Science Monitor*, 5. (In this tally, most of the items in *The Los Angeles Times* and *The Wall Street Journal* were one-paragraph news briefs, not stories by staff reporters; in the *Times* appearing in a page-two summary, in the *Journal* appearing in the page-one "What's News" column.)

None of these papers matched the constant and aggressive coverage by *The New York Times*, which during October ran 20 front-page stories about the weapons-production system, and another 16 inside. Schneider produced 18 of these articles; the rest were written by energy reporter

## National Newspaper Articles Published During the First Week of October 1988

**October 1, 1988**

**Accidents at a U.S. Nuclear Plant Were Kept Secret Up to 31 Years. Energy Dept. Asserts It Didn't Know of Events at Weapon Fuel Site**

NYT Washington Sept. 30  
Keith Schneider pp. 1-7.

**U.S. Discloses Accident History at Nuclear Plant**  
LAT Washington (AP) 1 p. 19.

**October 3, 1988**

**Du Pont Rejects Contentions It Hid Reactor Problems. Monthly Reports Cited. Senator Asserts Information on 30 Plant Accidents Was Withheld From Aides**

NYT Washington Oct. 2  
Keith Schneider pp. 1-A24.

**October 4, 1988**

**Energy Dept. Says It Kept Secret Mishaps at Nuclear Weapon Plant. Admission Exonerates Du Pont, Operator of Site**

NYT Washington Oct. 4  
Keith Schneider pp. 1-A25.

*The Department of Energy acknowledged that it had received reports from the Du Pont Co. about nuclear reactor accidents at the Savannah River Plant, although department officials had said Friday they hadn't known about them. LAT Brief 1 p. 2.*

**October 5, 1988**

**Ex-Nuclear Aides Deny Being Told of Plant Mishaps. Security Concern Cited. Former A.E.C. Officials Hint That Colleagues Withheld Reports on Accidents**

NYT Washington Oct. 4  
Keith Schneider pp. 1-A26.

**October 6, 1988**

**Chronic Failures At Atomic Plant Disclosed by U.S. High Rate of Shutdowns. Study Describes Difficulties at Nuclear Arms Complex in South Carolina**

NYT Washington Oct. 5  
Keith Schneider pp. 1-B19.

**Memo Says Error Almost Caused Catastrophe at U.S. Nuclear Plant**  
NYT Aiken, SC Oct. 5  
Matthew L. Wald pp. 1-B19

**Excerpts From Aide's Memo**  
NYT Aiken, SC Oct. 5  
Memo dated July 29, 1981 p. B19.

**Report Cites Hazard in Arms Reactor Mechanism, Operator Attitude**

WP Cass Peterson p. 3.

**New Safety Rules Delayed a Month at Nuclear Plant**

LAT Washington (AP) 1 p. 18.

*New safety notification procedures for the Energy Department's troubled Savannah River Plant in South Carolina, which makes nuclear weapons material, were lost in 'paper work' for a month last summer, a spokeswoman said. During the delay, the plant operator waited 40 hours before notifying DOE of a small power surge that caused the shutdown of one of three atomic reactors at the plant, said the spokeswoman, Becky Craft. LAT Brief 1 p. 2.*

**October 7, 1988**

**Nuclear Inquiry is ordered. The Government plans an investigation of plutonium processing at the Savannah River plant.**

Page A18. NYT (Inside p. A1.)

**Inquiry Ordered at Nuclear Arms Site**  
NYT Washington Oct. 6  
Keith Schneider p. A18.

**Radioactive Leak at Plant**  
NYT Aiken, SC Oct. 6  
Special to the NYT p. A18.

**Required Tests Go Undone on Reactors Used in Production of Nuclear Weapons**

WSJ Washington nd  
Paulette Thomas p.B7.

**Weapons plants: not always safety first. Energy Department debates solutions**  
CSM Chicago Alf Slewars pp. 3-4.

Citations give headline and sub-heads, the publication's initials, dateline, date or no date, the author(s), and page number(s). Initials are NYT for The New York Times, WP for The Washington Post, LAT for The Los Angeles Times, WSJ for The Wall Street Journal, and CSM for The Christian Science Monitor. Inside refers to page one teasers, and briefs are small items prominently featured.

Matthew L. Wald, defense reporter Michael R. Gordon, metropolitan reporter Fox Butterfield, and labor reporter Kenneth B. Noble.

In November, medical reporter Harold M. Schmeck, Jr., expanded for "Science Times" a piece that the Times had run in February, on tests the National Institutes of Health were conducting for adverse effects around nuclear plants. The Times ran 21 weapons-production pieces in November, four of them on the front page, 7 by Schneider. In December, the Times ran 32 pieces, 15 on the front page, 11 by Schneider.

From October 1, when it broke the Du Pont memo story, until the end of December 1988, The New York Times ran more than 85 articles about the weapons-production complex, 39 of them on the front page. Some were based on interviews with Energy Department officials, some on congressional hearings, and some on documents obtained under the Freedom of Information Act. But many Times stories were also "recycled," Schneider has said, from pieces printed years before and from work for a four-part series that was in preparation before the Du Pont memo was released.<sup>8</sup> By late October, it was clear that the Times had begun something rare in modern journalism: a "crusade." As one Times reporter recounted, "Our editors haven't been this psyched about a story since the Pentagon Papers."<sup>9</sup>

### **Why October 1988?**

This story, which ranged over 17 remote sites in 12 states and had been covered for years only by local, regional, and specialized publications, finally became national news in October 1988 for several related reasons, among them: the federal budget deficit; new national security concerns; and a fresh, crusading spirit among a few editors and writers at The New York Times.

Beginning in the spring of 1988, the Energy Department was telling its oversight committees in Congress that the cost of maintaining and modernizing the nation's nuclear weapons production system would far exceed earlier estimates. This was unwelcome news at the White House during an election year, with the federal deficit an issue dividing Democrats and Republicans, so these budget increases had serious national significance. Then, when mistakes at the Savannah River Plant halted all tritium production in August, breaking a vital link in the nationwide chain of isolated weapons-production sites, the whole Energy Department complex was finally seen as a national system; like links in a chain, a break anywhere made the other parts useless. Now, for the first time since the atomic age began in 1945,

the United States was incapable of making or maintaining nuclear warheads. The national-security implications of this were suddenly obvious. For, when reactors ceased to manufacture tritium, the perishable gas needed in most thermonuclear warheads, this called into question the current and future size of the nuclear arsenal and raised anew implications for continued US-Soviet progress in nuclear-disarmament talks.

The Times was the first national publication to highlight the tritium-production issue, in an October 9 front-page article by Schneider and military reporter Michael R. Gordon, "Reactor Shutdown Could Impede Nuclear Deterrent, Officials Say." Their article quoted Robert B. Barker, Assistant to the Secretary of Defense for Atomic Energy, as saying that if the Savannah River reactors were not operating "soon" then "there will be very serious consequences for our ability to maintain our nuclear deterrent." Keeping the reactors out of service, he said, "is tantamount to unilateral nuclear disarmament." With this, The New York Times had further justification for its crusade by questioning the validity of the nation's nuclear arsenal.

This article prompted Energy Department officials to confront the tritium-shortage question directly; not an easy issue, for tritium production (and its use in nuclear weapons) is a top-secret subject. However, fear of a tritium shortage provided the department with new justification for boosting its weapons-production budget. Two days after the Schneider-Gordon article appeared, Under Secretary of Energy Joseph F. Salgado held a press conference to announce plans for re-starting a tritium-production reactor at Savannah River by January 1989, and during questions, the Associated Press reported that day, he gave "assurances that plutonium and tritium supplies are adequate to ensure that existing nuclear weapons would not degrade or be cannibalized to assure a continued strategic deterrent."

In a front-page Los Angeles Times article the next day, Robert Gillette and John M. Broder also reported that the stockpile could be maintained. Their article — "Officials Admit Need for A-Arms Shake-Up. Cite 'Past Sins' in Maintenance, Management of Plants but Defend Status of Nuclear Stockpile" — gave front-page attention to the weapons-system scandal, although the paper's coverage of this whole topic was generally restrained, reflecting the judgment by Gillette — a veteran science writer — that there was little news in the many details that Schneider and his colleagues were reporting. Gillette noted on October 18 that "federal officials and independent ana-

lysts" considered there were sufficient tritium supplies "to meet current defense needs at least until 1990..."

For The Washington Post, Cass Peterson reported in an October 12 front-page piece that "delay in restarting Savannah River's reactors will have no effect on the nation's nuclear deterrent." And on October 20, in "Tritium Termed Adequate For U.S. Nuclear Arsenal," she cited physicist Thomas B. Cochran of the Natural Resources Defense Council as questioning the Energy Department's plans for a prompt Savannah River restart.

But at The New York Times, Schneider drew another conclusion from Salgado's October 11 press conference. Citing unnamed "Energy Department officials" and not Salgado, Schneider reported on October 12 that "unless the reactors at Savannah River are restarted by next summer, the United States could be forced to begin deactivating warheads to recover tritium for use in higher priority weapons." This view was later tempered in the Times by unnamed "Reagan Administration officials" whom Michael R. Gordon quoted in an October 24 front-page article, "Stretching Gas for Nuclear Arms Studied." In this article, Gordon wrote: "The Pentagon and the Energy Department have begun studying new ways to extend the tritium supply, should the startup of the nation's military reactors, now shut down because of safety considerations, be delayed by political pressure, legal challenges or unforeseen technical problems."

Behind these differences over tritium between The New York Times and other national newspapers are two related questions: Does The New York Times automatically set the agenda for other news media? And, Why did the Times alone advance the argument that a tritium shortage would soon pose serious national-security problems?

In this case The New York Times did set the news agenda for others, just as it has in many past instances.<sup>10</sup> As Los Angeles Times media writer David Shaw has noted, "A story on page one of The New York Times almost automatically ensures further attention from other media....For many media executives, everywhere, page one of the Times is the barometer of what's truly important in the world." Based on interviews with more than 100 reporters, editors, and news broadcasters, Shaw concluded in a three-part series that it was a rare exception when a Times front-page story was not followed, at least for a while.

In the case of the weapons-production story, the Times's front-page barrage from October to December prompted a curious reversal. Reporters

for some regional papers, who had been covering the weapons-production sites as local stories for some time, were now being asked by their editors to follow-up the pieces appearing in the Times. Many of these reporters saw nothing new in the Times's coverage, and resented its influence, yet felt obliged to follow the story because of its uncommon national attention.<sup>11</sup>

Why the Times considered the tritium shortage a serious national-security issue is less clear. Matthew L. Wald, the paper's energy writer, had identified the tritium-production problem as early as December 1986, when he reported the shutdown of plutonium-production reactors at the federal Hanford Reservation in Washington state and at the Savannah River Plant. At the time, Wald noted that an unfinished civilian reactor at Hanford might be converted to make tritium.<sup>12</sup> Wald was even more explicit by November 1987, in "Turning Point Nears In Production of Fuel For Hydrogen Bombs. U.S. must decide where, or whether, to produce more tritium."<sup>13</sup> And independently, in September 1988 the Times editorial-page staff had adopted Pentagon consultant Frank J. Gaffney, Jr.'s argument (first publicized in a Wall Street Journal op-ed piece on March 11, 1988) that a breakdown in the weapons-production system threatens "incipient structural nuclear disarmament."<sup>14</sup> But clearly, the driving force within the Times staff was Keith Schneider, who viewed the importance of tritium as a way to justify many of his articles.<sup>15</sup>

## 2.

### PIECES OF THE PUZZLE.

The weapons-production story that gained national press attention, beginning in October 1988, combined what had been four separate but related topics at distant sites, each with its own sources, motives, and timetables.

- At the Savannah River Plant near Aiken, South Carolina, safety and environmental problems had forced the nation's last operating nuclear reactors for producing plutonium and tritium to shut down.

- At the Hanford Reservation near Richland, Washington, a reactor used to produce plutonium for nuclear weapons had been closed temporarily after the 1986 accident at Chernobyl. Then an Energy Department review panel recommended that this reactor be shut permanently. Separately, the department's interest in storing military nuclear waste at the site had led to the release of data that allowed state officials and local citizens to

learn in new detail about long-term environmental and safety problems, some dating to the 1940s and 1950s. For example, an environmental group in Spokane had used the Freedom of Information Act to document that radioactive iodine had been released in huge quantities at the Hanford reservation during 1949.<sup>16</sup>

- The Rocky Flats Plant near the Denver suburb of Broomfield, Colorado, assembles and tests components for nuclear weapons, and is the only maker of bomb triggers. A plutonium fire in 1957 had contaminated land around the plant, and tritium had leaked into local drinking-water supplies in the 1970s. But the incident that gained national attention in October 1988, and led to a production halt at the facility, was the minor contamination of three workers in late September.

- The Feed Materials Production Center near Fernald, Ohio, converts uranium from gaseous to metallic form for use in reactors that produce weapons-grade materials. The plant had been the subject of state and citizens' law suits for years, principally over releases of uranium to the environment. Plant employees were also on strike for better working and safety conditions when the weapons-plant scandal broke in October 1988.

What yoked these four stories together were the new angles of the budget deficit and the perceived threat to national security posed by interrupted tritium supplies. These separate pieces gained further attention in the press because of two other related developments: concern about safety within the weapons-production system following reactor accidents at Three Mile Island and Chernobyl; and policy feuds within the Department of Energy that were prompted, in part, by these two accidents.

Numerous safety concerns had been raised around the weapons-production plants for several decades, but first gained attention in Washington after the 1979 accident at the commercial nuclear-power plant at Three Mile Island in Pennsylvania. Following that accident, President Reagan's first Energy Secretary, James B. Edwards, convened a panel to study all reactors operated by his department, including the nuclear-weapons production reactors at Hanford and Savannah River. Headed by John W. Crawford, Jr., the Deputy Assistant Secretary for Nuclear Energy, the panel concluded in 1981 that safety problems existed at all 35 federal reactors, and that "the department [had] not applied many of the lessons learned from the Three Mile Island reactor accident."<sup>17</sup>

Secretary Edwards ignored the Crawford panel's recommended reforms, however, because his department's regional offices assured him that

safety improvements were unnecessary.<sup>18</sup> Instead, the Energy Department strove to meet the Reagan Administration's goals for increased tritium production, and in the process strained the 40-year-old system to its breaking point. (Weapons modernization throughout the 1980s meant that more tritium was required to maintain the strategic stockpile, even though the number of warheads was actually decreasing.)

A policy feud within the Energy Department arose after the second outside event that affected weapons production, the Soviet nuclear-plant accident at Chernobyl in 1986. Following that accident, an independent panel from the National Academy of Sciences studied U.S. government reactors and concluded that to assure its safety a plutonium-production reactor at Hanford should be shut down and repaired. The panel also recommended that reactors making tritium at Savannah River should be operated at reduced power levels. President Reagan's third Energy Secretary, John S. Herrington, employed safety specialists who raised direct conflicts with the regional administrators responsible for maintaining high production levels. The Energy Department is a secretive agency by tradition, as was its predecessor the Atomic Energy Commission. More than half its budget is military and, hence, secret, so the struggle between greater safety and continued warhead production remained behind closed doors — until it was useful to make it public. Then, early in 1988, with critical budget reviews at hand and the federal deficit growing, Energy Department officials began to make their case for more money through selective leaks to Congress and the press.

"There was a war going on inside the agency," said Jonathan Landman, a New York Times editor who coordinated the paper's extensive weapons-production coverage.<sup>19</sup> For, as facilities at Savannah River, Hanford, Rocky Flats, and Fernald disintegrated in early 1988, the leaks from the Energy Department served to prepare the White House, the Office of Management and Budget, and the Congress for the soaring cost estimated to maintain and modernize the whole weapons-production system.

In retrospect, while the Energy Department and The New York Times would be most influential in making the weapons-plant scandal into a national story, the basic data about the system were already at hand in two publications. Together they gave any interested journalist all the factual information needed to see the story as a whole and in its particulars. The Natural Resources Defense Council had produced, by 1987, three volumes in its "Nuclear Weapons Data-

book." Volume III presented detailed diagrams and descriptions of production schedules and facilities at each step in the weapons-production system. At the same time, Robert Del Tredici's *At Work in the Fields of the Bomb*, a 1987 collection of dramatic photographs and interviews published by Harper & Row, detailed the safety and environmental problems encountered by people involved in making nuclear weapons.

### 3.

#### THE GLENN COMMITTEE AND THE GAO.

Senator John Glenn, whose committee co-sponsored the September 1988 hearing at which the Du Pont memo was released, had worked for at least a decade to uncover and correct safety and environmental problems in the weapons-production system. Glenn's staff had followed the deteriorating state of the military atom since 1979, and had commissioned several studies by Congress's investigative agency, the General Accounting Office (GAO). His staff had also organized more than a dozen public hearings on the weapons-production complex, so the subject could have been identified by enterprising reporters long before *The New York Times* highlighted the scandal.

But, as is often the case with technical and isolated topics, the investigations seemed too arcane for most Washington journalists; quality-control and safety problems at remote plants in Washington state, Colorado, Ohio, and South Carolina did not seem to warrant national press attention.

The GAO reports themselves were detailed and well-documented, but lacked the flair and focus that might attract political and general-assignment reporters. Drafted with tentative conclusions and soporific titles, they recounted problems that only a specialist or an aggressive investigative reporter could recognize. For example, two typical GAO titles in this field are "Environment, Safety, and Health: Environment and Workers Could Be Better Protected at Ohio Defense Plants" and "Ineffective Management and Oversight of DOE's P-reactor at Savannah River, S.C., raises Safety Concern." Hardly the stuff of scandal.

Over time the GAO reports presented a detailed view of the weapons-production system and its persistent mismanagement. The agency produced more than 21 reports on related weapons-plant subjects since 1980, 10 of them in 1988. But on the Glenn committee's shelves these reports were useless to reporters. It took a new force to

bring them to light. That force was Robert Alvarez, an environmental activist who had recently joined the staff of Glenn's Governmental Affairs Committee. For years Alvarez had uncovered problems in the Energy Department's weapons program, working as director of the nuclear project at the crusading, nonprofit Environmental Policy Institute in Washington. Now he was researching the same ground from within Congress, using the techniques of an outside activist. Alvarez knew how reporters worked, how they thought, and whenever he found new information that might make a story he reached for the telephone.

### 4.

#### ENERGY DEPARTMENT DISCLOSURES: "A PRESS SECRETARY'S DREAM."

The Energy Department played a leading and somewhat curious role in the 1988 press coverage of the weapons-production scandal. Indeed, the department itself — not investigative reporters or congressional aides — was ultimately responsible for revealing the most significant and newsworthy information about problems within the system. Why?

In the spirit of its secretive predecessor, the Atomic Energy Commission, the Energy Department has maintained strict silence about its nuclear operations, even disguising and misrepresenting problems in order to maintain ambitious weapons-production schedules. Yet on two occasions in 1988, department officials decided to break their habitual secrecy. First, they admitted that maintaining and modernizing the weapons program would be surprisingly costly; by early estimates \$100 billion, later growing to about \$244 billion.<sup>20</sup> Second, the internal memo by the Du Pont engineer, which disclosed 30 serious accidents at the Savannah River Plant and became the focus for widespread press coverage, was neither discovered nor requested by a congressional staff member. It was volunteered.

In making these disclosures, Energy Department officials took a calculated risk: they would admit serious failures and longstanding problems in order to make the case for surprising budget increases. The story of these uncharacteristic revelations begins when Energy Secretary Herrington appointed a safety advisory board to review operations at the country's aging weapons-production facilities. Like the ill-fated Soviet plant at Chernobyl, the department's weapons reactors at Hanford also had cores of flammable graphite, and they lacked the steel and concrete

"containment" domes that are common to most civilian nuclear plants in the United States.

The lessons from Three Mile Island were ignored, but as the scope of the weapons program's environmental and safety problems became apparent after Chernobyl the Energy Department faced unavoidably tough choices about how to maintain its aging complex and manage the radioactive waste that had already been created. Above all, the department's officials realized just how much an overhaul of the system might cost. Secretary Herrington knew that in a climate of fiscal austerity he needed to prepare Congress for shocking budget increases.

In March 1988, as the Reagan Administration was preparing its 1990 budget and congressional committees were reviewing federal expenditures, Herrington sent Joseph Salgado, his Under Secretary of Energy, to hearings on the weapons program held by the House Energy and Commerce Subcommittee on Hazardous Materials. Contritely Salgado admitted that decontaminating the department's existing weapons-making sites could exceed \$100 billion. "The cleanup of environmental problems cannot happen overnight," he warned. "It costs dollars. It costs big dollars." This was the first time the department had stated publicly that just maintaining its existing weapons-production facilities, and cleaning up decades of radioactive debris, would be so costly.

Salgado's warning was buttressed the next morning, on March 11, in a Wall Street Journal op-ed piece by Frank J. Gaffney, Jr., a senior fellow at the Hudson Institute who had recently served under Richard Perle, the Defense Department's assistant secretary for international security and a notorious conservative on opposing the Soviet military threat. Warning that the U.S. weapons-production system was "one crippling breakdown away from incipient structural nuclear disarmament," Gaffney blamed this perilous condition on an "unholy alliance between those bent on unilateral arms limitations and those seeking deficit-reduction measures." Maintaining and modernizing the weapons-production system was essential to national defense, indeed to all "Western security" Gaffney argued.

His op-ed piece appeared the same day that The New York Times gave its first national coverage of the Energy Department's astounding cost estimates for cleaning up radioactive contamination at weapons-production plants. An Associated Press dispatch on Salgado's testimony cited a cleanup cost of \$100 billion as "in the ballpark." With these public statements the budget showdown became inevitable.

In July, Herrington released his advisory panel's expensive recommendations: build two new tritium-production reactors, one at Savannah River and the other at the Idaho National Engineering Laboratory. But the officials had to find a way to make their case at the White House and before Congress, where budget pressures had become extreme. Herrington and his aides hoped that by publicly admitting past errors they could dramatize their serious plight, demonstrate a willingness to improve, and convince Congress that two new reactors were needed to maintain national security. Salgado said as much when he cited the government's "moral obligation to rectify past sins" committed in the weapons program.

As The New York Times and other publications had used the Du Pont memo to begin their expanding weapons-production coverage in October, Energy Department officials did not deny the story. Instead, they worked to keep it alive. On October 19, Energy Secretary Herrington went to New York, where he courted the national press in order to justify his budget. There he met with the editorial boards of The New York Times and The Wall Street Journal. He taped an interview for NBC-TV's "Today" show. He appeared on CBS-TV's "This Morning" and was interviewed by CBS News. And he had a live-broadcast talk with Tom Brokaw on the NBC "Nightly News." Pleased with the trip's publicity, Herrington's press secretary, Douglas Elmets, boasted: "This is a press secretary's dream."<sup>21</sup>

Why? At the same time Congress and the national press were focusing on the weapons-production scandal, Herrington and his Energy Department colleagues were waging a behind-the-scenes struggle to raise new money for their shattered system. Going public with their problems was one way to keep the pressure on the Office of Management and Budget for more money.<sup>22</sup> This internal budget fight over the weapons-production system did not surface in the national press for nearly two months.<sup>23</sup> But by then, a consensus had been reached in Congress that more money should be committed to cleaning up the contaminated sites, especially at Hanford and Fernald, and the need for new production reactors was being seriously considered as a national-security option.

By early January 1989, the Energy Department estimated that it needed to spend between \$100 billion and \$200 billion over several decades for cleanup, repair, and construction. Members of Congress still disagreed about how much should be spent to clean up existing facilities, and how much to restart or rebuild new ones, but in the struggle that preceded formal announcement of

the 1990 budget, the Energy Department had clearly succeeded in its goals. As *The Wall Street Journal* reported on January 10, in its comprehensive budget roundup: "The nation's problem-ridden nuclear-weapons plants, under the Energy Department's care, captured the most attention and new money among programs run by the department."<sup>24</sup>

## 5.

### DECISIONS AT THE NEW YORK TIMES: A NATIONAL EDITOR'S DREAM.

The Energy Department might not have risked this bold strategy to boost its budget without mounting pressure from *The New York Times*. Yet with the *Times* on the story, the department's lobbying for more money became much easier as the January 9, 1989 deadline approached for release of the Administration's 1990 budget.

It is not clear just when the Energy Department realized that publicity was its best weapon against the Office of Management and Budget. But by the spring of 1988, with weapons-production costs soaring, the department needed to make its case for more money and found an unlikely ally in Keith Schneider, an industrious *Times* reporter. Backed by his colleagues and editors, Schneider was then taking aim on the most vulnerable parts of the weapons-production system.

A national reporter covering agriculture and rural America from the paper's Washington bureau, Schneider worked under the direction of National Editor Soma Golden in New York. From Washington, Schneider covered farm issues at the Agriculture and Interior departments, and traveled widely throughout the Midwest and West. He first became interested in atomic energy when working as a freelance writer in South Carolina; in the early 1980s Schneider had covered several nuclear topics in the state, including low-level commercial waste disposal, plans for the commercial reprocessing of plutonium, nuclear weapons production, controversies surrounding nuclear power plants, nuclear missile deployments from the Charleston submarine base, and political tensions between the state's lucrative military contracts and the fears of local residents about public health and safety.

Schneider had joined the *Times* in September 1985, and while reporting on agriculture throughout the West retained his interest in nuclear subjects. In November 1987, a front-page story recounted how the Kerr-McGee Corporation had sprayed Oklahoma pastureland with fertilizer recycled from radioactive wastes. In December

1987 and February 1988, he reported that the Energy Department's Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico, seemed doomed by water leaking into its underground chambers. In March 1988, Schneider reported on a clash in Idaho over nuclear-weapons work and the state's agricultural economy. In April, in a report on "Plutonium Leak in Idaho Symptom of Atomic Ills," he broadened his focus from environmental and safety hazards, linking radioactive releases near an aquifer to more general problems in the weapons-production system.<sup>25</sup> Throughout the West he met people with specific complaints about the weapons system's isolated facilities: tribal leaders on Indian reservations, construction workers at federal sites, state and local officials.

Back in Washington by mid-April, Schneider saw a broader story in the weapons-production complex itself, and wrote a memo for his national-desk editors proposing a four-part series. As outlined, one article in the series would describe environmental damage and the cost of cleaning it up — a story inspired by Salgado's testimony before Congress a month before. A second article would describe the "domestic nuclear war," showing the health effects to workers and the general public caused by weapons tests and bomb production. A third article would explore the geo-political questions raised by weapons production and nuclear arms-control negotiations. A fourth article would detail the costs and hazards associated with decommissioning and decontaminating radioactive sites within the 12-state weapons-production network.

"It's a wonderful story. An important, wrenching story," Schneider said. "It's a technical story. A political story. And a fiscal crisis story too. It's got arms control, the budget, regional politics, environmental issues. It's also a clear example of the costs of a technology."<sup>26</sup>

Schneider's memo — and his personal enthusiasm — appealed to National Editor Golden, who saw the series as a way to report on a widespread health and environmental scandal that had gained little attention in the national press, "a truly grotesque, systemwide governmental failure," she would later say. During her two years as National Editor, Golden had been searching for an issue that would mobilize the paper's resources for a major investigative project. Also new to his job was Executive Editor Max Frankel, whom Golden believed was willing to take editorial risks. Schneider's investigative zeal, Golden's crusading enthusiasm, and Frankel's willing support converged on the weapons-production scandal. "It's a story we couldn't do five years ago," Golden said

later.<sup>27</sup> But by the spring of 1988 both the topic and the Times were ripe.

Golden encouraged Schneider to begin work on his four-part series, and he promptly filed scores of requests for Energy Department documents under the Freedom-of-Information-Act (FOIA). Within a month, thousands of documents on health and safety conditions in the weapons-production system were arriving at his office. This itself is curious because the Energy Department is noted for its sluggish response to FOIA requests.

Schneider was eager to begin reporting then, but he was sent to the Midwest for more than two months to cover the drought. It was early September before Schneider returned to Washington and took up the weapons-production series, this time aided by energy reporter Matthew L. Wald and defense reporter Michael R. Gordon.<sup>28</sup> Wald and Gordon worked on their pieces in mid-September, and Golden planned to begin publishing the series within a few weeks.

Then Schneider received a telephone call. It came from Robert Alvarez, the environmental activist who had recently joined the staff of Senator John Glenn's Governmental Affairs Committee. In mid-September, when preparing for the Synar-Glenn hearings on the weapons-production system, which were scheduled for September 30, Alvarez began to interview possible witnesses from the Energy Department. Routinely, he asked each of them if they knew about any serious accidents within the system. On September 23, one of them said that he did, and four days later Alvarez received a facsimile copy of the Du Pont memo at his Capitol Hill office. By telephone, he alerted Schneider and several other reporters who cover nuclear affairs.<sup>29</sup> Embargoed by the committees for the day of their hearing, the Du Pont memo became the "peg" on which The New York Times, and then other national publications, would hang their weapons-production stories.

National Editor Golden saw Schneider's October 1 article about the Du Pont memo as an excellent way to lead into the four-piece series then being prepared. But it was a second article by Schneider, which appeared on October 5, that broadened her whole justification for the series and led, by year's end, to more than 85 related stories. In "Ex-Nuclear Aides Deny Being Told of Plant Mishaps," Schneider interviewed former Atomic Energy Commission chairman Glenn T. Seaborg and two other commissioners. All said they were unaware of serious weapons-production accidents. With that, Golden said, "we were onto a process story — a stinking process." A story about how "the process of government had failed."<sup>30</sup>

Golden later told Eleanor Randolph, The Washington Post media reporter: "I haven't seen any story that has gotten me this excited. It was a dream I had when I took this job that there would be an opportunity to do something useful, and it hasn't happened until this."<sup>31</sup> Now two dreams collided. The Energy Department's Press Secretary had dreamt of gaining national publicity for his agency's problems. The Times's National Editor had dreamt of an important scoop. Both had their wish.

Discovering the theme of wider administrative corruption also allowed Golden to convince her colleagues and senior editors that a major effort was called for. A few of the Times pieces that followed, Schneider said, were "cannibalized" from the series that he and the other reporters had been preparing. Other articles were based on the Energy Department documents that Schneider had obtained through the FOIA. Pleased with the stories, Executive Editor Max Frankel decided to give the topic front-page display.

Beginning in October with two stories — the Du Pont memo and the interview with Seaborg and his AEC colleagues — Golden was able to show her editors "that things were...outrageously bad and dangerous" within the weapons-production complex, with "whole communities now at risk."<sup>32</sup> At issue was more than a string of isolated safety and environmental hazards scattered at remote sites throughout the Midwest and West. The governance of the atom itself provided a backdrop for the series.

For the first two weeks of October, Golden managed the series herself, as two assistant editors were away on leave. She, Keith Schneider, and one copy editor produced more than a dozen pieces. "It was fun," Golden remembered. "It was terrific fun. It was a great story; you could just feel it."<sup>33</sup>

Managing Editor Arthur Gelb offered Golden more reporters and by mid-October, national-desk editor John Landman was assigned to coordinate the work of Schneider, Wald, Butterfield, Gordon, and Noble. No other national publication had such resources to spare during a presidential election campaign. But at the Times a "crusade" had begun.<sup>34</sup>

## 6.

### TELEVISION: HOW AIKEN, BROOMFIELD, FERNALD, AND RICHLAND MADE THE EVENING NEWS.

Prime-time network television documentaries have flashed alarming views of the problems that weapons making creates, but only rarely and with

little public result. For example, NBC broadcast "Danger! Radioactive Waste" in January 1977, highlighting problems at the Hanford Reservation in Washington state, at the Carlsbad waste-disposal site in New Mexico, and at plutonium production plants in Idaho. But the program aired opposite "Roots," one of television's most popular series, and gained little attention.

In June 1985, ABC's "The Fire Unleashed" described severe radioactive waste problems at Savannah River and Hanford as "national sacrifice areas" that were "so contaminated with weapons waste they may never again be safe for human habitation."<sup>35</sup>

One ABC Closeup program focused specifically on the safety and environmental problems in the nuclear weapons-production system and described them with flair and insight. "The Bomb Factories" aired on April 24, 1987 and pointed out at Savannah River that "to overstretch a decaying plant risks a catastrophic accident which could cripple America's only source of nuclear weapons material...." That's just what would happen a year later, as tritium-production reactors at the site failed.

The ABC program highlighted the national security importance of tritium by pointing out the threat posed by lax fire-protection systems at the plant:

*RICHARD THRELKELD: [voice-over] ...in its latest budget request, DOE asks for no money to upgrade the plant's fire systems. Nuclear warheads need regular replenishment with tritium gas, a radioactive form of hydrogen. These heavily guarded buildings are the only place it's produced. In terms of America's nuclear defense they are among the most essential buildings in the country....*

This hour-long documentary also explained the widespread problems at Richland, Broomfield, and Fernald. Again, public and political reaction to the broadcast was scant.

Except for this special report, network television gave little attention to the worsening fate of the weapons-production system. In 1986 and 1987 there were only 5 reports on the networks' evening news programs, 4 of them about the Hanford reactor: two when the Chernobyl accident occurred, two when the plant was shut down for safety repairs. The fifth report described humorously an elaborate gift-making operation in a model shop at Rocky Flats ("baubles, bangles and bombs") but missed entirely the safety and environmental dangers at the plant. In 1988 there were no network-news items on the weapons-production

system until October, when the Du Pont memo became front-page news in The New York Times. By contrast, after the Times crusade began there were 23 network reports in October: 12 about Savannah River, 9 about Fernald, 6 about Rocky Flats, and 2 about Hanford. During the first three months of the weapons-production scandal, The New York Times and {less often} The Washington Post set the news agenda for television coverage.<sup>36</sup> (See Appendix C for details of network television news coverage.)

Of course, network television news usually copies The New York Times and The Washington Post, and so when they determined that the weapons-production story was national news, the television networks were quick to follow. Added to the national-security angle were subjects that were ominous-looking, easily photographed, and menacing to local residents — who could always be relied on to utter fearful speculations about their health and welfare, as they had after the Three Mile Island accident.

The Times broke the Du Pont memo story on October 1, and by the evening of October 4th ABC was the first network to report on problems at the Savannah River Plant. On October 6 CBS and NBC followed. On October 9th, ABC cited the Times as a source for its story about the Savannah River Plant when raising the threat to "nuclear readiness" posed by the halt in tritium production — the point first made in print that morning by Schneider and Gordon.

For the rest of October 1988, the networks' evening news programs continued to mirror the Times's drumbeat of coverage, occasionally repeating the same evening what the paper had reported that morning. For example, on October 17 NBC's Tom Brokaw reported: "There is alarming new concern about nuclear safety tonight at the plant that made plutonium for the first atomic bomb." He described a Centers for Disease Control survey of residents around Hanford, noting that "they may have been exposed to the biggest radioactive emission ever recorded in this country." A front-page New York Times piece from Richland, by Schneider, had appeared that morning: "Seeking Victims of Radiation Near Weapon Plant." As Schneider had done near the end of his piece that day, Brokaw reported that "a state study finished three years ago found no health problem..."

Peter Jennings told ABC audiences that same night that, "Last week the government admitted that for many years, it had concealed major safety violations at a nuclear fuel plant in Ohio." At Fernald, his account continued, the plant "re-

leased tons of radioactive waste into the environment ... Thousands of workers and residents were exposed to contamination." This followed closely the Times's October 15, front-page coverage of hearings by the House Energy and Commerce subcommittee, in which Kenneth B. Noble had written: "Government officials overseeing a nuclear weapons plant in Ohio knew for decades that they were releasing thousands of tons of radioactive uranium waste into the environment, exposing thousands of workers and residents in the region..."

The television networks soon lost interest in the continuing Times stories, and in the weapons-plant complex itself. By November 1988 coverage dropped to two items about Savannah River and one about Rocky Flats. In December, with the budget increases a public issue, coverage revived somewhat, with 10 reports during the month on the evening news: 3 about weapons-plant cleanup and the debate over tritium's scarcity; 2 about the Energy Department's budget commitment to clean up the Fernald plant; 2 about new cracks discovered in a Savannah River reactor; 1 about Western governors refusing to accept radioactive waste from the Rocky Flats Plant; 1 about President-Elect Bush's comment at a press conference that he had not yet focused on where to find money for the weapons-plant cleanup; and 1 about the plea by the Energy Department to the White House to expand the weapons-plant budget.

Only one item on the evening news programs that month quoted a newspaper by name: ABC's December 18 coverage of the Energy Department's budget fight with the White House cited the same day's Washington Post. And ABC produced its own item on new cracks at a Savannah River reactor the same day that the Post's Cass Peterson broke the story. But it is clear that most television coverage of the weapons-production scandal was based on reportage by the Times, often as little more than paraphrase of the morning's headlines and quotes.

## 7.

### THE NEWS MAGAZINES: BEHIND THE TIMES.

Like network television, the national news magazines also follow The New York Times closely, and after October 1988 the three leading publications (Time, Newsweek, and US News & World Report) seemed to shift focus in unison as the newspaper's crusade advanced.

Of the three, only Newsweek had touched the subject in 1988 before October. "The plutonium

factor" by Melinda Beck, in the March 14 issue, surveyed the Department of Energy (DOE) weapons-production reactors and raised many issues then appearing in the national newspapers: reduced power levels and a minor tritium release at Savannah River, the high cost of cleanup at the site, and the debate over the need for tritium production. Despite its title, the most significant issue raised in the piece was the proposal of the "tritium factor" by Paul Leventhal, President of the Nuclear Control Institute. If both superpowers halt production of this perishable gas, the "tritium factor" argument goes, then each year about 5.5 percent of their weapons would theoretically become obsolete. Beck's article also included a quote that Ohio Senator John Glenn would repeat and paraphrase often after October: "It will do precious little good to protect ourselves from the Soviets if, in the process, we poison or irradiate our own people." Glenn was identified as "one of several lawmakers seeking tighter controls at the DOE plants."

But except for this summary piece, the news magazines did nothing on the weapons-production story until The New York Times forced the issue.

Following the pace of revelations from the Synar-Glenn hearing and The New York Times's coverage, both Time and Newsweek reported the Du Pont memo and Savannah River's problems in issues dated October 17. In its October 24 issue, Time's "Bad Scene at Rocky Flats. Once again, the feds are forced to shut down a nuclear facility," reported on the Energy Department's October 8 decision (which The New York Times had reported on the 11th) to close the bomb-assembly plant after workers had become contaminated by small amounts of plutonium.

At month's end, all three news magazines featured their most extensive coverage to date. Time published "The Nuclear Scandal," a cover story featuring the Feed Materials Production Center at Fernald, Ohio. The cover photograph showed four people in front of a chain-link fence. "The Clawsons of Ohio blame the Fernald uranium plant for cancer in their family. They are not alone," read the caption. "Across the country, the outrage and sense of disbelief are mounting," the cover story began. "The nation's production-obsessed, scandalously shortsighted nuclear weapons industry is virtually under siege by its critics. And no wonder. Operating secretly behind a screen of national security for more than four decades, the bombmakers have single-mindedly, sometimes recklessly, pursued their goal...." of warhead production.

"No one knows how many people may have been needlessly afflicted with such ailments as cancer, birth deformities and thyroid deficiencies — and no one in relevant offices seemed to care," Time concluded. Only later in the piece did the magazine report that "there is no undisputed evidence that radioactive materials released into the environment around DOE facilities have harmed anyone." Stating a theme by then common to weapons-production stories, Time quoted Senator Glenn as saying, "We are poisoning our people in the name of national security."<sup>37</sup> Many Fernald residents interviewed by Time, including the Clawson family featured on its cover, had been quoted more than a week before by Kenneth B. Noble in *The New York Times*.<sup>38</sup> "Time took Noble's piece about Fernald, looked up the people, and got them to say the same thing," Soma Golden later complained.<sup>39</sup>

Newsweek had the presidential campaign as its cover story for October 31, but featured a blurb above the logo: "The Weapons Plant Scandal/Nuclear Danger and Deceit." Inside, the article featured the health problems of Fernald resident Ed Cook, and described the town's "nightmare" as "a symptom of the massive problems confronting America's nuclear-weapons program."

USNews featured "Planet Earth" and the global environment on its October 31 cover, but inside surveyed the deteriorating weapons-production system in a two-page summary, "The year the bomb makers went boom." It highlighted the charge by the Defense Department's Robert Barker that if the plants are not restarted the country could face "unilateral nuclear disarmament."

News magazine journalism is frequently a stylistic rendering of many other sources, and the weapons-production scandal was no exception. The few families around the Hanford and Fernald facilities who were first quoted in *The New York Times* were later featured in the news magazines. One popular critic of the system was farmer Tom Bailie of Mesa, Washington, near Hanford. He was first quoted in a national magazine in the January 1988 special issue of *The Bulletin of the Atomic Scientists*. *The New York Times* (and then NBC) quoted him on October 17, and he appeared in both *Newsweek* and *Time* articles on October 31. Government officials — in the Reagan Administration and the Congress — were quoted most often from statements made in public meetings or in published releases, rather than from personal interviews.

To be sure, a breaking news story that produces fresh revelations every day or two is difficult to summarize at week's end, and more difficult still

to place in historical context. None of the news magazines saw the weapons-production scandal as an old story, although *Newsweek* had written about Fernald in 1985, and *Time* had covered the reactor shutdown at Hanford in 1987. (For details of magazine coverage since 1980, see Appendix B.) Nor did the news magazines see the spread of the weapons-production scandal as a Washington-based media phenomenon, fed by an agency eager to publicize its budget plight and fanned by a newspaper intent on making this issue into a crusade.

## 8. AN OLD STORY?

For Matthew L. Wald at *The New York Times*, Cass Peterson at *The Washington Post*, and Robert Gillette at *The Los Angeles Times*, the weapons-production scandal was a familiar topic. Yet over the years these reporters' coverage of the isolated story's pieces — from Aiken, Broomfield, Fernald, or Richland — rarely made page one. In retrospect, the weapons-production story had been visible for years, but lacked the fresh angles of the federal budget deficit and national security.

Many stories about the weapons-production system had already surfaced as separate articles published throughout the 1970s and 1980s, most often in regional newspapers and specialized magazines. For them it was a local environmental or health story, a scientific or technical story, a bureaucratic or political story. Not a national story. That is, not yet.

There were exceptions. One series that anticipated the revelations of 1988 was "The Bomb Factories," a special report by *The Seattle Times*. Prompted by the Chernobyl accident and published in December 1986, this six-part series examined how "the nuclear-arms buildup has put intense pressure on a production system crippled by old age and lax maintenance," and warned that "the future of the arms program — and the safety of workers and the public — may be at risk."<sup>40</sup>

The *Seattle Times* series focused on Hanford, Fernald, Savannah River, Rocky Flats, the warhead-production system as a whole, and nuclear-weapons tests. And it asked, "Will Congress crack down?" and listed Senators and Representatives who were "taking aim at the Department of Energy," among them Senators John Glenn and Howard Metzenbaum (both D-Ohio) and Mark Hatfield (R-Oregon), and Representatives John Dingell (D-Michigan), Ron Wyden and Les AuCoin (both D-Oregon), Thomas Luken (D-Ohio),

**News Magazine Coverage of the  
Nuclear-Weapons Production System  
January to December 1988**

TIME	NEWSWEEK	U.S. NEWS AND WORLD REPORT
<p>"Big Trouble at Savannah River. Probes of a nuclear plant reveal safety flaws and near accidents" October 17, p. 55.</p> <p>"Bad Scene at Rocky Flats. Once again, the feds are forced to shut down a nuclear facility" October 24, p. 77.</p> <p>"The Nuclear Scandal" October 31, Cover and pp. 60-65.</p>	<p>"The Plutonium Factor. We're awash in the stuff — so why risk problems?" March 14, Melinda Beck with Douglas Waller p. 67.</p> <p>"Nuclear Finger-Pointing. DuPont vs. the Energy Department" October 17, p. 60.</p> <p>"Nuclear danger and deceit," October 31, T. Morgenthau pp. 26-30.</p> <p>"Nuclear Costs" November 28, p. 7. [a Periscope item on soaring cost estimates for weapons-production cleanup]</p> <p>"Who Gets the Nuclear Waste? A 'not in my backyard' summit of governors" December 19, Between pp. 32-39.</p>	<p>"Nuclear Power. Savannah River's scary saga" October 17, pp. 13 &amp; 15.</p> <p>"The year the bomb makers went boom. Three secret factories have closed, and costs are staggering," October 31, Stephen Budiansky w/ William J. Cook pp. 35-36.</p> <p>"Why the negligence rap won't stick. To live and breathe in Ohio," October 31, Stephen J. Hedges p. 36.</p>

Mike Synar (D-Oklahoma), and Edward Markey (D-Massachusetts).

In the wake of the Chernobyl accident, more and more reporters for national news organizations wondered, "Can it happen here?" and discovered that while all but one of the country's commercial nuclear-power reactors had "containment" domes to check the escape of radioactive debris, the weapons-production reactors — like the plant at Chernobyl — had none. Also like Chernobyl, some of the weapons-production reactors had cores containing large amounts of flammable graphite, which in the Russian accident burned in a way that spread radioactive clouds for hundreds of miles. By contrast, the American power reactors had metallic uranium/plutonium cores that were surrounded by water.

Responding to this concern in May 1986, the Energy Department asked the National Research Council at the National Academy of Sciences (NAS) to study safety features at the weapons-

production reactors then operating: at Hanford and at Savannah River.

On May 11, 1986 The New York Times reported that "Officials Doubt U.S. Reactor Peril. Energy Dept. Aides Call Plant in Washington State Safe Despite Chernobyl," giving reassurances that Hanford's N-Reactor could not suffer a fire in its graphite core as the Soviet plant had. But in January 1987, the N-Reactor was shut for six months to undergo safety repairs: the event that prompted a Time magazine article about "Plutonium blues in Hanford." After the NAS reported on safety problems, in October 1987, the Hanford reactor was closed permanently and the three reactors at Savannah River — used to make both plutonium and tritium — had their power levels cut.

Even before the NAS study was released, The New York Times's Matthew L. Wald reported on problems at Savannah River in "Explosion Risk At Nuclear Site Is Reported High. DuPont Disputes

Data on Plant in Carolina."<sup>41</sup> Both *The New York Times* and *The Washington Post* noted on October 30, 1987, that the NAS panel had concluded the existing weapons-production reactors were not likely to last another decade, the time estimated to build new plants. The same day, E.I. du Pont de Nemours & Company, which had built the Savannah River plant in the 1950s and operated it since then, announced its decision to withdraw from its contract when it expired in March 1989. (Westinghouse began operations at Savannah River on April 1, 1989.)

Almost a year before it broke as a national story, Wald had highlighted the coming controversy in the November 17, 1987, piece: "Turning Point Nears In Production of Fuel For Hydrogen Bombs. U.S. must decide where, or whether, to produce more tritium." Wald identified tritium's importance both for making and maintaining thermonuclear weapons, and he noted a debate among arms-control advocates over whether a tritium cut-off would help or hinder US-Soviet negotiations to reduce nuclear weapons. A year later this same story was front-page material, but in 1987 it appeared on the first page of the paper's third section, in the weekly "Science Times" supplement.

Wald noted at the time that *The Bulletin of the Atomic Scientists* was then preparing its January 1988 issue on nuclear materials production, and when this appeared the nine-article feature on "Making Warheads" presented the most complete survey to date on the weapons-production policies. (See Appendix B for article titles.) This 38-page feature would later serve other journalists as an excellent "primer" for the many interrelated technical and political issues that comprise the weapons-production story.

The *Bulletin* articles offered a comprehensive overview of weapons production, a glossary, details of radioactive releases at Hanford in the 1940s and 1950s, an account of the tritium production problems at Savannah River, an article about waste disposal problems and another about environmental policies at the Energy Department, an analysis of the need for tritium in the U.S. nuclear-weapons stockpile, and policy analyses for and against producing more plutonium in view of possible future arms-control negotiations.<sup>42</sup> In addition, several authors of the *Bulletin's* articles were later quoted by the national media once the story broke, among them Thomas Cochran and Dan Reicher of the Natural Resources Defense Council, William M. Arkin of the Institute for Policy Studies, David Albright of the Federation of American Scientists, and Richard L. Wagner of the

Lawrence Livermore National Laboratory.

Around the new year, both *The Washington Post* and *The New York Times* carried articles about Richland's links to weapons production, and on February 4, 1988, Wald reported on page one that Energy Department officials favored closing Hanford's N-Reactor permanently.

On March 11, 1988, the day after the Energy Department's Joseph Salgado had said that the cleanup costs could reach \$100 million, a *Wall Street Journal* op-ed piece argued that maintaining the weapons-production system was essential to national defense, indeed to all "Western security." The piece by Frank J. Gaffney, Jr. warned that the U.S. weapons-production system was "one crippling breakdown away from incipient structural nuclear disarmament."

Gaffney's piece appeared the same day that *The New York Times* gave its first coverage of the Energy Department's astounding cost estimates for cleaning up radioactive contamination at weapons-production plants. An Associated Press dispatch of the day before had quoted Salgado as saying that a \$100 billion cleanup cost is "in the ballpark."

Interest was building steadily at *The New York Times*. In February 1988 Matthew L. Wald wrote three articles about the Energy Department's decision to shut its Hanford reactor, and in March Keith Schneider filed two stories about environmental problems at defense facilities in Idaho. In the six months leading up to the Du Pont memo's release in September 1988 more than 20 stories appeared in national newspapers about isolated aspects of the weapons-production system. But only one appeared on a front page, and none saw the situation as critical to national security or to the politically-sensitive federal budget deficit.

Cass Peterson at *The Washington Post* had focused political attention on the Savannah River accident in two articles during August 1988, "Reactor Runs Out of Control Briefly" on the front page on the 18th, and "Top Managers Not Notified Of Reactor's Startup Problems" on page A2 the next day. Hers was the first national coverage of the events that finally shut down the whole weapons-making complex. Peterson also broke the story that the tritium-production reactors would all remain shut, although neither she nor her colleagues covering defense issues followed up this significant development with military or political analyses.

The August/September issue of *Technology Review* (a magazine published by the Massachusetts Institute of Technology) featured a cover story by Robert Alvarez and Arjun Makhijani,

both of the Environmental Policy Institute, about the "Hidden Legacy of the Arms Race: Radioactive Waste." In it, Alvarez used recently published Energy Department figures to calculate that "roughly 45 cents of each dollar spent to make bomb-grade material now goes toward managing wastes." Featured in the article were problems that Keith Schneider had highlighted at the WIPP nuclear-waste site in New Mexico in February. Piece by piece, links were being forged between the weapons program's past and its future; a connection shifted to the national press when the Technology Review article was excerpted in The Washington Post "Outlook" section on September 4, 1988.

Also in September 1988, and independently of the four-part series that was then being written by The New York Times's reporters, the paper's editorial-page staff began to see the weapons-production story as a serious national problem. Editorial writer Nicholas Wade responded to information from Senator Glenn's Committee and the Natural Resources Defense Council with a prescient editorial that appeared on September 22, just a week before the Du Pont memo became public. "The Bomb Maker Becomes a Bomb" had a "lead" that could have set the tone for the dozens of news articles that would soon follow: "Decay hangs darkly over the manufacturing complex that makes America's nuclear weapons, an enterprise so vast it ranks with the 20 largest corporations. Extended lack of maintenance and pollution control now endanger both national security and the environment." A day later an Energy Department employee told Glenn-committee staffer Robert Alvarez about the Du Pont memo. The stage was set for The New York Times to begin its crusade.

By far the most aggressive national reporter on the weapons-production story was Keith Schneider. His enthusiasm was matched by the Times's commitment of other writers and editors at the height of a presidential election campaign. But in his sometimes-hecktic pursuit of the weapons-production story, Schneider included in his string of revelations several items that were exaggerated, misleading, or simply dated.

Schneider's account of high-level radioactivity releases at Hanford during the 1940s and 1950s had been covered by Wald of the Times in October 1986. Schneider had also exaggerated the environmental threat posed by radioactive releases at Savannah River that were first reported by the Morris News Service. In a survey of radiological contaminants throughout the nuclear-weapons production system, Schneider had included chemical pollution incidents that involved no radioac-

tivity at all. And a Week-in-Review article had summarized a comprehensive account of the weapons plants by Wald that had first appeared in the Times as early as December 1986.<sup>43</sup>

As The New York Times rushed to publish articles almost daily, some accounts drew on stories and sources that were years old. As early as 1985, an engineer at the Rocky Flats plant had complained about illegal projects by carpenters in a shop where models of nuclear weapons were built — including a hardwood staircase, a grandfather clock, and decorative medallions for supervisors and employees. These abuses had been reported by The Bolder Daily Camera, a local newspaper, and were investigated in 1987 by the Federal Bureau of Investigation, the Energy Department's Inspector General, and a House subcommittee.<sup>44</sup> CBS News televised the story in December 1987.

More disturbing to other journalists was Keith Schneider's assumption that a tritium shortage resulting from the failure of the Savannah River reactors posed an imminent national-security problem. This conclusion appeared in many of the stories he wrote after October 9, and allowed Schneider and his Times colleagues to treat almost any failures in the weapons-production network as part of a national security crisis — no matter how related or remote.

But, as we shall see in the next section, the importance of tritium production would itself soon come into question.

## 9.

### TRITIUM QUESTIONS.

For the press and policymakers alike, the most important question behind the weapons-production scandal of 1988 remains unanswered: Is the U.S. nuclear arsenal running short of tritium?

Defense analysts agree that the Reagan Administration's push to modernize nuclear warheads nearly doubled U.S. annual requirements for tritium, from about 3 kilograms under the Carter Administration to more than 5 kilograms by 1988. With tritium production halted in August 1988, a potential shortage of this perishable gas gave the weapons-plant scandal a potent national-security dimension, one that Schneider's New York Times coverage underscored repeatedly. On the other hand, the Times coverage paid little attention to the many alternate sources of tritium in lieu of production at Savannah River and Idaho.

In addition to the Energy Department's plans for new reactors in South Carolina and Idaho,

**National Newspaper Articles  
in the Six Months Before  
Release of the Du Pont Memo**

- April 12**  
"Weapons Reactors Shut After Safety Questioned. Seismic Experts Warn About Pipe Supports" WP Cass Peterson p. A8.
- April 14**  
"Security Services Deal" LAT IV p. 6. [Wackenhut Corp received 5-year, \$300-million contract for paramilitary security at SRP]
- April 17**  
"Plutonium Leak in Idaho Symptom of Atomic Ills" NYT Idaho Falls nd Keith Schneider p. 24.
- May 10**  
"Dark Days in Nuclear Boom Town: Hanford's Search for Security" WP Richland, Wash nd Cass Peterson p. A12.
- "Beating Their Swords Into Golf Clubs" WP Kennewick, Wash nd Cass Peterson p. A12.
- June 8**  
"Arms Labs' Toxic Waste Endangers Public, Group Says" LAT Livermore Dan Morain I p. 3.
- June 10**  
"Project to Convert Atom Waste Begins" NYT West Valley, NY June 7 Matthew L. Wald p. A10.
- July 2**  
"DOE Cleanup Could Cost \$110 Billion" WP Michael Weisskopf p. A7.
- "High Cleanup Costs at A-Weapons Plants Cited" LAT Washington (AP) I p. 2.
- July 3**  
"Once Welcomed, Colorado Arms Plant Now is an Unwanted Neighbor" LAT Golden, Colo. Robert C. Unruh (AP) I p. 26. [Rocky Flats]
- July 8**  
"New Reactor for Bomb Fuel In South Carolina Is Urged" NYT Washington July 7 (AP) p. D17.
- August 4**  
"Building 2 New Reactors For Arms Material Urged. DOE Seeks South Carolina, Idaho Facilities" WP Cass Peterson p. A3.
- August 18**  
"Reactor Runs Out of Control Briefly. Weapons Plant Shut Down After 'Complete Collapse' of Safety Rules" WP Cass Peterson pp. A1-A14.
- "Reactor Reported Briefly Out of Control" LAT Brief [WP report summarized]
- August 19**  
"Nuclear Adviser Assails Methods at U.S. Nuclear Plants" NYT Matthew L. Wald p. A12.
- "Top Managers Not Notified Of Reactor's Startup Problems. Mid-Level Bosses Boosted Savannah Plant's Power" WP Cass Peterson p. A2.
- August 31**  
"Math Error Cited in Reactor Failure. Later Power Surge at Savannah River Still Mystery" WP (AP) p. A6.
- September 4**  
"Nuclear Waste: The \$100-Billion Mess. Environment" WP Robert Alvarez and Arjun Makhijani in "Outposts," a one-page issue review, adapted from Technology Review. p. C3 in Outlook.
- September 9**  
"Disappearance Puts Lab in Spotlight" LAT Livermore Todd J. Gillman and Dan Morain. I p. 3. [Ronald K. Stump, tritium expert, flees to Mexico]
- "The Energy Department announced that it has awarded a \$6.7-billion contract to the Westinghouse Electric Corp. to operate the Savannah River Plant, a nuclear weapons facility..., for 5 1/2 years..." LAT Brief I p. 2.
- September 16**  
"35 Workers Being Tested for Plutonium Exposure" LAT Fernald, Ohio (UPI) II p. 4.
- September 18**  
"U.S. Plan on Hold. Suddenly, Nuclear Waste Looks Very Visible Again" NYT Washington nd Keith Schneider p. 4E.
- September 22**  
"The Bomb Maker Becomes a Bomb" NYT (Editorial) p. A38.

these alternatives include: halting U.S. government sales and buying tritium from Britain or France; converting an unfinished commercial nuclear-power plant at Hanford to produce tritium; building a new linear accelerator to make tritium; re-cycling and more carefully handling tritium now in circulation; dismantling obsolete weapons (such as those on aging Poseidon missiles aboard nuclear submarines and the strategically marginal "neutron bomb"); and extending schedules for replenishing tritium in warheads.<sup>45</sup>

It is also possible to manufacture tritium in commercial nuclear power plants, by inserting different control rods and materials into the radioactive core, although this proposal upsets nuclear-power advocates by crossing a long-maintained psychological threshold between the "military" and the "civilian" atom. Put simply, nuclear utilities do not want their power plants seen as "bomb factories."

If a tritium shortage represented a national-security threat to the federal government and *The New York Times*, it posed a very different problem for arms-control activists: one involving turf and tactics. Some arms controllers, such as Paul Leventhal at the Nuclear Control Institute, saw the radioactive decay of tritium (5.5 percent a year) as a natural time-clock for mutual weapons reduction, and argued that this "tritium factor" could give needed urgency to arms-control negotiations.<sup>46</sup> Others, such as physicists Frank von Hippel and David Albright at the Federation of American Scientists, warned that tritium's natural decay rate might force diplomats and military planners into compromises they could later regret, thereby destabilizing the superpowers' nuclear weapons balance. Instead, they favored a "plutonium challenge" that would lead both superpowers to suspend fissionable-materials production, including plutonium and highly enriched uranium, an idea first proposed in Congress in 1975.

Those opposing the "tritium factor" argued that to use this perishable gas as a "forcing mechanism" for nuclear arms control would create new uncertainties and pose new problems with the verification of weapons reductions.<sup>47</sup>

As press attention focused on the fate of the disabled tritium-production reactors at Savannah River, the story that attracted no coverage on September 28, 1988 (see page 6) was by the following spring a topic of steady press interest. Through the spring and summer of 1989, President Bush's new Energy Secretary, James D. Watkins, postponed restart of the Savannah River reactors until at least September 1990 because of lingering envi-

ronmental and safety problems. And faced with further delays in tritium production, the Pentagon and Energy Department found ways to use existing supplies more efficiently. By November 1989, Keith Schneider at *The New York Times* saw in the Energy Department's production schedule new "evidence that the shortage of tritium...is not as urgent as the Pentagon and Energy Department originally believed."<sup>48</sup>

In retrospect, the feared tritium shortage was useful both to the Energy Department and to *The New York Times*, but the pace of arms-control negotiations and the dramatic easing of East-West tensions made sizeable reductions in the nuclear-weapons stockpile seem an imminent reality. And in this context, the national security angle to the weapons-production scandal lost much of its significance. However, environmental, safety, and health issues raised by *The New York Times* and then the American press continued to attract steady national coverage — something that had never occurred before. Contractor scandals at the Rocky Flats Plant in Colorado, newly-released health records for workers at the Hanford Reservation in Washington, and radioactive contamination of the ground water near the Savannah River Plant in South Carolina are no longer local and regional issues; thanks to the weapons-production scandal of 1988 they are now national issues for the press, policymakers, and the public.

## 10. SUMMARY.

What does it take for a story to gain — and hold — the attention of the national press? A new subject? A new twist on an old subject? Determination by journalists and their editors? Startling revelations? In retrospect, none of these four elements alone had propelled the weapons-production story to the front pages of the nation's newspapers, to the covers of the news magazines, and to the television networks' evening news programs. But taken together, a national story was born.

The subject itself was not new, and had been widely reported in regional and specialized publications. But the Energy Department and *The New York Times* each added a new twist: the department, a budget-deficit crisis; the paper, a national-security angle based on the importance and scarcity of tritium. The paper also provided plenty of determination with its self-proclaimed crusade. But, curiously, the two most startling revelations

— the huge cost of rehabilitating the weapons-production system, and the details about 30 serious reactor accidents at Savannah River — came from the Energy Department itself at congressional hearings, and not from determined investigative reporting.

The scope and level of coverage reached its highest peak during October 1988, and except for *The New York Times* had diminished by year's end. But because of the many issues raised by this burst of coverage, the weapons production system continues to attract steady press attention to this day. In the first nine months of 1988 — the period just before the *Times*'s crusade began — about 40 articles, editorials, and op-ed pieces appeared in the national newspapers surveyed. By contrast, more than 150 appeared during the same period in 1989. Since October 1988, news magazines and the television networks have also focused on the story as never before.

Since the weapons-production scandal became a national story, press coverage has moved on to new events and revelations: plutonium contamination and nuclear-waste disposal problems at Rocky Flats; court settlements with residents at Fernald; health statistics released for workers at Hanford, and recently the possibility that nuclear-waste tanks at the site might explode.

The tritium-scarcity issue that gave the *Times* its national-security angle has faded in news accounts, as it has in the minds of most policymakers. But in Washington, the press's new sensitivity to the weapons-production system and its problems has assured national coverage for a topic once reported only by the trade press. The appointment of Victor Stello to head the Energy Department's nuclear-weapons program became a national political story in 1989 and 1990. Stello's past performance as chief of staff at the Nuclear Regulatory Commission was the subject of hearings and investigations that dragged on for 10 months. Energy Secretary James D. Watkins personally appeared on Capitol Hill to defend his nominee. But the new importance of Stello's job, and the many doubts raised about his record and reputation, eventually forced him to withdraw his name in April.

Nuclear waste disposal from the weapons-production sites continues to embroil Western governors and Energy Secretary Watkins in newsworthy disputes. And still to be considered in Congress and in the press is the Energy Department's plan to restart the refurbished tritium-production reactors at Savannah River, and its possible need to build new reactors there and in Idaho. Health statistics that the Energy Depart-

ment has promised to release for its weapons-production workers are sure to attract national press attention, as are the soaring costs for cleaning up the 12-state network and disposing of radioactive wastes.

And today, a few reporters are picking at the edges of the government's last unexamined nuclear enterprise, and maybe the next national story: the Navy's expansive — and expensive — nuclear reactor program.

## ENDNOTES

1. An element's radioactivity is measured in its "half life," the amount of time it takes for half its atoms to disintegrate to another nuclear form. Plutonium's half life is 24,100 years; tritium's is 12 years.
2. U.S. Government, House of Representatives. Committee on Armed Services. "P-Reactor Operations at Savannah River" Hearing September 28, 1988. H.A.S.C. No. 100-83. p. 44.
3. Eleanor Randolph interview, December 27, 1988.
4. Ibid.
5. Robert Gillette interview, January 4, 1989.
6. Conversation with Soma Golden, December 13, 1988.
7. Soma Golden interview, March 1, 1989.
8. Keith Schneider interview, November 21, 1988.
9. "The Half-life of The Tritium Story" by William Lanouette. Deadline (Center for War, Peace, and the News Media; New York University) January/February 1989.
10. "Who sets the news agenda?" by M.L. Stein. Editor & Publisher December 31, 1988, pp. 7 and 31.
11. Robert Gillette interview, January 4, 1989.
12. "Reactor Shutdown Heralds Debate on Plutonium Need" NYT December 21, 1986 Matthew L. Wald p. 34.
13. New York Times, November 17, 1987, pp. C1-C9.
14. "The Bomb Maker Becomes a Bomb" New York Times, September 22, 1988, p. A38.
15. Keith Schneider interview, November 21, 1988.
16. See "Hanford's Bitter Legacy" by Karen Dom Steele, The Bulletin of the Atomic Scientists January/February 1988, pp. 17-23.
17. "Study of Energy Department's 35 Reactors Finds Safety Deficiencies" by Irving Molotsky, The New York Times, July 7, 1981, p. A14. For this and other citations in the early 1980s, I am grateful to Judy K. Weddle, whose research paper on press coverage of tritium and the nuclear arsenal offers a review of U.S. policy decisions. "Press Coverage of the Need for Tritium in Maintenance of the U.S. Nuclear Arsenal, 1979 Through 1988" December 6, 1988, New York University.
18. "Defects in Nuclear Arms Industry Minimized in Early Reagan Years" by Keith Schneider, The New York Times, November 7, 1988, p. B12.
19. Jonathan Landman interview, March 1, 1989.
20. "Bomb Factories of the 21st Century" by Eliot Marshall. Science January 20, 1989, p. 305.
21. Washington Post January 9, 1989, p. A3.
22. Few reporters pointed specifically to the Energy Department's publicity seeking, but two columnists on the Boston Globe made the connection explicit. In an op-ed piece on October 21, Randolph Ryan called the weapons-production revelations "A planned crisis?" and concluded that when "once-secretive Energy Department officials are volunteering tidbits, fleshing out the story daily. . ." the only explanation could be a campaign for money to build new reactors. Two days later, in his "Economic Principals" column in the Sunday business section ("High levels of nuclear kabuki," pp. A1-A4), David Warsh asked:  
"Why would the DOE be orchestrating a campaign of leaks against its biggest fiefdom, especially on the eve of a presidential election? Because it is one of the oldest tricks in the book."
23. See Appendix A for December 11, 12, 18, and 19 articles about the Energy Department-White House debate over new funds.
24. "'Solid and Reasonable' or 'Meaner and Harsher'? Defense Budget Is Favored as Cuts Come Elsewhere." A Staff roundup. The Wall Street Journal January 10, 1989, p. A12.
25. The New York Times, April 17, 1988, p. 24.
26. Keith Schneider interview, November 21, 1988.
27. Soma Golden interview March 1, 1989.
28. Lanouette, op. cit., p. 10.
29. Robert Alvarez interview, November 16, 1988.
30. Soma Golden interview, March 1, 1989.
31. "New York Times Crusade Focuses Attention on Weapons Plants" by Eleanor Randolph, The Washington Post, January 9, 1989, p. A3.
32. Soma Golden interview, March 1, 1989.
33. Ibid.
34. Keith Schneider interview, November 21, 1988.
35. "The Fire Unleashed" Show #125, June 6, 1985, ABC News Closeup. Transcript p. 17.

36. Compare story topics in Appendix A and C on specific dates for other examples of the newspaper-evening news connection.
37. "The Nuclear Scandal" Time October 31, 1988. Cover and pp. 60-65.
38. "Bitter Neighborhood Adjoins U.S. Uranium Plant in Ohio" by Kenneth B. Noble, October 19, 1988, pp. A1-A20.
39. Soma Golden interview, March 1, 1989.
40. "The Bomb Factories" The Seattle Times, December 14-19, 1986. Staff members working on the series included Eric Nalder, Elouise Schumacher, Dick Clever, Eric Pryne, Tom Brown, David Boardman, Cole Porter, Alan Berner, Harley Soltes, Barry Wong, Rob Covey, Chuck Taylor, Robert Massa, James McFarlane, Ed Walker, Celeste Ericson, and Larry West.
41. The New York Times September 18, 1987, p. A12.
42. "Making Warheads" The Bulletin of the Atomic Scientists January/February 1988, pp. 12-49.
43. For detailed comparison, see Appendix A.
44. See, for example, "Gift Orders Filled in Atomic Workshop," by Fox Butterfield. The New York Times, November 6, 1988. This story first appeared in The Boulder Daily Camera on August 23, 1987, and was covered by The Los Angeles Times on November 27. After congressional hearings on December 11, the story appeared in the Denver Post, The Rocky Mountain News, and through its wire in several Knight-Ridder newspapers.

The "model shop" story provided a humorous glance at the weapons-production system for the CBS Evening News on December 11, 1987, a sharp contrast to the grim coverage of the topic less than a year later.

*DAN RATHER: In Washington, Congress heard testimony today about what's been going on in one of the nation's most sensitive nuclear defense plants at taxpayer expense. Eric Engberg reports on baubles, bangles and bombs.*

*ERIC ENGBERG: Rocky Flats, Colorado. Behind these top secret walls, the Energy Department designs and builds many of the nation's nuclear weapons. Other secret projects were also underway here, as the FBI revealed today.*

*WILLIAM GENTRY [FBI]: This is a mold that was called the Bullwinkle mold. And it, I think, depicts the cartoon character Bullwinkle.*

*ENGBERG: Cartoon moose figurines were just one of hundreds of high-priced trinkets the government paid for at Rocky Flats, all of them turned out by machinists in the plant's model shop under contract with Rockwell.*

*DAVID NAVARETTE: Trinkets, cuff links, tie tacks, plaques; you name it, we made it.*

*ENGBERG: From the FBI and Navarette, who broke the case, horrified congressional investigators got a glimpse of the product line: an engraved paperweight, \$500 in taxpayers' money to make it; a walnut foot massager; cuff links at \$200 a set; sculpture made from the costly glass that's used in lasers. The gifts, some of them plated with silver drawn from the nation's strategic reserves, were ordered up by supervisors and sent to big shots in the weapons industry and government. The Santa's workshop had been operating nearly 17 years until shut down by the FBI.*

*REPRESENTATIVE MIKE SYNAR: Quite simply, the Department of Energy is out of control of its own weapons complex.*

*JAMES NICKS: I had no idea of the scope of this activity.*

*ENGBERG: Congressional investigators say contractors at nuclear plants are not being watched closely enough. The FBI says the Rockwell contract was so filled with loopholes they had to give up on prosecuting anyone, and only one man lost his job.*

*One thing was clear today. The gift-giving has cost the taxpayers hundreds of thousands of dollars.*

*Eric Engberg, CBS News, Washington.*

45. For details of alternatives to tritium production, see "The Tritium Follies" by David Albright and James Beard. The Bulletin of the Atomic Scientists, November 1989, pp. 42-5.

46. See, for example, "America's Non-Existent Nuclear 'Crisis'" The Washington Post (April 16, 1989, p. B3) by physicists Hans Bethe, Herman Feshbach, Val Fitch, Marvin Goldberger, Kurt Gottfried, Milton Hoenig, Franklin Long, J. Carson Mark, and Victor Weisskopf, and by political scientist George Rathjens.

47. For details of the politics behind weapons production cutoff proposals, see "Plutonium — No supply, no demand?" by William Lanouette. The Bulletin of the Atomic Scientists, December 1988, pp. 42-5.

48. "Making Tritium at Savannah River To Face a Further Delay of 2 Years" by Keith Schneider. The New York Times, November 20, 1989, p. A12.

**APPENDIX A**  
**Chronology of Articles about Nuclear-Weapons Production**  
**in National Newspapers 1980 to 1988**

**1980**

6 Apr  
 "U.S. May Lack Nuclear Material for Arms Buildup"  
 WP Michael Getler p. 1.

5 May  
 "U.S. Panel Urges New A-Reactor For Weapons" WP  
 Walter Pincus p. 1.

16 Sept  
 "Lack of Plutonium for Warheads Stirs Debate on  
 Increasing Output" NYT Richard Burt p. 1.

27 Sept  
 "Top Carter Aides, in Policy Shift, Back Higher  
 Plutonium Output" NYT Richard Burt p. 1.

**1981**

7 July  
 "Study of Energy Department's 35 Reactors Finds  
 Safety Deficiencies" NYT Irving Molotsky p.  
 A14.

10 Sept  
 "U.S. to Boost Plutonium Supply for Weapons" WP  
 Walter Pincus p. A7.

11 Sept  
 "U.S. Said to Plan Atom Fuel Reuse" NYT Robert D.  
 Hershey, Jr. p. A20.

12 Sept  
 "Spent Atom Fuel Under Study for Weapons Use"  
 WP[AP] p. A3.

11 Oct  
 "U.S. to Boost Plutonium Supply for Weapons" WP  
 Walter Pincus p. A7.

**1982**

28 Feb  
 "Reagan Plans Rise in Materials Used For Nuclear  
 Arms" NYT Judith Miller p. 1.

**1983**

16 Jan  
 "Carolina Joins in Bid to Curb Plutonium Plant"  
 NYT p. A18.

**1984**

4 Sept  
 "Carolina Nuclear Plant in Big Radioactive Leak"  
 NYT p. A14.

7 Oct  
 "Radiation Tests are Assailed" NYT p. A36.

**1985**

12 April  
 "In Disputed Assertion, Study Says U.S. Plant Is  
 Leaking Plutonium" NYT Matthew L. Wald p.  
 B5.

16 Dec  
 "U.S. Tests Citizens Near Bomb Plant" NYT p. A21.

**1986**

8 May  
 "Officials Doubt U.S. Reactor Peril. Energy Dept.  
 Aides Call Plant in Washington State Safe Despite  
 Chernobyl" NYT Washington May 7 Philip M.  
 Boffey p. A11.

12 May  
 "Aging U.S. Reactors Are Used in Buildup of Nuclear  
 Weapons" WP Cass Peterson p. A26.

10 Oct  
 "DOE Orders 2 Hanford Plutonium Plants Shut" WP  
 Cass Peterson p. A3.

18 Oct  
 "Safety Lapses Paralyze Nuclear Bomb Complex"  
 NYT Richland, Wash Oct 17 Matthew L. Wald  
 p. A16.

23 Oct  
 "Safety Lapses Paralyze Nuclear Bomb Complex"  
 NYT Matthew L. Wald p. A16.

- 24 Oct  
 "Northwest Plutonium Plant Had Big Radioactive Emissions in 40's and 50's" NYT Richland, Wash Oct 17 Matthew L. Wald p. A20.
- 13 Dec  
 "Key U.S. Reactor to Shut 6 Months for Safety Steps" NYT Ben A. Franklin pp. 1-35.
- 14 Dec  
 "Troubles Infest System for Making Plutonium" NYT Matthew L. Wald pp. 1-38.
- 21 Dec  
 "Reactor Shutdown Heralds Debate on Plutonium Needs" NYT Matthew L. Wald p. A34.
- 1987**
- 1 Feb  
 "An Uneasy Feeling About a Reactor. Government Moves to Correct Pressing Problems at Its Weapons Plants" NYT Washington nd Matthew L. Wald (The Week in Review). p. 4E
- 20 Feb  
 "Arms Role Seen for Civilian Reactor" WP Cass Peterson p. A12.  
 "Reactor Could Be Used For Weapons, Study Finds" WSJ Washington nd Staff Reporter p. 3. ]
- 21 Feb  
 "Move to Activate Reactor Reported" NYT Matthew L. Wald p. A8.
- 13 Mar  
 "Safety Problems at Reactor Imperil Defense Goals" WP Cass Peterson p. A20.  
 "Reactors Operated 7 Years at Risk, 3 U.S. Units Have Cut Power to Ease Meltdown Danger" LAT Washington Rudy Abramson I p. 22.
- 18 Mar  
 "Nuclear Turning Point: Plant Conversion Plan a Challenge to U.S. Principle" NYT Matthew L. Wald p. A14.
- 30 Apr  
 "Toxic Air at Plutonium Plant" NYT Seattle April 29 (AP) p. B7.
- 1 May  
 "Senate Panel Blocks Funds for Weapon Reactor" NYT Matthew L. Wald p. A12.
- "Strategic Nuclear Reactor Dealt 2 Blows by Senators" LAT Washington Larry B. Stammer. I p. 1.
- 28 May  
 "Nuclear plant keeps Denver area on edge" CHI TRIB Broomfield, Col nd James Coates p. 5 I.
- 1 Aug  
 "Radioactive Gas Released" LAT Washington (AP) "A small amount of radioactive tritium gas was accidentally released into the atmosphere Friday from a nuclear weapons processing facility at the government's Savannah River plant in South Carolina, the Energy Department announced. A spokesman said no evacuation was required." [text] I p. 32.
- 4 Aug  
 "The Tritium Factor" (Op-ed) NYT Paul Leventhal and Milton M. Hoenig.
- 19 Aug  
 "Atom Worker Dies, 1976 Blast Victim. Harold McCluskey Absorbed Record Dose of Radiation in Accident at Hanford" NYT Seattle Aug 18 p. B6. (Obits)
- 22 Aug  
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"Groundwater is contaminated around all 16 federal nuclear weapons production plants, an Energy Department report says. The study also suggests that environmental problems uncovered so far are

- just the beginning. It says problems are most serious at the Rocky Flats, Colo., and Pantex, Texas, facilities. [text] WSJ p. 1.
- "Groundwater Tainted Near the Nation's 16 Nuclear Weapons Plants, Data Show" WSJ Washington, Shoba Purushothaman p. A5.
- 8 Dec
- "U.S. Waste Dumping Blamed In Wide Pollution at A-Plants" NYT Matthew L. Wald pp. A1-B18.
- "Safest Reactor is Closing Because It Rarely Runs" [gas-graphite reactor at Ft. St. Vrain, Col] NYT, Matthew L. Wald p. B18.
- "Nuclear Reactor Plan Meets Strong Opposition in South Carolina. Among the few testifying in support are top state officials" NYT Columbia, SC Keith Schneider p. B18.
- "Request for Repair Money Denied" NYT Washington Dec 7 (AP) p. B18.
- "Nuclear Units get Tighter Security. New Steps Taken to Protect Material With a Potential for Use [in] Atomic Arms" NYT Washington Dec 7 (AP) p. B19.
- "Weapons Plant Survey Lists 155 Polluted Sites" LAT Washington Robert Gillette I p. 1.
- 9 Dec
- "The Bomb on Mr. Bush's Desk" NYT( Editorial) p. A34. [Reagan questioned on shutdown at press conference, pp. A1-18&19]
- "In Our Back Yard? You Bet! Say Towns That Revere Nukes. To Hanford Plant's Neighbors In Washington State, Jobs and Identity Are at Stake" WSJ Richland, Wash Paulette Thomas pp. A1-A10.
- 10 Dec
- "Energy Dept. Dispute on Reactor Erupts in Public" NYT Cambridge, Mass. Dec 9 Matthew L. Wald p. 10.
- "Nature Helps Spread Taint of Nuclear Waste Into the Environment" NYT Matthew L. Wald p. 10.
- 11 Dec
- "Bomb Producers Torn by Doubts. The safety and environmental problems that threaten to stall the production of bombs in the United States could become a crisis for military strategy and for the future of nuclear energy. But there is already a crisis of confidence for the thousands of people who make the bombs. Article, page 36" NYT [Inside] p. 1.
- "Fear Corrodes Faith at Atomic Plants" NYT Pantex, Texas William Glaberson p. 36.
- "Bonus on Arms Cut Seen in a Shortage. Experts at Odds on Idea to Let Shrinking Level of Tritium Force Weapon Trims" NYT Matthew L. Wald p. 37.
- "\$50 Billion Sought For Weapons Plants. 20-Year Plan Includes Relocation, Reactors" WP R. Jeffrey Smith and Cass Peterson pp. A1-A11.
- "Energy Dept. Preparing to Restart 3 Savannah River Reactors in 1989" LAT Washington nd Robert Gillette and Douglas Jehl p. I 41.
- 12 Dec
- "U.S. Spent Billions on Atom Projects That Have Failed. Some Plants Abandoned. Record Leads to Uneasiness in Congress About Plans to Build New Reactors" NYT Washington Dec 11 Keith Schneider pp. A1-B12.
- "More on Those Troubled Reactors" WP (Editorial) p. A10.
- "Nuclear Weapons Plants Held to Need \$80 Billion " LAT Washington Robert Gillette I p. 1.
- "The Energy Department has submitted requests for long-term funding for the nation's aging nuclear weapons production facilities that total \$100 billion, sources said. The requests come amid much debate on the costs of cleaning up, modernizing and expanding the plants. Other estimates go as high as \$180 billion. (Story on Page B2) WSJ What's News p. A1.
- "Funds Sought For U.S. Nuclear Weapons Plants" WSJ Washington nd Shoba Purushothaman p. B2.
- "Nuclear Weapons Plant" cartoon CSM p. 15.
- 13 Dec
- "Cracks Found in Pipes At Nuclear Weapons Unit. Effort on Savannah River Restart Uncertain" WP Cass Peterson p. A3.
- "The Chicken Little Reactor" Review & Outlook WSJ [Editorial] p. A20.
- "No 'Runaway,' No Cover-Up at Savannah River" WSJ (Signed opinion by Forrest J. Remick, vice chairman of Reactor Safety Advisory Committee for SRP) p. A20.
- 14 Dec
- "Atom Plant Debate Grows. An advisory committee said that the Energy Department's safety plan for reopening a nuclear weapons reactor was inadequate. Page A20." NYT (Inside directory p. A1.)
- "Panel Faults Plan to Restart Reactor at an Arms Plant" NYT Washington Dec 13 Keith Schneider p. A20.
- "The Other Nuclear Inventory" WP (Editorial) p. A24.
- "Startup Plan For Reactor Is Rejected. Safety Issues Linger At Savannah River" WP Cass Peterson p. A3.

"Safety Unit Won't Endorse Restarting A-Arms Reactors" LAT Washington Robert Gillette I p. 27.

"A safety advisory committee called the Energy Department's restart strategy for the Savannah River nuclear-weapons facility inadequate. The panel was set up by the department earlier this year. Separately, the department said it will prepare an environmental impact statement on the Aiken, S.C., reactors. [Story on Page B4]" WSJ What's News p. A1.

"U.S. Plant to Restart Weapons Facility At Savannah River Called Inadequate" WSJ Washington nd Shoba Purushothaman p. B4.

15 Dec

"Public Plan Asked on Atomic Cleanup. Lawmakers Seek U.S. Review of Proposals on Upgrading Nuclear Arms Industry" NYT Washington Dec 14 Keith Schneider p. A31.

[Bush said at press conference that he has not yet focused on where to find the money for weapons-plant cleanup. NYT pp. A1 & D24]

16 Dec

"Energy Dept. Challenge. Next Secretary Will Face Bitter Dispute On Balancing Safety and Security Needs" NYT Washington Dec 15 Keith Schneider pp. A1-A24.

"New Cracks Found in Arms Reactor. Problem Is Called Serious Barrier to Resuming Tritium Production" WP Cass Peterson pp. A1-A20.

"More Cracks Found in Arms Reactor Pipe" LAT Washington [from WP] I p. 4.

17 Dec

"3 States Ask Waste Cleanup As Price of Atomic Operation" NYT Salt Lake City Dec 16 Matthew L. Wald, pp. 1-9.

"DOE 'Optimistic' on Waste Impasse. Meeting With Western Governors on Weapons Plant Shows Progress" WP Cass Peterson p. A4.

"Reactor Defects Traced to Builder; 'Unorthodox' Assembly May Have Caused Cracks in Pipes" LAT Washington Robert Gillette I p. 2.

"Plan is Offered to Resolve Impasse Over Storage of Radioactive Waste" LAT Salt Lake City (AP) I p. 2.

18 Dec

"New Crack Found in Closed Reactor at Savannah River. Further Delay Possible. Pipe Defects Are Discovered in Cooling System at Plant Necessary for Bombs" NYT Wilmington, Del Dec 17 Keith Schneider pp. 1-48.

"Rocky Flats: Death Inc." NYT (Op-ed) by Carl J. Johnson p. E23.

"Energy Secretary Warns Of New Arms-Plant Cuts. White House Told Funds Are Insufficient" WP Cass Peterson pp. A1-A22.

"Nuclear Weapons Plant Modernization Report Stalled; Budget Office Skeptical of \$80 Billion Price Tag" LAT Washington Robert Gillette and Tom Redburn I p. 26.

19 Dec

"Money for Reactor Found. Contrary to warnings, the White House says it found enough money in the next budget to operate nuclear weapons plants safely." Page B11 NYT (Inside guide p. A1.)

"White House Disputes Warning on Budget for Arms Plants" NYT Washington Dec 18 Special to the NYT p. B11.

"Workers Returning to Weapons Plant After Strike" NYT Cincinnati Dec 18 (AP) p. B10. [Fernald]

"Most Strikers To Return to Uranium Plant" WP Cincinnati Dec 18 (AP) p. A9.

"Another Crack Found in Nuclear Reactor" LAT Brief I p. 2.

"Uranium Processors End Strike" LAT Fernald, Ohio (AP) I p. 2.

"The White House said Reagan won't meet an Energy Department request for funds beyond what already has been allocated in the fiscal 1990 budget, which is to be submitted Jan. 9. The department reportedly sought an additional \$360 million to cope with problems at weapons plants in South Carolina and Colorado. [Story on Page C9]" [text] WSJ What's News column p. A1.

"Funds for Cleanup Of Weapons Plants Won't Be Increased" WSJ Washington nd Shoba Purushothaman p. C9.

20 Dec

"U.S. Hedges on A-Plant Cleanup And Opt's for 'Flexible' Approach" NYT Matthew L. Wald pp. A1-A25.

"Mood Is Sour as Workers Head Back to Ohio Weapons Plant" NYT Fernald, Ohio Oct 19 Kenneth B. Noble p. A25.

"Tritium Reactor May Stay Shut until the End of 1989" LAT Washington Douglas Jehl I p.1.

"Soviet Weapons Reactors also 'Old, Obsolete, Unsafe,' Study Finds" LAT Washington (UPI) I p. 22.

"Accord on Uranium May Be Near, Energy Department Says" LAT Washington (AP) I p. 22.

"Firm Seeks U.S. Gift for Its Workers, Wants \$7.5 Million in Severance for 6500 Who Aren't Losing Jobs" LAT Washington Robert Gillette I p. 23.

21 Dec

"Effort to Start 3 Military Reactors Emphasizes Reliability in 1990s" NYT Washington Dec 20 Keith Schneider pp. A1-A20.

"U.S. Reversal On Ohio Plant. The Department of Energy reversed itself again yesterday and said it would indeed keep a promise to Ohio to submit to a Federal court's authority in cleaning up pollution at a nuclear processing plant. But the department stressed that it did not want to set a precedent for agreements elsewhere. Article, page A21" NYT (p. A1 box.)

"U.S. Now to Keep Atom Plant Vow. Energy Dept. Reverses Itself Again — Agrees to Enter Cleanup Pact in Ohio" NYT Matthew L. Wald p. A21.

"DOE Pledges Pact On Ohio Cleanup" WP Columbus, Ohio (AP) p. A12.

"Atomic Plant Cleanup Funds Sought; Critics Say Reagan Request for \$900 Million is Insufficient" LAT Washington James Gerstenzang I p. 4.

"In Brief: Toxic Case Costs Rockwell \$47,500" LAT Denver (AP) Orange Co A p. 3.

"Energy Department To Continue Talks With Ohio Officials" WSJ Washington nd WSJ Staff Reporter p. B2.

23 Dec

"Arms Reactor Will Stay Shut in Hunt for Cracks" NYT Washington Dec 22 Keith Schneider p. A18.

"Nuclear Disarmament Isn't Imminent" WSJ (Letter by Alfred Cavallo about Dec 13 "Chicken Little" editorial) p. A11.

"Nuclear Weapon Financing Called Top U.S. Concern" WSJ Washington nd Shoba Purushothaman p. A12.

"Energy Chief Sees No Tritium Shortage" LAT Brief I p. 2.

25 Dec

"Rethinking the Arms Complex. Some Predict Cuts in Weapons Production" NYT Washington nd Keith Schneider (The Week in Review) p. E4.

[Bush news conference raised Energy Department secretary and nuclear-industry problems NYT pp. 1-23 & 22 excerpts]

26 Dec

"Nuclear Arms Industry Eroded As Science Lost Leading Role" NYT Richland, Wash nd Fox Butterfield pp. 1-39.

27 Dec

"U.S. Pessimistic on Reactor's Role in Atomic Arsenal. Problems at Three Units. Energy Dept. Doubts if Plant in South Carolina Is Able to Meet Tritium Needs" NYT Washington Dec 26 Keith Schneider pp. A1-A16.

29 Dec

"DuPont Hid A-Plant Flaws, U.S. Indicates" LAT Washington Robert Gillette I p.1.

30 Dec

"Nuclear Arms Plant Draws Record Toxic Waste Penalty" WP (UPI) p. A9. [Rocky Flats fined \$47,500 for toxic waste violations]

"Hot Potatoes" Herblock cartoon WP p. A18. ["U.S." juggling "Nuclear plant problems" and "nuclear waste"]

"Energy Chief Cites Pressure to Open Troubled A-Plant; Says Military Wants It Restarted Despite Structural Problems" LAT Washington Robert Gillette I p. 18.

"U.S. Fines Own A-Plant \$47,500 for Toxic Waste" LAT Washington (UPI) I p. 18. [Rocky Flats fines by EPA]

31 Dec "How a Vital Nuclear Material Came to Be in Short Supply," NYT Washington Dec 30 Michael R. Gordon, pp. 1-10.

## APPENDIX B

### Chronology of Magazine Articles 1980-88

1981

"Plutonium Production Slated to Increase" *Science* 9 Jan Marjorie Sun p. 147.

"Atomic gaffe" *The Nation* 21 March p. 349 [House Subcommittee on Oversight and Investigations study of security at nuclear weapons manufacturing plants]

1982

"Bomb Building Plan Runs into Trouble" *Science* 19 Nov R. Jeffrey Smith p. 774.

"How safe Savannah River reactors?" *Science* 27 March E. Marshall pp. 1563-4.

1984

"DOE Warned on Plans for Restarting Reactor" *Science* 20 Jan Colin Norman pp. 264-5.

"Plutonium by the ton" *Science* 1 May pp. 515-6.

"Environmental Retrofit Delays L-Reactor Restart" *Science* 3 Aug Colin Norman p. 488.

"Uncle Sam's risky bomb plants" *USN&WR* 25 May S. Budiansky pp. 75-6.

"Energy Department blurs line between civilian, military reactors" *Bulletin of Atomic Scientists* June M.M. Hoenig pp. 25-7.

1985

"A Nuclear Plant in Trouble" [Fernald] *Newsweek* Neal Karlen, David L. Gonzalez, and Mary Hager 20 May p. 33.

"Safety of DOE reactors questioned" *Science* 6 Nov E. Marshall p. 741 [National Research Council report]

1987

"End Game for the N reactor?" *Science* 2 Jan E. Marshall pp. 17-8.

"The bomb we never see" *Progressive* J. Schell [from the book by R. Del Tredici] pp. 25-8.

"Plutonium blues in Hanford" *Time* 12 Jan O. Friedrich p. 22. [reactor temporarily closed]

"A Nuclear Dump Springs a Leak" *Environment Newsweek* Sharon Begley with Mark Miller 28 Dec p. 65.

"DOE Shuts N-Reactor for Safety Repairs but Fears Persist" *Physics Today* February I. Goodwin pp. 63-4.

"Why is D.O.E. for food irradiation?" *The Nation* 7 Feb K. Terry pp. 142+.

"Savannah River's \$1-Billion Glass-maker. South Carolina will get the nation's first nuclear waste treatment plant; it is the largest of many cleanup projects at the Department of Energy." Also includes "The Greening of DOE." *Science* 13 March Eliot Marshall pp. 1314-7.

1988

The *Bulletin of the Atomic Scientists* "Making Warheads" issue. Jan/Feb 1988:

"U.S. nuclear weapons production: an overview" Thomas B. Cochran, William M. Arkin, and Robert S. Norris. pp. 12-16.

"Hanford's bitter legacy" Karen Dorn Steele pp. 17-23.

"Savannah reactors: on line and in trouble" *BAS* Jan/Feb Jack Horan pp. 24-28.

"The people vs. the complex" Daniel Charles pp. 29-30.

- "Laying waste to the environment" Dan W. Reicher and S. Jacob Scherr pp. 31-34.
- "Energy Department's 'good neighbor' policy" Bonnie J. Ram pp. 35-38.
- "A little tritium goes a long way" David Albright and Theodore B. Taylor pp. 39-42.
- "A case for producing nuclear material" Richard L. Wagner, Jr. pp. 43-45.
- "A case against producing nuclear material" David Albright and Christopher Paine pp. 46-49.
- "Pictures from an explosive world" Maclean's 11 Jan pp. 54-5. [from the book by R. Del Tredici]
- "The plutonium factor" Newsweek 14 March Melinda Beck p. 67
- "The bomb-business blues" Sierra May/June Cass Peterson pp. 33-4+.
- "Weapons Legacy: A \$110-Billion Mess?" Science 30 June (News & Comment) Mark Crawford p. 155.
- "DOE Pushes Case for New Defense Reactors. It says they are needed to ensure adequate tritium production. Critics challenge the assumptions, while engineering companies push to build two new facilities" Science 29 July (News & Comment) Mark Crawford, pp. 536-8.
- "DOE Asks for Two Weapons Reactors" Science 12 Aug (News & Comment) Mark Crawford, p. 784.
- "Reactor troubles highlight safety concerns" Science News 27 Aug J. Raloff p. 133. [Savannah River]
- "DOE wants new weapons reactors to replace aging, troubled ones" Physics Today Sept I Goodwin pp. 47-8.
- "The Tritium Factor as a Forcing Function in Nuclear Arms Reduction Talks" Science (Policy Forum) J. Carson Mark, Thomas D. Davies, Milton M. Hoenig, Paul L. Leventhal 2 Sept pp. 1166 & 1169.
- "Limits on Nuclear Materials for Arms Reduction: Complexities and Uncertainties" Science (Policy Forum) W.G Sutcliffe 2 Sept pp. 1167-8.
- "DOE Challenged on WIPP Site" Science Mark Crawford 23 Sept p. 1590
- "Nuclear safety. Tales of the undetected" The Economist 15 Oct Washington p. 37.
- "Big Trouble at Savannah River. Probes of a nuclear plant reveal safety flaws and near accidents" Time 17 Oct p. 55.
- "Nuclear Finger-Pointing. DuPont vs. the Energy Department" Newsweek 17 Oct p. 60.
- "Nuclear Power. Savannah River's scary saga" USN&WR 17 Oct pp. 13 & 15.
- "Savannah River Blues. DOE's new safety team runs into bureaucratic obstacles and an assumption among operators that 'reactors are safe unless demonstrated otherwise'" Science 21 Oct News & Comment Eliot Marshall, pp. 363-5.
- "Security at Weapons Labs" Science 21 Oct (News & Comment) Colin Norman p. 365.
- "Reactors Redux. A political fight develops over new military reactors" Scientific American November Tim Beardsley pp. 17-8.
- "Bad Scene at Rocky Flats. Once again, the feds are forced to shut down a nuclear facility" Time 24 Oct p. 77.

"Legal trouble for DOE's reactors"  
Science 28 Oct E. Marshall p. 508.

"Nuclear plants. Safety first"  
The Economist 29 Oct Washington  
DC pp. 31-3.

"The Nuclear Scandal" Time 31 Oct  
Cover and pp. 60-65.

"The year the bomb makers went  
boom. Three secret factories have  
closed, and costs are staggering"  
USN&WR 31 Oct Stephen Budian-  
sky w/ William J. Cook pp. 35-6.

"Why the Negligence Rap Won't  
Stick. To live and breathe in Ohio"  
USN&WR 31 Oct Stephen J. Hedges  
p. 36.

"Nuclear danger and deceit"  
Newsweek 31 Oct T. Morgenthau  
pp. 26-30.

"New reactors proposed" The  
Bulletin of the Atomic Scientists  
Nov D.W. Reicher & J. Salzman  
p. 28.

"High-tech protest against pluto-  
nium plant" The Bulletin of the  
Atomic Scientists Nov D.W.  
Reicher & J. Salzman pp. 27-30.

"Safety of DOE Reactors Ques-  
tioned. An independent review finds  
DOE's management of the weapons  
program to be 'confused...ingrown...  
self-regulated.' Herrington pledges  
reform" Science 6 Nov (News &  
Comment) p. 741.

"40 years of nuclear lies" The  
Nation 7 Nov p. 441.

"Nuclear negligence" Maclean's  
7 Nov W. Lowther pp. 54-5.

"Nuclear Support Services"  
Forbes 14 Nov S. Kichen & others  
pp. 282-3.

"Idaho battles weapons plants"  
The Nation 14 Nov S Ridley pp.  
484-6.

"Day of Reckoning. Because of the  
sorry state of the Energy Depart-  
ment's nuclear warhead complex,  
the nation confronts a genuine crisis  
if it is to maintain and modernize its  
atomic arsenal" National Journal 26  
Nov David C. Morrison pp. 2901-5.

"Nuclear Costs. Yet another budget-  
busting problem that awaits George  
Bush in the Oval Office: aging U.S.  
nuclear-weapons plants. Cost esti-  
mates of cleaning up environmental  
problems at the facilities have  
soared to \$140 billion to \$175  
billion. And an Energy Department  
study just sent to the National  
Security Council calls for closing  
some antiquated plants and building  
new ones at a cost of \$150 billion.  
DOE's nuclear-weapons budget now  
is \$8 billion a year." Newsweek 28  
Nov (Periscope) p. 7.

"DOE's Guide to Weapons Plant  
Spills" Science 16 Dec (News &  
Comment) Eliot Marshall  
pp. 1500-01.

"Who Gets the Nuclear Waste? A  
'not in my backyard' summit of gov-  
ernors" Newsweek 19 Dec Between  
pp. 32-9.

"Weapons Reactor Restart Set Back"  
Science 23 Dec (News & Comment)  
Mark Crawford p. 1630.

## APPENDIX C

### *Network Television Programs on Weapons Production*

26	Jan	1977	NBC	"Danger! Radioactive Waste"
6	June	1985	ABC	"The Fire Unleashed" Closeup
24	April	1987	ABC	"The Bomb Factories" Closeup

### *Log of TV-Network News Items for October-December 1988* (Vanderbilt News Archive)

Date	Network	Subjects	Time (minutes)
<b>October 1988</b>			
4	ABC	Savannah River Plant (SRP)	2:10
6	CBS	SRP	2:20
	NBC	SRP	2:20
9	ABC	SRP & Threat to Nuclear Readiness	:30
10	CBS	Lax Security, SRP & Tritium	2:00
11	ABC	Security at SRP, Rocky Flats (RFP) Weapons production, cannibalization to save tritium	3:40
	CBS	Rocky Flats, SRP Lax security at plants	2:00
	NBC	Rocky Flats, SRP Lax security at plants	2:20
14	ABC	Fernald law suit Congressional Hearings	1:50
	CBS	Congressional Hearings	2:50
	NBC	Three Rocky Flats workers injured Fernald Hearings	2:20
15	NBC	Fernald residents mad that government knew of releases	2:50
17	ABC	CDC Hanford Health Study Fernald residents angry	2:10
	NBC	CDC Hanford Study	2:10

Date	Network	Subjects	Time (minutes)
18	ABC	Ohio Gov. Celeste's letter to Pres. Reagan	:30
	NBC	Gov. Celeste	:30
19	CBS	SRP reopening, Fernald Plant	2:30
	NBC	SRP, tritium production	4:50
24	CBS	Rocky Flats boxcar with waste shipment	2:10
26	CBS	RFP Cleanup SRP Problems	2:00
	NBC	RFP and Fernald, Rocky Flats	2:20
27	ABC	House Armed Services Comm.	:20
	NBC	SRP study	:30
<b>November 1988</b>			
11	ABC	EPA & GAO study, SRP, Hanford problems	2:30
17	NBC	Rocky Flats boxcars	2:10
30	CBS	SRP radiation, tritium defense issue, Fernald	2:10
<b>December 1988</b>			
2	CBS	Fernald claims	2:10
3	NBC	Fernald claims	2:40
11	NBC	SRP startup plans, tritium shortage debate, Fernald and Rocky Flats	2:30
12	ABC	Safety at Rocky Flats and Fernald, DOE spending plans and budget request	2:00
14	CBS	SRP problems and tritium debate Bush on nuclear arms control and cost of cleaning up plants	:20
16	ABC	New cracks at SRP, tritium need v. safety	4:40
	CBS	SRP safety, weapons waste	2:20
18	ABC	Dispute among DOE & Governors Washington Post story on DOE/White House dispute	:30
19	CBS	SRP Reactor cracks	1:40
27	CBS	Fernald & Rocky Flats SRP restart debate	2:00