

Rocky Flats Site History

*events leading to the creation
of the weapons complex
and events at the Rocky Flats Site
from the 1930s to present
by Pat Buffer*

The 30s:

1934 — The Italian physicist Enrico Fermi produces fission.

December 1938 — Two scientists in Nazi Germany, Otto Hahn and Fritz Strassmann, discover the process of fission in uranium. Lise Meitner, Hahn's former colleague (a refugee from Nazism then staying in Sweden) and her nephew, Otto Frisch, confirm the Hahn-Strassmann discovery and communicate their findings to Danish Nobel laureate Niels Bohr.

January 26, 1939 — Bohr, accompanied by Fermi, reports on the Hahn-Strassman results at a meeting on theoretical physics in Washington, D.C.

August 1939 — Hungarian refugee scientists Lee Szilard, Edward Teller and Eugene Wigner, fearing that the energy released in nuclear fission might be used in bombs by the Germans, persuade Albert Einstein, the century's premier physicist, to send a letter to President Franklin D. Roosevelt informing him of German atomic research and the potential for a bomb. This letter prompts Roosevelt to form a special committee to investigate the military implications of atomic research.

October 1939 — Roosevelt decides to act and appoints Lyman J. Briggs, director of the National Bureau of Standards, head of the Advisory Committee on Uranium.

November 1939 — The Uranium Committee recommends that the government purchase graphite and uranium oxide for fission research.

The 40s:

June 1940 — Vannevar Bush, president of the Carnegie Foundation, is named head of the National Defense Research Committee. The Uranium Committee becomes a scientific subcommittee of Bush's organization.

February 1941 — Glenn T. Seaborg's research group at a radiation laboratory at the University of California in Berkeley, discovers plutonium.

March 1941 — Seaborg's group demonstrates that plutonium is fissionable.

May 1941 — Seaborg proves plutonium is more fissionable than uranium-235.

October 1941 — Bush briefs Roosevelt and Vice President Henry A. Wallace on the state of atomic bomb research. Roosevelt instructs Bush to find out if a bomb can be built and at what cost. Bush receives permission to explore construction needs with the Army.

January 1942 — Roosevelt responds to reports from Bush and approves production of the atomic bomb.

June 1942 — President Roosevelt approves the recommendation to proceed to the pilot plant stage and instructs that plant construction be the responsibility of the Army. The Army delegates the task of plant construction to the Corps of Engineers.

August 1942 — The Manhattan Engineer District is established in New York City. It is formed to secretly build the atomic bomb before the Germans.

August 1942 — Seaborg produces a microscopic sample of pure plutonium.

September 1942 — Colonel Leslie R. Groves is appointed head of the Manhattan Engineer District. He is promoted to Brigadier General six days later. Groves selects the Oak Ridge, Tennessee, site for the pilot plant.

October 1942 — E.I. du Pont de Nemours and Company agrees to build the chemical separation plant at Oak Ridge. Groves decides to establish a separate scientific laboratory to design an atomic bomb.

November 1942 — The decision is made to skip the pilot plant stage on the plutonium, electromagnetic and gaseous diffusion projects and go directly from the research stage to industrial-scale production.

November 1942 — Groves selects Los Alamos, New Mexico, as the bomb laboratory (code-named Project Y). J. Robert Oppenheimer is chosen laboratory director.

December 2, 1942 — A group of scientists led by Physicist Enrico Fermi, knowing that at least one kind of uranium nucleus would split when a neutron was absorbed, achieve the first man-made self-sustaining nuclear chain reaction in a lab at the University of Chicago.

December 28, 1942 — Roosevelt approves detailed plans for building production facilities and producing atomic weapons.

January 1943 — Groves selects Hanford, Washington, as the site for the plutonium production facilities.

February 1943 — Construction of Y-12 begins at Oak Ridge.

March 1943 — Researchers begin arriving at Los Alamos and, in April, bomb design work begins.

Summer 1943 — The Manhattan Engineer District moves its headquarters to Oak Ridge.

March 1944 — Bomb models are tested at Los Alamos.

August 1944 — Bush briefs General George C. Marshall, informing him that small implosion bombs might be ready by mid-1945 and that a uranium bomb will almost certainly be ready by August 1945.

February 1945 — Los Alamos receives its first plutonium.

April 1945 — After the death of Roosevelt, Groves briefs President Harry S. Truman on the Manhattan Project.

July 16, 1945 — Los Alamos scientists successfully test a plutonium implosion bomb, code named Trinity, near Alamogordo, New Mexico, on what is now the White Sands Missile Range.

August 1945 — The gun model uranium bomb, called Little Boy, is dropped on Hiroshima, Japan, and the implosion model plutonium bomb, called Fat Man, is dropped on Nagasaki, Japan; Japan surrenders.

August 1, 1946 — President Truman signs the Atomic Energy Act (AEA) of 1946.

July 1, 1947 — In accordance with the Atomic Energy Act, all atomic energy activities were transferred from the Manhattan Engineer District to the newly created United States Atomic Energy Commission (AEC).

August 15, 1947 — The Manhattan Engineer District is abolished.

The 50s:

January 1950 — President Truman orders the AEC to develop the hydrogen bomb (H-bomb).

June 1950 — The Korean War begins as North Korea forces invade South Korea.

January 1951 — The AEC singles out Dow Chemical Company of Midland, Michigan, as having the scientific and manufacturing experience necessary for the new AEC project that would have a mission of machining a plutonium component for use in atomic weapons. F.H. Langell, who had been with Dow since 1929, was appointed general manager.

January 23, 1951 — Instructions were received at the AEC's Santa Fe Operations office to conduct a site location survey; this was referred to as Project Apple.

The Austin Company of Cleveland, Ohio, was almost immediately selected as the principal contractor for both architect engineering and construction.

March 1951 — Approval was given for the site in the Denver area which, among many factors, satisfied a climatic criteria, was near a metropolitan city with its labor market and an area attractive enough to aid the recruiting of employees from other cities.

March 1951 — The name Rocky Flats was suggested, discussed and finally chosen.

At the start of construction, the gates were opened to the press for the first time.

March 23, 1951 — News of the Rocky Flats project was made public. It caught the Denver area by surprise; no one suspected an estimated \$45 million AEC plant was being planned for the area. Information about the plant was hidden in a cloak of secrecy.

Construction of temporary structures on the plantsite began in mid May when a small guard shed was built. It was not until July 10, 1951, that excavation began on Building 91, the first permanent building. In July, the Rocky Flats Division moved its headquarters and approximately 40 personnel from Midland, Michigan, to share office space with The Austin Company in a Denver building.

In early 1952, personnel located at the Denver office were moved to the plantsite and many new buildings were constructed and occupied.

February 1952 — The AEC disclosed it had let contracts for \$2,500,000 of construction at the plant.

April 1952 — Operations began on regular production materials.

July 1, 1952 — AEC personnel were organized as the Field Office at Rocky Flats. Gilbert C. Hoover, a retired Rear Admiral from the U.S. Navy, was named as manager.

August 1952 — Admiral Hoover conducted an exclusive interview with *The Denver Post*. Reporters were escorted under guard to Hoover's office inside the heavily guarded gates. Hoover revealed construction progress at the plantsite.

At the end of 1952, employment at Dow Rocky Flats was 637, including 25 AEC employees.

January 1, 1953 — The average wage of all workers of the Dow Chemical Company at Rocky Flats was \$2.31 per hour.

Mid-year 1953, the first products from the production building were completed and shipped offsite.

May 17, 1953 — The first labor agreement to be reached at the Rocky Flats Plant was announced by Dow and the Denver Metal Trades Council and covered approximately 400 employees.

September 1953 — For all practical purposes, Austin Company's construction program was finished. Overall cost, exclusive of land cost, was \$43,269,519. This was about \$1.25 million under the original \$45 million estimate when the project started.

August 1954 — The Atomic Energy Act of 1954 was passed to promote the peaceful uses of nuclear energy through private enterprise and to implement President Dwight D. Eisenhower's Atoms for Peace Program.

At various times during 1955, AEC officials disclosed plans for expansions at Rocky Flats through construction of new buildings and related facilities and modifications to existing buildings.

July 1956 — AEC's 20th semi-annual report identified Rocky Flats Plant as a "weapon production facility," with no further explanation of the plant's secret function.

June 14, 1957 — Two employees were taken to plant Medical following a small explosion. The two were treated for minor cuts and kept in Medical for tests to determine whether they were exposed to radiation. A chemical operator had been working with a vessel containing hydrogen peroxide inside a sealed glovebox. The vessel exploded, forcing glass through the gloveports and cutting both the chemical operator and a health physics monitor who was watching the operation.

June 16, 1957 — *The Denver Post* reported that for the first time on record, the Denver public relations office of the AEC's Rocky Flats Plant admitted that handling plutonium was part of the plant's routine business. The statement came as a result of reports about the two workers that had been injured in the explosion at the plant on June 14.

September 11, 1957 — A fire occurred in a glovebox in plutonium process Building 771. It occurred in a fabrication development line, resulting in contamination of the building. Estimated property loss was \$818,600.

In 1958, an incinerator used for burning plutonium-contaminated waste was installed in Building 771. The incinerator was the only one of its kind in the country and perhaps in the world. Designed and built by plant personnel, the prototype functioned like an industrial incinerator but its real heart was a series of filters, scrubbers and heat exchangers designed to purify toxic gases and other byproducts of the burning process.

September 17, 1959 — Dow Rocky Flats established a safety record of seven million manhours of work without a disabling injury. The safety figure eclipsed all performances by Colorado industry in addition to the 15 other Dow plants and the eight major facilities comprising the Albuquerque, New Mexico, operations office of the AEC.

Employment at the end of 1959 was 1,813 employees.

The 60s:

In 1960, Dow began making its environmental monitoring site survey data available to news media. This stemmed from a Presidential directive which came to Dow as an AEC request for environmental data to be transmitted to the Department of Health, Education and Welfare.

June 22, 1960 — Dr. Leland I. Doan, President of The Dow Chemical Company, visited the site and presented a bronze plaque representing the President's Safety Award in recognition of the excellent safety record at Rocky Flats. Dr. Doan's speech and General Manager F.H. Langell's comments were broadcast throughout the plantsite over the Plant Disaster Warning System; it was the first time this system had been put to such use.

November 30, 1960 — The first aerial photograph of the Rocky Flats Plant was published in *The Denver Post*. Along with the photo, the caption stated, "Little is known about the plant's work, except that it handles radioactive materials and some of the very rare minerals coming into new prominence in the defense program."

In 1961, Dow received many awards for number of hours worked without a disabling injury.

Early in April 1962, it was announced that the AEC had awarded an engineering architect contract for a \$3 million building at the plant to house facilities for processing plutonium. The plant had nearly doubled in size in its 10 years of operation and was valued at \$78 million.

April 9, 1963 — 18 members of the area press attended a breakfast, a short bus tour of the plantsite and a tour of the plant Health Physics department. This was the first such function held at the plant since it was built in 1951.

The first patent granted for a Rocky Flats invention was assigned to John R. Mann, health physicist, and Art Wainwright, a former employee. The patent was for an automatic hand counter for alpha radiation. It was granted June 11, 1963, and was the result of work which had started in November 1958.

June 12, 1964 — A chemical operator in Building 76 received severe lacerations necessitating amputation of his finger and thumb as a result of an explosion during a de-greasing operation. The explosion occurred during plutonium chip de-greasing which involved the dipping of plutonium chips contained in a stainless steel can with a screen bottom into a carbon tetrachloride bath.

October 8, 1964, District 50, United Mine Workers of America, was certified by the National Labor Relations Board (NLRB) regional office as sole union bargaining agent for more than 1,700 employees at the plant.

October 15, 1964 — The first day of traffic on a new road built to access the plant from the east. The road provided easier access to the site from Broomfield, Arvada, Denver, Lafayette and Louisville.

In 1964, security guards voted for representation by the International Guards Union of America.

At the end of January 1965, it was announced that all enriched uranium work being done at Rocky Flats would be transferred to Oak Ridge as an economy measure within the AEC operation. This transfer, along with President Lyndon B. Johnson's January 1 announced cutback in weapons production, were principal causes in a reduction of 256 employees.

May 1965 — 35 representatives of the press, academic institutions and private and industrial laboratories visited the plantsite. They toured the new \$3.3 million research and development building (Building 79) and a \$1.1 million building to house a nuclear safety laboratory (Building 86).

October 15, 1965 — A flash fire occurred in Building 77 where maintenance men were clearing a clogged oil coolant line. Cause of the fire was attributed to spontaneous ignition of plutonium chips. The fire was extinguished almost immediately. Prior to being extinguished, the fire burned through a temporary plastic enclosure used to control contamination where the maintenance personnel were working. Although contained in the work area, the fire resulted in the spread of contaminants within the confines of Building 76 and 77.

In 1966, Colorado Governor John Love signed a proclamation declaring March 23 as "Rocky Flats Day." The governor cited the plant for its stability of employment, its contributions to the economic health of Colorado, its leadership in industry, and its importance to the defense of the U.S.

In 1966, the plant marked its 15th anniversary with a capital investment of more than \$110 million and employment of 2,900 persons.

April 11, 1966 — The first contract between Dow and the International Guards Union of America (IGUA), Local 64, was signed. The IGUA had been certified in 1965 as bargaining agent for the plant protection force which included both firemen and security guards. The average hourly rate for guards and firemen was \$2.91.

July 28, 1967 — Roads within the plantsite were assigned names, making them easier to identify and remember, and street signs were installed.

In 1967, Rocky Flats recorded its first fatality after an employee fell from the track of a heavy tractor and broke his hip; death followed post-operative complications.

In 1967, a major incident occurred when the large scale leaking of waste oil drums (903 Pad) was detected. 3,570 drums containing machining lubricants and chlorinated solvents contaminated with plutonium were stored in the southeast corner of the plant from July 1958 to final removal June 5, 1968. Leakage occurred between 1964 and 1967. Most drums were removed by 1967 but it was discovered that low-level contaminated soil had been re-suspended into the air and re-deposited. The pad was covered with gravel fill July 1969 and was coated with asphalt.

In 1968, buildings were assigned three-digit identification numbers.

Building 559, the plutonium analytical lab, was opened in October 1968.

January 30, 1969 — Employee traffic entering the site was slowed to a near standstill by wind gusts to 100 mph. Struggling against the wind to get to their work areas, three employees were slightly injured when they were knocked to the sidewalk by the strong gusts.

May 11, 1969 — A major fire occurred in Building 776/777 gloveboxes. First notice of the fire came at 2:29 p.m. when an alarm triggered by a glovebox overheat system alerted firemen. No one was injured in the blaze, but some 33 employees were treated for contamination. The fire was under control by 5:30 p.m. 300 employees participated in the cleanup and decontamination effort. The fire occurred from spontaneous ignition of a briquette of scrap plutonium alloy metal contained in a small metal can, probably without a lid. The fire resulted in \$26.5 million property loss. There was an estimated plutonium release of 210 picocuries, all contained on plantsite. Decontamination of the area took approximately two years. The incident resulted in many new safety features being implemented, i.e., water sprinklers, more fire walls, and performing plutonium work in an inert atmosphere to prevent a similar incident.

Employment at the end of 1969 was 3,534.

The 70s:

January 1970 — The National Environmental Policy Act of 1969 was signed, requiring the Federal government to review the environmental impact of any action that might significantly affect the environment.

January 25, 1970 — Members of the Boulder Workshop in Nonviolence hiked from the Boulder County Courthouse to Rocky Flats in protest against "the many institutions of society which serve death and destroy life." The hike signaled the start of a five-day protest.

A Rocky Flats Family Day was held May 2-3, 1970. This was the first opportunity in the plant's 19 years of existence for employees' families to see the facility. Attendance to the event was approximately 7,700 people. Invited members of the press also toured the plant, and 15 buildings were open for the event.

The plant's new production facility, Building 707, began production involving radioactive materials on May 25, 1970.

Building 111 was evacuated the morning of August 6, 1970, after Plant Protection personnel received an offsite anonymous phone call stating that a bomb had been placed in the building. A search revealed the threat was false.

In 1970, a Waste Management group was established to minimize any potential environmental problems that could occur because of radioactive and chemically contaminated waste generated by plant operations.

Striking employees of Local 15440, International Union of District 50, Allied and Technical Workers of the United States and Canada, returned to work on September 5, 1970, after a 10-week walkout which began June 28.

December 1970 — The U.S. Environmental Protection Agency was formed.

Newswire was introduced on plantsite in 1971. The system, very similar to an answering service, was updated each weekday morning and when events of major news would break.

In 1971, initial studies were completed for enclosing plutonium work in an inert atmosphere. Its application to a large-scale production operation was a first for Rocky Flats.

August 24, 1971 — Dow Chemical announced that two men had suffered minor radiation contamination and two rooms were contaminated at the plant. Source of the contamination was "an apparent chemical reaction" in a can containing plutonium turnings in a plutonium recovery building.

Actions were taken during 1971 to protect employees against personnel contamination. One was a combined TLD-Security badge for employees frequently in production areas. The second action was a policy prohibiting beards in production areas — clean-shaven faces were determined a must for good respirator fit.

In 1971, the X-Y retriever went into operation, allowing the operator to place stored plutonium on the assembly line using slave arms.

October 18, 1971 — The massive decontamination effort following the May 1969 fire was completed. More than 600 employees had been directly involved in the decontamination of Buildings 776/777.

August 26, 1972 — A Dow-Rocky Flats Family Day was held with several buildings opened to Dow families for the first time. Those were 776/777 and 444 manufacturing facilities, 865 and 991 research facilities, the library in 706, and the 750 ceramics laboratory.

Word was received from Washington, D.C., September 22, 1972, on the approval of \$6 million for the purchase of the buffer zone around Rocky Flats. The Corps of Engineers in concert with the AEC arranged for the purchase of the 4,600 acres.

The right to negotiate for a union shop was decided December 14, 1972, when an election was conducted by the Colorado Department of Labor. Local 15440, District 50, Allied and Technical Workers merged with the United Steelworkers of America.

January 2, 1973 — The "Life is Fragile - Handle With Care" safety program was kicked off. The new safety program, designed to increase safety awareness in employees' homes and communities, was put together by and for employees. The program received much recognition in the community.

February 1, 1973 — A carpenter was in satisfactory condition following an accident related to the malfunction of the supplied air system servicing Buildings 776, 777 and 771. The employee was apparently overcome by fumes and stumbled six feet into a stairwell, suffering a skull fracture. He was the only one of 12 workers in supplied air at the time of the malfunction to sustain an injury. It was believed that one of two dryers in the system had overheated, resulting in either pyrolysis or open combustion of filters between the dryers and supplied air distribution points.

Colorado Constructors, Inc. was awarded a \$320,000 contract for site preparation of a new plutonium recovery and waste treatment facility, Building 371. Ground was broken early in April 1973.

July 1973 — Employees were informed that about 300 salaried and hourly employees would be laid off as a result of a cutback in the AEC budget.

September 1973 — It was revealed that a tritium release had been discovered in a water sample taken from Walnut Creek by the Colorado Department of Health (CDH). This occurred as a result of unanticipated presence of tritium in scrap material shipped by Lawrence Livermore Laboratories to Rocky Flats (March 19) for plutonium recovery and reprocessing. The tritium was first discovered May 24 in a water sample taken by CDH from Walnut Creek. An Environmental Protection Agency (EPA) report indicated 50-100 curies of tritium reached Great Western Reservoir (Broomfield's source of drinking water). EPA concluded "Public health impact of these radiation doses is considered to be minimal based on established criteria." The plant increased activities and improved capabilities to detect tritium and other beta activity emissions.

December 10, 1973 — Dow and the DOE's Rocky Flats Area Office officials were advised that the contract for the operation of the plant would be opened for competition for the contract term commencing July 1, 1975.

January 24, 1974 — An agreement between the AEC and the State of Colorado was reached for state health officials to have free access to the fenced security areas on plantsite. The health officers would have security clearances.

February 4, 1974 — The AEC announced that "significant" amounts of previously unreported radioactive plutonium had been found above ground at Rocky Flats and that they were looking for the best way to cover the soil so the cancer-causing substance isn't stirred up and spread by the wind. Officials had pinpointed 2.85 acres where three curies, or about seven grams, of plutonium were scattered on the ground. Nearby, plutonium leaked from drums of contaminated oil several years previous, but the incidents appeared to be separate. Existence of several burial sites containing both radioactive wastes and non-radioactive chemicals were also revealed.

March 8, 1974 — Dow Chemical announced they would not submit a proposal for continuing operation of Rocky Flats. In May, it was revealed that the AEC had invited seven firms to submit proposals for operation of Rocky Flats; and November 21, Atomics International Division of Rockwell International was named as the operating contractor for Rocky Flats beginning July 1, 1975.

March 1974 — The AEC established the Formerly Utilized Sites Remedial Action Program (FUSRAP) to identify former Manhattan Project and AEC sites that were privately owned but needed remedial action.

July 1974 — In recognition of superior performance in safety, environmental control, production and energy use reduction, Dow employees at Rocky Flats were each paid cash awards equivalent to 6 1/2 percent of their 1973 base pay. The special award to employees, totaling \$2,280,000, was equivalent to the amount of the fee Dow would have been paid for managing Rocky Flats during FY1975.

Following their 1974 election to office, Governor Richard Lamm and Congressman Tim Wirth appointed a citizens' task force to prepare a report on the public and employee safety issues surrounding Rocky Flats.

In 1974, more direct emphasis was placed on research activity with the formation of Health Sciences, charged with the various aspects of radiation monitoring and employee health; and Environmental Sciences and Waste Control, overseeing all waste control activity and environmental monitoring.

October 11, 1974 — President Gerald Ford signed the Energy Reorganization Act of 1974. With that signing, the Atomic Energy Commission was abolished and the Energy Research and Development Administration (ERDA), the Nuclear Regulatory Commission (NRC), and the Energy Resources Council were established.

The decision to remove soil containing elevated levels of plutonium from an area on plantsite east of the "pad" was announced January 7, 1975, at the monthly environmental information exchange of Dow and AEC officials with state and county officials. The operation would begin in spring or summer 1976.

January 9, 1975 — The ERDA was activated and President Ford appointed Robert C. Seamans, Jr., as Administrator.

In 1975, a final draft of an Environmental Protection Agency (EPA) report on "Rocky Flats cattle" showed that cattle which have grazed east of Rocky Flats have essentially the same plutonium concentrations in their organs, tissue and bones as found in cattle pastured at the Nevada Test Site. It also showed the levels of both uranium and plutonium-239 found in the cattle are similar to those found in the general U.S. population from fallout.

July 1, 1975 — Rockwell International took over operation of the plant. Plant management began conducting regular briefings to the local press.

July 18, 1975 — Rockwell began the first regularly scheduled public tours of the plant, and the *Rockwell News* was introduced as the new four-page employee newspaper to be published every other Friday.

August 5, 1975 — It was announced that a detailed investigation was under way to determine the exact circumstances surrounding two separate contamination incidents that had occurred the week previously. The release of contaminants in two plutonium areas had resulted from punctures in gloves during glovebox operations.

October 1975 — The Lamm-Wirth Task Force report was issued, recommending that Congress and the President of the United States should assess the Rocky Flats Plant giving consideration to phasing out its nuclear weapons operations and converting it to another use, while maintaining the economic integrity of the plant, its employees and the surrounding communities.

In early 1976, Colorado State University at Fort Collins, under a contract with the ERDA began a two-year program to determine whether the approximately 100 deer that roam Rocky Flats ingest any plutonium and consequently transport it back up into the hills. The University was already under contract to ERDA to study plutonium in soil, vegetation and small mammals at Rocky Flats.

In 1976, Rocky Flats was selected as test and research center for Small Wind Energy Conversion Systems.

June 28, 1976 — A decontamination crew began removal of contaminated soil from a 22,000-square-foot area near the east gate. The contamination resulted from a leak in waste storage cans discovered in 1968. The contaminated area was covered with an asphalt pad at that time to prevent winds from blowing the contaminated surface soil throughout the nearby countryside. As a result of the asphalt construction, the contaminated soil was blown and settled near the "lip" area. An estimated 200 crates or approximately 660,000 pounds of contaminated soil would be shipped in about 20 trailer loads to the federal waste storage facility in Idaho.

August 1976 — More than 1,333 Rocky Flats employees who earned \$5 coupons for working one million accident-free hours turned the coupons into a \$6,935 donation to victims of the Big Thompson Canyon flood. The safety coupons donation and \$270 in additional cash was a spontaneous effort by the employees.

August 1976 — Employees voted to establish the Donate Once (DO) Club to provide a single channel for employees to contribute to charitable, welfare and educational institutions.

October 1976 — The Resource Conservation and Recovery Act (RCRA) was passed to protect human health and the environment from the potential hazards of waste disposal.

In 1976, as a result of the Lamm-Wirth Task Force recommendation, the Rocky Flats Monitoring Committee was appointed with 20 members selected from interested citizens.

February 20, 1977 — More than 30 newspaper and television reporters from around the nation toured Rocky Flats to look at the six wind energy machines operating at the new National Test Center for Small Wind Energy Conversion Systems.

The previous continuous mark of 5,000,000 safe hours ended in 1977 when a Rocky Flats employee was killed in an auto-pedestrian accident while jogging along the east access road.

In 1977, a Channel 7 reporter conducted a series of interviews with five Rocky Flats. The reporter interviewed the random sampling of employees after *The Straight Creek Journal*, a Denver-area weekly, published a news article titled, "Rocky Flats Plant Employees Fight Back." Featured in the article were reproductions of the plant newspaper and comments from irate employees who said they were tired of the treatment the plant had received from the media.

August 4, 1977 — President Jimmy Carter signed the Department of Energy Organization Act, therefore abolishing the Federal Energy Administration and ERDA.

October 1, 1977 — The U.S. Department of Energy (DOE) was activated and consolidated Federal energy programs and activities with a greatly expanded role from that of the ERDA. James R. Schlesinger was appointed the first Secretary of Energy.

August 9, 1978 — About 75 protestors, including activist Daniel Ellsberg and poet Allen Ginsberg, were arrested after plant officials refused a suggestion to close Rocky Flats in commemoration of the bombings of Hiroshima and Nagasaki. The arrests culminated three days of protests and seminars.

The DOE decided to de-centralize management of the Transuranic (TRU) Waste Management Program in 1978, and Rocky Flats was assigned program management responsibility for TRU waste generated at DOE facilities.

March 28, 1979 — The worst commercial nuclear accident in the U.S. occurred as equipment failures and human mistakes led to a loss of coolant and partial core meltdown at the Three Mile Island reactor in Middletown, Pennsylvania.

More than 9,000 protestors showed up at the plant April 28-29 for a two-day demonstration to protest the production of nuclear weapons. There were 287 arrests.

In July, the two-story, 3,000-square-foot "trash compactor," officially known as a Fluidized Bed Incinerator housed in Building 776, made its first continuous 108-hour run. It brought to a close nine years of research and development on the project. The \$2 million incineration facility was designed to demonstrate a process for combustion and reduction of low-level transuranic wastes generated at the plant.

August 26, 1979 — A pro-nuclear rally, "Power for the People," sponsored by Citizens for Energy and Freedom (a grassroots organization dedicated to promoting the continued development of nuclear power) was held at the plant's northern boundary and attracted about 16,000 nuclear supporters.

September 26, 1979 — A group of seven persons experienced in pacifist civil disobedience tactics cut through a boundary fence at Rocky Flats and trespassed on the grounds. They had come in off Indiana Avenue about 5 a.m., cut a few cattle fences and had gotten up on a hill with their lighted candles. They were about a mile outside the plant security chain-link fence when they were detained.

Employment at the end of 1979 was 3,324.

The 80s:

An open house was held March 22-23, 1980, to introduce the \$215 million Building 371/374 Plutonium Recovery and Waste Treatment Facility. Then, on April 10, a public dedication ceremony was held and selected areas of the facility were then opened to more than 50 invited guests and more than 30 members of the media.

April 19, 1980 — The annual anti-Rocky Flats rally attracted approximately 10,000 protestors to the northeast corner of the site at Highway 128. The rally was organized by the Rocky Flats Coalition, the Rocky Flats Truth Force and American Friends Service as well as other student and community organizations. The peaceful rally operated in a festive atmosphere while speakers addressed the issue of converting/shutting down Rocky Flats.

A state emergency exercise was tested for the first time September 9. It was an exercise of the Colorado Radiological Emergency Plan. The full-scale drill culminated a series of emergency tests for the plant that began in early May.

December 1980 — The Low-Level Radioactive Waste Policy Act was passed, making states responsible for the disposal of their own low-level nuclear waste.

December 1980 — The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund) was passed in response to the discovery in the late 1970s of a large number of abandoned, leaking hazardous waste dumps. Under Superfund, the Environmental Protection Agency (EPA) identified hazardous sites, taking appropriate action, and seeing that the responsible party pays for the cleanup.

The trial burn on May 19, 1981, of one gallon of polychlorinated biphenyls (PCBs) mixed with four gallons of kerosene in the fluidized bed incinerator was called a success. EPA officials said the burn was a significant demonstration of a new technology developed at the facility.

Less than a month after the introduction of radioactive materials into Rocky Flats' new Plutonium Recovery Building 371, the first button of plutonium metal, meeting all production purity specifications, was produced on August 25, 1981.

In late 1981, Rockwell's Transuranic Waste Systems Office (TWSO) at Rocky Flats called together representatives from DOE nuclear facilities to review work being done nationally to manage transuranic (TRU) wastes. Rockwell was DOE's lead contractor for the national program to plan and oversee the management of TRU wastes from point of generation to long-term isolation.

February 1982 — A DOE study prepared by Batelle in Columbus, Ohio, was released. The study titled "The Social and Economic Impacts of Changing Missions at the Rocky Flats Plant," was one of 12 parts to the DOE's Long-Range Rocky Flats Utilization Study, and stated there would be an economic impact on the Denver area if Rocky Flats were to relocate. It stated that the Denver metro region could lose as much as \$73 million in 1981 dollars, more than 3,500 jobs and an economic payroll in excess of \$40 million if only the plutonium operations were moved; if the entire plant were relocated, the loss would be over \$127 million in 1981 dollars and a total of more than 6,000 jobs.

March 1982 — The switch was thrown to officially turn on the lights to the Perimeter Security Zone (PSZ) fence.

September 7, 1982 — Between 6:30 and 7 a.m., two Catholic nuns entered the first security checkpoint and came on plantsite by counterfeiting security badges. They entered in protest of production of nuclear weapons, and, once on plantsite, they were arrested by Plant Security as they attempted to hang a sign comparing the plant to Nazi concentration camps on the fence near Building 750.

November 2, 1982 — The Rocky Flats Conversion Fund Initiative was defeated by almost a two-to-one margin. Sponsored by Citizens for a Safer Colorado, it would have allowed taxpayers to donate part of their tax refund to inform citizens of the danger of the plant and to study possible uses of the plant for other than nuclear weapons production.

The DOE's Long-Range Utilization Study, at a cost of \$3.3 million and taking three years and done at the request of the Rocky Flats Monitoring Committee appointed by Governor Lamm and Congressman Wirth, was completed in December 1982. The study concluded it would cost in excess of \$2.06 billion and take 10-15 years to relocate plant buildings and 24 years to make the transition to a new facility.

January 1983 — The Nuclear Waste Policy Act of 1982, the nation's first comprehensive nuclear waste legislation, was signed by the president.

February 15, 1983 — Secretary of Energy Don Hodel visited the plantsite. After touring the facilities, he stated that he was impressed with the plant's safeguards and security and the multiplicity of activities.

June 1983 — The SX-139 Supplied Breathing Air Garment developed at Rocky Flats and approved by DOE was placed in use. It was the climax of a two-and-one-half year effort to improve the supplied breathing air garments used at the plant.

July 8, 1983 — Approximately 3,500 employees and retirees turned out for the plant's 30th anniversary "Production For Freedom" celebration.

Drawing massive media attention, some 12,000 peaceful demonstrators showed up October 15, 1983, but fell short of their goal of total encircling the plant. The biggest problems caused by the encirclement concerned traffic when Colorado 93 was jammed for a couple of hours following the demonstration.

In 1984, Precision Forge in Oxnard, California, became a part of Rocky Flats.

September 12, 1984 — Cleanup began on a quarter-mile strip of dirt containing low-level radioactive contamination along a section of the east security fence. The soil was contaminated in the 1960s by leaks from barrel storage of plutonium-contaminated oil at the southeast corner of the site.

October 1, 1984 — DOE's wind energy programs at the Solar Energy Research Institute (SERI) and the Wind Energy Research Center (WERC) at the Wind Site were merged, to be known as DOE's Wind Energy Research Center, a part of the SERI organization.

Building 460, constructed ahead of schedule and under budget, was officially opened October 11, 1984. The 229,000-square-foot building was designed to consolidate all non-nuclear manufacturing at Rocky Flats into one facility. It was also the first time the design/build concept, used widely in the commercial construction industry, was used for a construction project at Rocky Flats.

A plantsite opinion survey was conducted the week of January 21-25, 1985, by the firm Towers, Perrin, Forster and Crosby. More than 3,300 employees participated in the survey. It was the most extensive attitude survey Rockwell conducted on site.

In mid-February 1985, a new advertising campaign was launched by Rockwell as part of an expanded community awareness program.

June 12, 1985 — Secretary of Energy John Herrington visited the site and received a briefing on plant operations and tours of selected buildings.

July 8, 1985 — Final agreement was reached in regard to several lawsuits filed in 1975 by owners of land adjacent to Rocky Flats. Under the settlement agreement, Rockwell and the DOE agreed to undertake any remedial action necessary to bring levels of radioactivity on all lands involved in the suits to levels at or below the state's 1973 guidance pertaining to construction activity on soils containing radioactive

plutonium. The agreement further provided for the transfer of over 800 acres of land to the east of Rocky Flats to Jefferson County and the City of Broomfield for eventual expansion of Great Western Reservoir and for open space and recreational uses.

In July 1985, a certification auditing committee gave Rocky Flats the go-ahead to certify and ship transuranic (TRU) wastes. The certification followed a three-year effort that involved the initial development of a program, writing of procedures and coming up with a means for inspection and evaluation.

August 15, 1985 — A quarterly video news magazine, *Central Avenue*, made its debut.

In 1985, Rocky Flats employees contributed more than \$5,000 to Rockwell International's program for Matching Gifts to the Statue of Liberty/Ellis Island Foundation in an effort to restore and preserve the Statue of Liberty and Ellis Island.

Following the Labor Day holiday, the Rocky Flats Plant shut down September 3-8 in accordance with cost reduction actions taken by Rockwell and the DOE. Employees were required to take vacation or time off without pay.

September 26, 1985 — The waste treatment process called ferrite waste treatment, which significantly improved the method for removing actinide contamination from waste water, earned Rockwell the coveted IR-100 Award.

September 1985 — The Plutonium Utilization Improvement Project (PUIP) was formally initiated by a small group of Building 707 employees to improve yield and supplies of plutonium.

The new Perimeter Intrusion Detection Assessment System (PIDAS) was installed in 1985, incorporating the newest sensor field technology allowing Plant Security to detect any unauthorized passage through the Perimeter Security Zone (PSZ).

December 3, 1985 — A small explosion and fire occurred in a laboratory glovebox in Building 771, resulting in minor injuries to one employee.

A moment of silence was observed January 28, 1986, in honor of those who perished aboard the Space Shuttle Challenger.

February 24, 1986 — Technical Safety Appraisals (TSAs) began for more than 50 Department of Energy facilities in 11 states.

April 26, 1986 — In the worst accident in the history of the nuclear power industry, fires and explosions resulting from an unauthorized experiment at the Chernobyl nuclear power plant near Kiev in the Soviet Union left at least 31 people dead in the immediate aftermath of the disaster and spread significant quantities of radioactive materials over much of Europe. An estimated 135,000 people were evacuated from areas around Chernobyl, some of which were rendered uninhabitable for years. As a result of the radiation released into the atmosphere, tens of thousands of excess cancer deaths (as well as increased rates of birth defects) were expected in succeeding decades.

May 1986 — Announcement was made of a Terrain-Responsive Atmospheric Code (TRAC) computer developed at Rocky Flats which monitors the path a radioactive plume would take, where and when it would arrive, and what impact it might have on public health.

May 21, 1986 — The Emergency Operations Center was activated at 2:35 p.m. following a bomb threat in Building 771. Two suspect boxes were found on different floors of the building and were marked "bomb," but no explosives were found following inspection by the plant's bomb squad. A Swinerton & Walberg employee was terminated following the incident. That evening, the EOC was reactivated when security

personnel conducting follow-up searches discovered a suspicious pipe-like object in Building 771. The pipe was opened and no explosives were found.

The Advanced Size Reduction Facility (ASRF) in Building 776 became operational in 1986.

July 1986 — A Visitor Education Center was opened in Building 130 to serve as the focal point for public visits to Rocky Flats and help increase public awareness and understanding of the plant mission.

July 31, 1986 — Colorado became the first state to take over jurisdiction from the EPA to regulate the management and handling practices of the hazardous components of radioactive mixed wastes. Prior to that development, an agreement had been signed between the State of Colorado, the EPA and the DOE outlining milestones for Rocky Flats to complete in order to comply with the laws covering hazardous waste management and cleanup. Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) were the two laws governing hazardous waste management at the plant. The three-party compliance agreement dealt with laws, integrating them into a single technological program for site compliance and cleanup.

January 15, 1987 — A 31-year-old electrician died as a result of electrical burns he suffered while working on an electrical switch panel in Building 371 on January 14.

August 1987 — 300 protestors were arrested at the August demonstration conducted in observance of Hiroshima and Nagasaki Days.

October 1, 1987 — J.A. Jones Construction Company replaced Swinerton & Walberg as Rocky Flats' onsite construction contractor.

January 4, 1988 — A lease agreement between landowner Charles McKay and Rockwell was signed, providing that McKay construct two buildings on a 17-acre parcel of land located between the Rocky Flats west boundary and Colorado Highway 93. Rockwell then would lease the buildings from McKay for a 12-year period.

The remedial investigation of the 903 Pad, Mound and East Trenches was completed and a report submitted to the Colorado Department of Health and the Environmental Protection Agency. The report was part of the Comprehensive Environmental Analysis and Remediation Program (CEARP).

January 25, 1988 — A Rocky Flats Environmental Council was created by Governor Roy Romer and U.S. Representative David Skaggs to monitor the plant and review its impact on public health safety.

Union representation for the security force changed from International Guards Union of America to United Plant Guard Workers of America (UPGWA).

May 16, 1988 — A milestone was reached in the plant's environmental projects with the cleanup of Pond 207A, the largest of five solar evaporation ponds on the plantsite. Pond 207A had originally been placed in service in 1956 to hold waters from treated process wastes.

In late May 1988, it was discovered that the cemented waste form (pondcrete) had not cured properly. Waste Operations personnel began analyzing the situation and developing corrective actions. The problem had been discovered when heavy rains saturated some of the pondcrete blocks' triwall (cardboard) containers, allowing the contents of one box to spill onto the 904 Pad.

In mid-July 1988, the EPA filed an administrative complaint against Rocky Flats, seeking \$35,000 in civil penalties for PCB violations. The violations were noted in an EPA inspection of plant transformers in June 1987 and were corrected the same day. This complaint, together with a complaint filed from a 1986 inspection, brought the total penalties sought to \$114,000. Rockwell and EPA negotiated a \$47,000 settlement in the dispute with payment to be made from DOE funds contingent on availability of those funds.

July 19, 1988 — The new Emergency Operations Center in Building 115 was put into operation.

In 1988, Material Access Areas (MAAs) were established to enhance security in the Perimeter Security Zone (PSZ) production areas.

October 1988 — A boxcar loaded with transuranic (TRU) waste was returned to plantsite following Idaho Governor Cecil Andrus' refusal to allow further shipments of radioactive waste into his state. Rocky Flats had been shipping TRU waste to the Idaho National Engineering Laboratory near Idaho Falls, Idaho, for interim storage pending the opening of the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

October 28, 1988 — Building 883, where stainless steel and depleted uranium was rolled and formed, began an extensive building cleanup. The cleanup was initiated when routine smear samples indicated higher than allowable limits for depleted uranium on some surfaces in the building. Employees normally assigned to the building performed the cleanup by spraying the entire building with sprayers similar to those used at do-it-yourself car washes.

January 12, 1989 — The White House released the 2010 Report, projecting requirements for maintaining and modernizing the nuclear weapons production complex through the year 2010. The report recommended the DOE initiate the relocation of Rocky Flats activities away from the Denver area.

February 22, 1989 — Chromic acid, used in certain plating operations, was released from Building 444 when a plating bath tank overflowed due to an employee leaving a faucet running. The runoff from the plating bath then overflowed a tank and its containment structure. The containment structure leaked into a footing drain beneath the building and was automatically pumped to the sewage treatment plant. None of the chromic acid was released offsite.

Beginning the week of March 27, the plant began disposing of its sanitary waste (primarily office trash) at an offsite landfill. For the past 30 years, the plant had operated its own sanitary landfill in the plant's buffer zone, and that landfill was approaching capacity.

June 6, 1989 — Some 80 agents of the Federal Bureau of Investigation (FBI) and the Environmental Protection Agency (EPA) arrived at the plant to carry out a search warrant filed in the U.S. District Court of Colorado. The warrant authorized the agents to search for evidence of alleged criminal violations of the Resource Conservation and Recovery Act (RCRA) and the Federal Water Pollution Control Act (known as the Clean Water Act). Agents set up a command post in Building 111. The team of agents were on plantsite just short of three weeks, concluding their search on June 16. Officials estimated that a review of information obtained during the search would take from six months to more than a year. On June 9, an affidavit supporting the search warrant was made public. It alleged violations of environmental laws may have occurred at the plant.

June 20, 1989 — 30 filters were removed from building 771 as part of routine maintenance that included periodic replacement of High Efficiency Particulate Air (HEPA) filters. The filters were wrapped in plastic and sealed in steel crates for transfer to Building 776 for inspection and packaging. On June 21, nitric acid in some of the steel containers reacted with dust and lint, generating gas and causing some of the containers to become warm. Fire officers and safety engineers checked to see that the heat had dissipated and then completed transfer of the filters to the next stage of the waste-handling process. There was no fire and no release of radioactive material.

June 22, 1989 — The U.S. House Armed Services Committee approved an amendment from U.S. Representative David Skaggs authorizing \$3.4 million to help pay for testing of air and water around the plant.

June 27, 1989 — DOE Secretary of Energy James D. Watkins announced a 10-point plan to strengthen environmental protection and waste management activities at the Department's production, research and testing facilities.

July 1989 — Rocky Flats employees donated \$10,000 to the Boulder County United Way to be used in a relief fund for victims of the July 9 Boulder Canyon forest fire. Several plant employees lived in the area of Sugarloaf Mountain where the fire broke out.

August 1, 1989 — A special Grand Jury convened to review allegations and evidence secured during the June EPA/FBI search at Rocky Flats.

August 1, 1989 — Secretary Watkins announced completion of a five-year cleanup plan to "characterize and prioritize" waste cleanup at Departmental sites.

August 1989 — An independent criticality safety assessment team, appointed by Secretary of Energy Watkins, concluded that no evidence could be found that would support allegations that an accidental criticality ever occurred at Rocky Flats. The team, comprised of experts from outside DOE and Rockwell, concluded that there is no public safety threat from accidental criticality in current operations of the plant.

August 21, 1989 — Access began to the Perimeter Security Zone (PSZ) through the Personnel Access Control System (PACS).

September 7, 1989 — Rockwell Chairman of the Board Donald R. Beall, and Chief Operating Officer Sam F. Iacobellis met with Rocky Flats employees, announcing that a Rockwell investigation turned up no evidence that any Rockwell employee intentionally violated a federal law. They also reaffirmed their support of the employees at the plant and denied allegations made by the government. A letter was also sent to the U.S. Attorney General.

September 12, 1989 — Rockwell sent a letter to the Governor of Colorado, the White House, DOE, EPA and Congressional members detailing the company's internal investigation, stating that many of the government's allegations were "just simply not true." Rockwell publicly announced results of its internal investigation and again called for the government to release evidence, if any, proving criminal activities took place at Rocky Flats.

In 1989, the Nuclear Regulatory Commission gave final approval to the TRUPACT-II containers designed to carry radioactive waste from Rocky Flats to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The long-awaited approval would allow DOE to put shipments on the road as soon as WIPP opens.

September 21, 1989 — Rockwell filed a civil suit in U.S. District Court in Washington, D.C., against DOE, the Department of Justice, the U.S. Environmental Protection Agency and the federal government.

September 22, 1989 — Rockwell Chairman and Chief Executive Officer Donald R. Beall and Secretary of Energy Watkins announced they had mutually agreed that it would be in the best interest of both parties to amend the terms of the operating contract for Rocky Flats to provide for an orderly transition to a new operator in the near future.

September 28, 1989 — Rocky Flats was added to the list of highly polluted sites destined for cleanup under the federal Superfund program.

October 6, 1989 — EG&G, Inc. signed a contract with the Department of Energy to operate Rocky Flats, with transition scheduled for completion January 1, 1990.

October 19, 1989 — Rockwell International announced they would present a check for \$100,000 to the American Red Cross Earthquake Relief Fund to aid disaster victims in Northern California. In addition, the

Rocky Flats Donate Once Club approved an emergency donation of \$10,000 also be given to help victims of the earthquake in the Bay Area.

November 9, 1989 — DOE changed its focus from nuclear materials production to one of environmental cleanup, openness to public input, and overall accountability by forming the Office of Environmental Restoration and Waste Management within the Department of Energy.

In November, nuclear weapons production facilities at Rocky Flats and at Fernald Feed Materials Production Center in Ohio ceased production and changed their missions to one of cleanup.

In 1989, office space was prepared for Colorado Department of Health (CDH) and U.S. Environmental Protection Agency (EPA) personnel to work full-time at Rocky Flats.

December 1, 1989 — Secretary of Energy Watkins visited Rocky Flats and addressed employees gathered in the area of Building 111. His message was that he was committed to ensuring higher environmental and safety standards and that he was also committed to the future of the plant. He also held a press conference in Building 060.

Employment at the site was 5,243.

The 90s:

1990

January 1, 1990 — EG&G Inc. assumed operations of the Rocky Flats Plant.

January 10, 1990 — Groundbreaking occurred for construction of a system to remove chemical contaminants from groundwater at the 881 Hillside area, a high priority cleanup site at the plant. The action followed EPA and CDH approval of an Interim Measures/Interim Remedial Action Plan for the site.

It was announced that a project to study the deer population at Rocky Flats would be taking place in conjunction with Colorado State University. A similar study of the animals and vegetation around Rocky Flats had been conducted in the 1970s.

January 16, 1990 — At the request of Representative David Skaggs, members of the Defense Nuclear Facilities Panel of the House Armed Services Committee visited Rocky Flats. They toured the plutonium vault, Building 707, drum storage areas, the supercompactor, 776/777, and the 771 incinerator. After the tour, Skaggs and panel members held a press conference in Building 060.

In January, large tent-like structures were constructed at the east side of the plant. The structures were erected to expand pondcrete disposal operations through reprocessing and repackaging operations.

February 27, 1990 — Access was restricted on a five-acre area on the southeast side of the plant after preliminary evaluation of a radiation survey indicated elevated levels of americium.

March 29, 1990 — The *New York Times* and *The Denver Post* published copyrighted stories on the plutonium in the ducts at Rocky Flats.

May 3, 1990 — 10 double-trailer rigs loaded with repackaged "pondcrete" crates left Rocky Flats for disposal at the Nevada Test Site (NTS), the final shipment before a May 8 deadline when NTS would no longer receive such shipments.

May 18, 1990 — The DOE announced they would release health records of nuclear weapons workers, including those at Rocky Flats. The information would be released without names, Social Security numbers or other means of connecting the information to individuals. Only radiological records and extracted data from death certificates had previously been released.

May 21, 1990 — A fire resulting from a faulty electrical circuit in the Building 444 Coatings Lab, Room 345, caused damages estimated at more than \$250,000. The fire was extinguished within 20 minutes. There was no release of radioactive materials or beryllium to the environment.

June 6, 1990 — Secretary of Energy Watkins announced the resumption verification process for the Rocky Flats Plant.

August 1, 1990, Wackenhut Services, Inc. took over responsibility for Protective Services at Rocky Flats under a letter of contract with the DOE.

August 1, construction on the \$2.7 million radiation calibration laboratory west of Building 771 was completed, one of only a handful of facilities in the country qualified to perform federally certified radiation calibration.

Early in August, the DOE issued a Finding of No Significant Impact (FONSI) for the supercompactor. The supercompactor had been on site since June 1989.

Effective with the September 28 edition, Rocky Flats *The Paper* became a weekly employee publication.

In mid-October, the DOE announced that a site-wide Environmental Impact Statement (EIS) would be prepared for Rocky Flats, addressing the environmental impacts of ongoing operations and proposed projects. The last EIS for Rocky Flats had been completed in 1980.

November 15, 1990 — Conduct of Operations, a formalized, disciplined and accountable approach to conducting work safely was implemented.

November 21, 1990 — President George Bush declared the end of the Cold War as relations eased with the Soviet Union.

1991

Because of the situation in the Middle East, procedures to heighten security measures were implemented in January. When the Persian Gulf War (Operation Desert Storm-Desert Shield) began January 16, the plant's Emergency Operations Center was activated and staffed around-the-clock.

January 22, 1991 — A Rocky Flats Plant Interagency Agreement between DOE, the Colorado Department of Health and the U.S. Environmental Protection Agency was signed. The agreement outlined multi-year schedules for environmental restoration studies and remediation activities fully integrated with anticipated National Environmental Policy Act (NEPA) documentation.

February 7, 1991 — As a result of an 18-month effort, the Complex Reconfiguration Study was officially released by the DOE. The study specified several options that would create a complex that is smaller, less diverse and less expensive to operate, Complex-21.

A state-of-the-art nitrogen generation facility at the plant became fully operational in April.

Halliburton Environmental Technologies of Houston was awarded a subcontract to begin preparation for removal of up to 750,000 gallons of sludge from the solar ponds. The sludge would be mixed with cement to form "pondcrete." The five ponds were formerly used to process industrial waste.

May 9, 1991 — More than 30 members of the local news media toured Building 559.

May 16, 1991 — A small electrical fire occurred in Building 776. The fire was reported in Room 230, located in a non-radiological area. The fire was reported through the plant's alarm and safety systems and was extinguished within minutes. It was contained to one electrical cabinet.

Economist Tucker Hart Adams, president of the Adams Group, Inc. and contracted by EG&G Corporate to conduct an economic impact study of Rocky Flats operations on Colorado and the Denver metro area, released details of her study "The Economic Impact of Rocky Flats Operations on Colorado and the Denver Metropolitan Area." "If Rocky Flats closed its gates tomorrow, it would send the local economy into a deep recession that would be as bad or worse than what many still refer to as the Martin Marietta recession of 1963," said Adams.

July 1, 1991 — The Beryllium Health Surveillance Program officially began. Employees found to be sensitized would be further evaluated for Chronic Beryllium Disease.

July 31, 1991 — President Bush signed the Strategic Arms Reduction Treaty (START), which would reduce nuclear weapon stockpiles to 6,000 "accountable" warheads.

August 1991 — A U.S. District Court Judge denied an injunction requested by the Sierra Club that would have kept plutonium activities from resuming until certain mixed residue waste issues were settled. The Sierra Club had hoped to block the plant's resumption through legal action.

September 27, 1991 — President Bush announced unilateral cuts in the nuclear weapons arsenal.

The Federal Bureau of Investigation actively investigated the tampering of plant Selective Alpha Air Monitor (SAAM) alarms, and EG&G offered a \$2,500 reward for information leading to the arrest and conviction of the person or persons responsible for tampering with the alarms.

The Sierra Club and the Colorado Department of Health initiated separate legal actions challenging DOE's management of residues at Rocky Flats. In August, a U.S. District Court Judge denied the injunction requested by the Sierra Club.

While working in a high efficiency particulate air (HEPA) plenum and associated airlock in Building 707, four workers received skin contaminations and possible internal uptakes. All four workers were placed on restricted duty pending completion of the investigation and analysis of tests. Indications were that the workers violated procedures for using the airlock.

Rocky Flats received a permit issued by Colorado Department of Health and required under the Resource Conservation and Recovery Act for treatment and storage of nine hazardous and low-level mixed waste sites. It was the first such permit issued in the country.

December 16, Energy Secretary Watkins, in talking of a plan for a revamped U.S. Nuclear Weapons Complex, announced some of the production work done at Rocky Flats would be moved to Kansas City, Missouri, starting in 1992.

1992

January 28, 1992 — In his State of the Union address, President George Bush announced the curtailment of nuclear weapons components for submarine-based missiles. The announcement effectively ended the need for nuclear production at Rocky Flats.

January 29, 1992 — Energy Secretary Watkins made public his preferred intention to reduce the Rocky Flats Plant population to somewhere between 4,000 and 4,500 by October 1995, with the plant changing its mission to that of decontamination and decommissioning. On the same day, General Manager Jim Zane broadcast a plantwide message to employees regarding Energy Secretary Watkins' announcement of change of mission of the plant.

February 4, Secretary of Energy Watkins announced that regardless of the plant's mission, Building 559 was necessary for cleanup and that he was authorizing resumption of operations in that building. The announcement was made in Washington.

Several hundred employees, their families and members of the public turned out March 28 to show their support for Rocky Flats and appreciation for Rocky Flats workers. A rally, organized by two maintenance persons and held on the steps at the State Capitol, featured several speakers and a band.

June 12, 1992 — Secretary of Energy Watkins visited plantsite. The highlight of the visit was commemorating the intense effort led by employees to re-emphasize a safety-first culture. During his visit, Secretary Watkins presented employees in Building 559 with a plaque commemorating their successful resumption efforts. Watkins also participated in a ribbon-cutting ceremony for the Local Impacts Initiative, a coalition of business and government agencies, whose office was located at Interlocken Office Park in Broomfield.

In June, transportation of nearly 3,600 containers of pondcrete and saltcrete from the 750 Pad to the 904 Pad was completed. The 4.3 million pounds of low-level solidified waste was produced during an earlier project and had been packaged and stored on the 750 Pad. The move was made through Portals 1 and 2 in just 52 days. The containers of waste on the 904 Pad would then be reprocessed and repackaged in half-crates for storage and eventual disposal off site. The move cleared the way on the 750 Pad for storage of a projected 3,000 half-crates of pondcrete that would be generated during the Solar Pond Cleanout Project.

A Labor-Management Council was formed on plantsite to address the needs of employees affected by the change in the plant's mission through a reduction in plant population.

October 7, 1992 — Secretary of Energy Watkins was on site briefly to tour Building 460. He was accompanied by local media representatives.

As a follow-up to a visit and tour of Building 460 by Energy Secretary Watkins October 7, a Rocky Flats Plant Technology Showcase was held on October 30. The Showcase included tours of Building 460, featured exhibits of selected plant technologies, equipment demonstrations and informative briefings and discussions. This was the first of two Showcases held on site.

1993

During the second week in January, five DOE Defense Programs-surplus buildings, along with their approximately 30 support facilities were transferred from defense to environmental programs. The transition of plutonium-processing Buildings 771, 776/777, 779 and Buildings 865 and 886 from Defense Programs brought those facilities under the auspices of DOE Headquarters' Environmental Restoration and Waste Management.

Beginning February 22, plutonium-contaminated waste was compressed in the supercompactor in Building 776. This process was designed to help use on-site storage space more efficiently while saving the taxpayers millions of dollars in future disposal costs by reducing the total volume of waste handled.

Criticality Safety Procedures were violated in Building 771 when, on March 16, water from a ceiling leak was discovered in a nuclear material transfer cart during a weekly alarm check. Fissile material was stored in the cart. Holes in the cart prevented the accumulation of water and provided criticality safety. Kimwipes were stored in the cart and had the potential to clog the holes. Workers removed the Kimwipes and the residual water. Procedures require the workers to leave the area and consult Criticality Engineering when unexpected configurations with criticality implication are discovered. The presence of Kimwipes in the cart provided the potential for a criticality infraction and the actions by the workers were a violation of criticality safety procedures.

April 2, 1993 — Secretary of Energy Hazel O'Leary reorganized the Department by mission: energy, weapons and waste cleanup, and science and technology.

May 27, 1993 — Secretary of Energy O'Leary announced that the Department of Energy would proceed with the plan to consolidate its non-nuclear operations. This would include moving most of the non-nuclear work from Rocky Flats to Kansas City the end of FY1995. An independent committee determined that the move would be cost effective.

June 1, 1993 — Officials with the DOE/Rocky Flats Office (RFO) announced plans to begin the process for restructuring the plant work force. The announcement was the 120-day notification as required by the Defense Authorization Act.

June 9, 1993 — The U.S. DOE's Inspector General issued a report which said that surplus computers, scientific equipment and office furniture worth tens of thousands of dollars sat in an open field at Rocky Flats because of poor record keeping.

June 14-25, 1993 — The first shipment of uncontaminated enriched uranium components to the Oak Ridge Plant was completed — the first significant shipment of Special Nuclear Material since plant curtailment in November 1989.

July 16, 1993 — The Department of Justice announced that Rockwell International, the University of California and others had agreed to a \$450,000 settlement in a False Claims Act suit involving Rocky

Flats. The case charged that employees at the plant made gifts in a classified workshop and billed the government for the cost.

The DOE transferred landlord responsibilities at the Windsite to its Conservation and Renewable Energy department for use in wind energy research efforts. The Windsite had been used during the 1970s and 1980s as an energy research center.

September 15, all of Rocky Flats except the non-nuclear production Buildings 444, 460 and 883 were transferred from the DOE's Defense Programs to its Environmental Restoration and Waste Management department.

The DOE issued a Finding Of No Significant Impact (FONSI) on its proposal to consolidate its non-nuclear manufacturing functions, including the non-nuclear operations at Rocky Flats. That assessment determined that there would be no significant environmental impacts as a result of the moves. Under the consolidation plan, most non-nuclear production at Rocky Flats was scheduled to cease by the end of FY1995.

The Colorado Department of Health received \$500,000 from the National Institute of Occupational Safety and Health for the first year of a study of cancer incidence and mortality among workers at Rocky Flats who have been exposed to radioactive materials and chemicals. The study was projected to take five years and cost an estimated \$2.5 million.

October 28, a 29-member volunteer board representing citizens who have a stake in some aspect of Rocky Flats was formed to give advice and make recommendations to government agencies that operate and regulate the plant. The members of the Rocky Flats Citizens' Advisory Board (CAB) included representatives of local government, local businesses, area residents, environmental groups, public interest groups, academic institutions, the health care industry, Rocky Flats workers and organized labor.

In mid-November, after nine months of intricate planning, the first shipment of plutonium pits was sent to Los Alamos. The shipment, which consisted of 10 pits, was the first such shipment in four years.

December 7, 1993 — Secretary of Energy Hazel O'Leary announced a comprehensive plan to make DOE facilities and information more open to the public.

December 15, 1993 — A Voluntary Separation Payment Program was opened to members of the hourly work force. The plan was identical to one offered earlier in 1993.

December 21, at a news conference, the nation's first economic conversion project at a Department of Energy facility was announced jointly by Governor Romer's office and DOE, in cooperation with the Colorado Department of Health and the U.S. Environmental Protection Agency. The pilot project at Rocky Flats would clean and transition buildings for use by a private, industrial manufacturer to recycle contaminated scrap metals.

1994

In late January, Rocky Flats gained approval to resume straight low-level waste shipments to the Nevada Test Site for disposal. The first shipment of waste to the Nevada Test Site since 1990 was sent in early February.

February 3, 1994 — Secretary of Energy O'Leary conducted a press conference in which she announced reforms in contract management. The reforms included increased competition for DOE business, holding contractors more accountable for fines and penalties, reducing excessive outside attorney's fees, requiring specific performance criteria and measures in all contracts, and imposing stricter cost controls on expenses.

February 8, 1994 — The U.S. DOE awarded Science Applications International Corporation (SAIC) of San Diego, California, a three-year contract to provide technical and management support services to the DOE Rocky Flats Office. The contract value was approximately \$67 million.

February 18, 1994 — The DOE issued a Finding Of No Significant Impact (FONSI) on the proposed resumption of thermal stabilization operations in Building 707. Based on the analysis of an Environmental Assessment conducted in 1993, the DOE determined that the proposed thermal stabilization was not a major federal action significantly affecting the quality of the environment.

The results of a Community Support/Volunteerism Survey on plantsite confirmed that more than 350 organizations around the Metro area are supported by Rocky Flats employees and that more than 250 employees hold offices within those organizations. Rocky Flats employees also contribute approximately 11,120 hours per month toward volunteer activities.

Rocky Flats was selected as one of 14 federal technology demonstration sites by the Advisory Committee to Develop On-Site Innovative Technologies (DOIT). The site was a candidate for the demonstration of two of nine technologies identified by the committee — thermal desorption and microwave solidification.

March 17, 1994 — The DOE awarded Envirocare of Utah, Inc. a \$23 million contract to provide disposal services for mixed wastes generated as a result of environmental restoration and waste management activities at DOE sites. Under the contract, Envirocare would provide all necessary facilities, permits and license to dispose of the wastes shipped to them from any of 35 DOE sites across the country.

March 22, 1994 — A grass fire burned approximately 160 acres in the Buffer Zone near Highway 128 and Indiana.

March 25, 1994 — Secretary of Energy O'Leary visited Rocky Flats for the first time. She toured facilities including Building 883 and the Solar Ponds, met with a representative group of employees in the 850 cafeteria and held a press conference in Building 060.

April 18, 1994 — The DOE issued a Finding Of No Significant Impact (FONSI) on an Environmental Assessment initiated in 1989 to evaluate the impacts of the construction and operation of a new sanitary landfill at Rocky Flats. The existing landfill was nearing capacity and scheduled for closure in FY1996.

April 29, 1994 — DOE/Rocky Flats Field Office (RFFO) Manager Mark Silverman issued a draft solicitation for a new management contract for the Rocky Flats site.

May 9, 1994 — The Supercompactor and Repackaging Facility (SARF) in Building 776 began full operations.

May 10, 1994 — Cleanup workers finished emptying 200,000 gallons of sludge from the solar evaporation ponds. The ponds were being emptied as part of an agreement with the Colorado Department of Health and U.S. Environmental Protection Agency to accelerate the cleanup of Operable Unit 4, which includes the five Solar Ponds.

July 11-12 — The DOE hosted a Vendors Conference/Trade Fair to solicit creative, innovative technologies and approaches in order to clean up the Rocky Flats site faster, better and for less money. The conference was held in conjunction with Governor Romer's Office of Business Development, local chambers of commerce and other business groups. During the conference, DOE/RFFO Manager Mark Silverman announced a new name for Rocky Flats. The new name, Rocky Flats Environmental Technology Site, was chosen by a stakeholder panel to more accurately reflect the current environmental restoration and cleanup mission.

July 20, 1994 — A Russian Technical Team visited the site and toured some areas. The visit was in support of the reciprocal verification effort. The team also participated in a press conference. As a part of that visit, the Russian team and local press were permitted into plutonium storage vaults.

It was revealed that the Preble's Meadow Jumping Mouse, which may be the rarest small mammal in North America, has been found in riparian areas in the Rocky Flats Buffer Zone, which is one of the four remaining known populations of the mouse in the State of Colorado. A petition to list the mouse as a threatened or endangered species was sent to the U.S. Fish and Wildlife Service and, should the mouse be listed, there could be significant impacts on what could be done with the site's Buffer Zone.

July 27, 1994 — The DOE announced plans to begin restructuring of the work force at Rocky Flats, which would affect an estimated 260 positions as a result of the termination of non-nuclear operations at the site.

At the end of July, the last defense production-related shipment was sent out of Building 460. As non-nuclear work came to a close at Rocky Flats, personnel in 460 turned in their 40th consecutive week of meeting and exceeding quality and schedule requirements.

August 6, 1994 — Rocky Flats *Close-Up*, a news and public information program about Rocky Flats, made its debut on public television station KTVD, Channel 20. The show replaced the *Central Avenue* video which had been mailed to employees' homes.

August 11, 1994 — Approximately 250 visitors toured the Rocky Flats site as part of a pre-proposal conference.

August 11, 1994 — The final 17 crates of sewage sludge were shipped from Rocky Flats to Hanford. The shipment completed transportation of 125 crates authorized by Environmental Management-Waste Management.

August 15-17, 1994 — A pre-proposal conference for potential bidders to the new site operations contract was hosted by the DOE. The conference provided information on the Request for Proposal that had been issued as well as provided information on the Rocky Flats Environmental Technology Site.

August 17, EG&G announced its decision not to seek renewal of its contract with DOE to continue to manage Rocky Flats.

August 25, representatives of Rocky Flats signed a unprecedented collaborative agreement between EG&G Rocky Flats and the Los Alamos National Laboratory. The collaborative agreement would provide for the development of unique technical approaches to environmental cleanup and restoration activities at Rocky Flats.

August 26, 1994 — EG&G and Fluor Daniel Incorporated announced they had entered into a letter of intent which provides for the sale of EG&G Rocky Flats Inc. to Fluor Daniel. The acquisition includes the existing work force and the assumption of program management responsibilities through the remaining months of EG&G's contract at Rocky Flats, which expires December 31, 1995.

September 13, 1994 — Fluor Daniel Inc. announced that Fluor and EG&G had mutually agreed to discontinue talks concerning the acquisition of EG&G Rocky Flats. The parties had failed to reach agreement on definitive terms.

On September 21, the finalized Rocky Flats Strategic Plan was submitted to DOE Headquarters. The plan was a collaborative sitewide effort with input from employees and stakeholders.

September 29, the final shipment of depleted uranium was shipped to prepare the site for future Economic Development activities. Eleven truckloads of depleted uranium totaling more than 235,000 pounds had been shipped since June.

The Cost Productivity Improvement goal for Fiscal Year 1994 was exceeded by \$5.7 million. Some 700-800 employees took part in the improvement efforts, which reaped a total savings of more than \$70 million.

October 3, final confirmation sampling was completed after removal of six "hot spots" from the 881 Hillside. This remedial action laid the groundwork for future accelerated response actions as part of the site's ER 2000 initiative. The contamination was most likely the result of the storage of scrap metal and drums on the 881 Hillside in the 1960s and 1970s. ER 2000 is an accelerated cleanup initiative that would disposition all 16 operable units by the year 2000, free up hundreds of acres for future use, ensure post-remediation environmental protection and save taxpayers several billion dollars.

October 7, 1994 — Operations involving nuclear material were temporarily suspended after an unauthorized process line in Building 771, Room 149 was opened September 29, violating procedures for draining tanks. The incident was the most serious breach in safety in recent times.

October 25, 1994 — Secretary of Energy O'Leary presented a check for \$9 million to Rocky Flats for Stage II of the National Conversion Pilot Project (NCP) — a program to convert surplus Rocky Flats buildings and equipment to use by private industry to recycle materials during site cleanup.

October 25, the final shipment of depleted uranium was shipped by truck from Rocky Flats.

In a move to reduce inventory and streamline costs, approximately 235,000 pounds of depleted uranium had been shipped since June of 1994 from Rocky Flats to other U.S. DOE locations outside Colorado.

In November, OU 16 became the first Operable Unit to be officially closed out under the Interagency Agreement. OU 16 consisted of five individual hazardous substance sites.

November 9, a seven-member delegation from Kazakhstan, a former Soviet-block country, toured Building 883 at Rocky Flats as part of a familiarization visit. The delegation was researching economic development strategies to enhance economic conversion for their nuclear facilities.

Five individuals were recognized by DOE/RFFO Manager Mark Silverman for their efforts in renaming Rocky Flats. Two were Rocky Flats employees and the others were private citizens. The name selected, the Rocky Flats Environmental Technology Site, best represented the changed mission of the site.

November 26, 1994 — United Government Security Officers of America (UGSOA) Local No. 1 ratified a Wackenhut Services Inc. offer for a new collective bargaining agreement. The security force returned to work November 29. They had been on strike since November 6.

Jacobs Engineering Group, one of three teams bidding to operate the Rocky Flats site, was rejected by DOE. This left two bidder teams — one led by Parsons Corporation and one by Kaiser-Hill. Jacobs later joined the Parsons team.

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A temporary suspension of nuclear operations in Building 771 came the first week in January following review of two incidents involving opening and closing of tank valves without authorization. The incidents had taken place December 29 and 31 and resulted in a breach in Conduct of Operations.

January 10, a graded start-up of Plutonium Stabilization operations at Rocky Flats began in Building 707. These operations resumed with the stabilization of approximately 200 grams of unstable oxide. The process changes plutonium to an inert, non-reactive form better suited for longer term storage and transportation. These activities had been curtailed since 1989.

January 15, 1995 — The last of the five Solar Ponds that make up Operable Unit 4 was emptied, when sludge removal was completed five days ahead of the January 20 Interagency Agreement milestone completion date.

January 19, employees were informed that an additional reduction in force of 1,700 people would be required, resulting in a total reduction in force of 2,400 EG&G Rocky Flats employees by the end of Calendar Year 1995.

January 26-27, 1995 — The Voluntary Separation Payment Program concluded with the exit of 482 employees who took the program. It was expected that 180 involuntary layoffs would be necessary.

In February, construction of the 25,000-square-foot Centralized Waste Storage Facility was completed five months ahead of schedule and \$500,000 under budget. The new facility would store containers of hazardous and low-level radioactive wastes awaiting shipment to offsite licensed disposal facilities. DOE Assistant Secretary Thomas Grumbly visited the site February 8. He met with management and union employees and participated in a press conference and ribbon-cutting ceremony for the facility.

A Rocky Flats Seismic Study conducted by Risk Engineering of Boulder was released to the public in February. Based on the analysis, the chance of a 6.0-plus earthquake happening near the site in a given year was small but perceptible.

February 8, 1995 — The Department of Energy provided 120-Day Notice to employees regarding the continuation of FY95 work force restructuring activities with reductions in the Site population of up to 1,700 employees being required.

In late February, the Plutonium Working Group Report on Environmental, Safety and Health Vulnerabilities Associated with the Department's Plutonium Storage, a 28-volume, 8,300-page report, was officially released. The report looked at plutonium environmental, safety and health vulnerability issues at DOE facilities complex-wide. The report listed Rocky Flats as having five of the 14 most vulnerable facilities — Building 771 (No. 1); Building 776 (No. 2); Building 779 (No. 7); Building 707 (No. 8); and Building 371 (No. 9).

March 3-4, 1995 — A Rocky Flats Summit was held at the Arvada Center. In this meeting of over 150 community activists, regulators, state officials, EG&G/DOE staff and oversight group members, general agreement was reached on: 1) reducing the risk of plutonium to site workers and the public; 2) acceptance to deferring some environmental restoration and cleanup if those funds can be used to reduce the plutonium risk; 3) acceptance of storage of some waste and materials on site for an interim period; and 4) cleanup and removal of hazardous materials may have to be less than optimal. It was at this meeting that the slogan "Make it safe. Clean it up." was suggested.

March 13, 1995 — 146 employees received layoff notices and said their final farewells to Rocky Flats. 180 had originally been scheduled to be laid off but that number was offset by employees leaving through normal attrition.

March 16, 1995 — At the recommendation of Leadership Academy graduates, President Anson Burlingame began a program of weekly public address announcements on the status of current Rocky Flats issues.

March 23, 1995 — The first of two Develop On-site Innovative Technologies (DOIT) presentations and tours on Microwave Solidification and Low Temperature Thermal Desorption was held at the Arvada Center. About 40 members of the public attended the workshop and then traveled to the site for a tour of the two technologies. The DOIT project is a Western Governors' Association initiative.

March 28, 1995 — 21 drums of contaminated soil from the 881 Hillside left Rocky Flats destined for disposal at Envirocare of Utah, a commercial waste facility 80 miles west of Salt Lake City. This shipment

marked the first time in five years that mixed waste from Rocky Flats had been shipped offsite for disposal and was the first time Rocky Flats had shipped radioactive waste of any type to a commercial facility.

April 4, 1995 — The award of the integrating contract to Kaiser-Hill Company was made by Secretary of Energy Hazel O'Leary through joint press conferences in Washington, D.C. and at Rocky Flats via television hook-up. It was broadcast for employees live over the television LAN system and over the sitewide public address system. In addition, the broadcast was aired to a group of site employees and local news media in Building 060. After the announcement meeting, representatives of the Kaiser-Hill management team went to site cafeterias and were on hand to answer questions from employees. Employees also received informational packets about Kaiser-Hill through a sitewide distribution. The five-year, \$3.5 billion Rocky Flats Performance Based Integrating Management contract was scheduled to take effect July 1, 1995, with transition officially starting the first of May. The principal subcontractors were: Westinghouse Electric Corporation and Babcock & Wilcox Co. (nuclear materials handling), Morrison Knudsen Corp. and BNFL, Inc. (environmental restoration and waste management), DynCorp (site operations), Wackenhut (security), and Quanterra (laboratory services) as well as others to be selected through competitive bidding.

April 4, 1995 — It was announced that Kaiser-Hill had offered a proposal to DOE to release 4,100 acres of the Site's Buffer Zone for general public access. This was one of many potential activities identified for implementation under the new performance-based integrating contract that Kaiser-Hill won at Rocky Flats. The Kaiser-Hill proposal was based on the suggested transfer of uncontaminated land and its release from the regulatory constraints identified by the National Priority List requirements in the Superfund law.

It was announced that John Schierloch, a mechanical engineer at Rocky Flats, had designed a first-of-its kind device that measures the buildup of hydrogen inside plutonium residue storage drums. The device, a Gas Generation Test Canister prototype, could save taxpayers more than \$88 million in repackaging, shipping and disposal costs. The canister actually measures the rate at which gases are building up inside a drum.

April 11, 1995 — The DOE authorized Rocky Flats to return to full and normal thermal stabilization activities at the Site, following the successful completion of a lengthy safety program upgrade and review of these activities. During the thermal stabilization process, the chemical property of plutonium would be changed to an inert, non-reactive form better suited for longer term storage and transportation.

April 21, 1995 — In a public address announcement, George O'Brien, President of Kaiser-Hill, said quite a few changes would be implemented at Rocky Flats in the next several months, the first and foremost of which was staff reductions of 1,700. He also said the intent was to do that to the extent possible in the initial hiring process beginning in May and June.

April 25, 1995 — The DOE issued a Finding of No Significant Impact (FONSI) for the proposed actinide solution processing at Rocky Flats as a result of an Environmental Assessment performed for the Liquid Stabilization Program. The finding completed the National Environmental Policy Act (NEPA) requirements for the proposed activities. The program for solution removal and processing was created in response to independent safety assessments and an agreement with the state of Colorado to remove mixed residues at Rocky Flats and reduce the risk of future accidents.

April 26, 1995 — The Site initiated a pumped discharge of water from its storm water retention ponds, in an action consistent with the Site's federal discharge permit under the Clean Water Act. The Site had received approximately 3 inches of precipitation over the last two weeks — double the normal precipitation levels — causing an increase in runoff to the ponds. The discharge was a precautionary measure to ensure the continued safety of the pond dams and to maintain spill capacity.

April 28, 1995 — 75 pallets of protective clothing and safety equipment from the Site was delivered as part of a Denver-area relief shipment to assist rescue workers at the site of the bombing of the Oklahoma City, Oklahoma, Federal Center building which occurred April 19.

May 4, 1995 — Van Pool Services Inc. was named the private company taking over the Site's Van Pool Program effective July 1. Each route would decide whether to continue with the private van pool group.

May 11, 1995 — The DOE announced the schedule for implementation of a major reduction in force at the Site, with activities affecting up to 1,700 positions at the Site.

May 23, 1995 — An innovative way to treat waste with waste, which was developed by researchers at the Site, was unveiled to the public during demonstrations of polymer encapsulation conducted on Site.

The last shipment of niobium strips, which were left from production operations and used to make weapons components, were sent to Los Alamos National Laboratory where they would be stored in a radiologically controlled area (RCA).

May 24, 1995 — Headquarters' approval to open the Voluntary Separation Payment Program was received, and employees were able to sign up beginning May 30.

May 31, 1995 — A change in approach for dealing with water seepage from the current landfill at Rocky Flats was expected to save up to \$2 million. The DOE recommended scrapping plans to build a \$6,000 leachate collection system at the Site's sanitary landfill and instead proposed the use of a gravity-fed system that would feed the collected leachate into a reactive barrier treatment. The system was expected to cost approximately \$150,000, a saving of \$450,000 over previous plans.

June 7, 1995 — New technology to detect small amounts of americium, a tracer of plutonium, in employees' lungs was brought on-line at Rocky Flats. This technology was the most advanced in the industry and allowed direct measurement of radiation to be taken for a lung count. Two of the three rooms used by Internal Dosimetry used the new technology. Specifications for the new system were started in 1989 and the equipment was delivered in December 1994.

June 9, 1995 — Savings of three-quarters of a million dollars were reported by change to on-site disposal of water filter bags from the Site's sanitary sewer system. Previously, used filter bags were stockpiled for eventual disposal at a low-level waste disposal facility at the Nevada Test Site. In two years of use, 270 cubic yards of filters had accumulated. Tests of the filters showed no additional radioactivity had been deposited on the filters by use at Rocky Flats, so DOE and EG&G took the opportunity for saving \$750,000 versus the estimated costs of off-site disposal. The bags were buried in the Site's sanitary landfill. The filters had been used for collecting sediment from waste water.

June 12, 1995 — A DOE/RFFO evaluation of EG&G Rocky Flats resulted in an overall rating of "satisfactory" for the Rocky Flats management and operating contractor; the numerical rating of 80 resulted in no award fee. The evaluation covered the six-month period October 1, 1994, through March 31, 1995. The score reflected an evaluation of the September 1994 improper tank draining incident and showed that major safety culture deficiencies were a significant contributing factor.

June 14, 1995 — The Emergency Operations Center was activated in response to a spill of hydrochloric acid during a tank-filling operation in Building 891, a water treatment facility. The spill consisted of approximately 50-70 gallons of hydrochloric acid from a 2,500-gallon tank. Radiological surveys were conducted as a precaution and no radiation was detected. Air monitoring showed no airborne vapors beyond the immediate area of the spill.

Decontamination work for the National Conversion Pilot Project (NCP) began after the Department of Energy approved Stage II activities in a limited capacity. The Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) approved the Interim Measure/Interim Remedial Action (IM/IRA) before decontamination work could begin. The IM/IRA applied only to Stage II and described the NCP cleanup activities for Buildings 883, 865, 444 and 447; declassification of materials and tools; and preparation for Stage III, manufacturing and recycling of materials.

June 28, 1995 — The DOE issued a Finding of No Significant Impact (FONSI) based on the information and analyses in an Environmental Assessment for the consolidation, processing and interim storage of Categories I and II special nuclear materials in Building 371.

June 30, 1995 — Rocky Flats completed the biggest layoff in its history when 1,226 employees left the Site and Kaiser-Hill took over the facility; 928 employees left under the Voluntary Separation Payment Program and 298 employees were laid off.

July 1, 1995 — Ushering in a new era in contract management, Kaiser-Hill Company L.L.C. assumed responsibilities at Rocky Flats. The transition to a Performance-Based Integrating Management contract represented a major step forward for environmental cleanup, public safety and taxpayer accountability, and signified a fundamental change in the way business was conducted at the Site.

July 7, 1995 — The first truckload of state-of-the-art machining equipment once used in parts production at Rocky Flats left the Site. The equipment was sent to the Rocky Mountain Manufacturing Academy for use in establishing a high-quality facility for manufacturing training that could be used by many educational institutions within the community college system.

July 11, 1995 — Fuel oil once stored in tanks at Rocky Flats was put to use by a commercial refinery in Cheyenne, Wyoming, saving taxpayers more than \$1 million in the process. The refinery will reprocess the 1.8 million gallons of No. 6 fuel oil from Rocky Flats into No. 2 fuel oil which will then be sold on the commercial market in the Rocky Mountain region. By shipping the No. 6 oil to a commercial refinery, Rocky Flats avoided a potential \$500,000 in safety upgrades that would have been required to continue storing the oil at the Site.

July 26, 1995 — Three truckloads of low-level mixed waste left Rocky Flats. The shipment, which included 249 drums (68 cubic yards) of environmental filtering waste containing trace amounts of contamination from Operable Unit 2, was sent to Envirocare of Utah, Inc. for disposal. Operable Unit 2, which included the 903 Pad, Mound and East Trenches, was one of 16 designated cleanup areas at the Site.

August 17, 1995 — Following an internal Kaiser-Hill management review, operations in Buildings 371, 776/777 were suspended. Operations in 371 were suspended to conduct a management review of Conduct of Operations in the building. Operations in 776/777 were suspended after Kaiser-Hill management identified deficiencies in the authorization documentation for the building.

August 22, 1995 — A new technology designed to remove radioactive metals from water was put to the test during a public demonstration at Rocky Flats. The CURE electro-coagulation technology was developed by General Environmental Corporation of Englewood, Colorado, and was demonstrated as part of the U.S. Environmental Protection Agency's Superfund Innovative Technology Evaluation (SITE) Program.

August 22, 1995 — More than 1,500 drums containing radioactive waste residues had been refitted with filtered lids to ensure safe interim storage at the Site. Rocky Flats technicians had anticipated build-up of hydrogen gas in several thousand older radioactive waste storage drums. Although the drums were not in danger of bursting, they needed to have specially filtered vents installed to preclude that danger in the future and to meet shipping and disposal requirements. This processing took place in the Building 776 Size Reduction Vault airlock.

August 31, 1995 — Kaiser-Hill and the Department of Energy's Rocky Flats Field Office kicked off an innovative undertaking called interim end state. The project called for an aggressive approach to consolidation of material, stabilization and cleanup of the Site and would actively involve stakeholders up front as well as throughout the process. There were three phases to the project. The first phase, the actual stabilization, safe configuration and consolidation of special material. Phase two has the material located on Site and a work force reduced to only those persons needed to safeguard the material as well

as provide limited infrastructure operations. The third phase, the final end state, sees the material removed from the Site.

August 31, 1995 — The first of 14 truckloads of very low-level mixed waste, saltcrete, began leaving Site. This production run was preceded by a test run conducted in July, when three truckloads carried 68 cubic yards of environmental waste off the Site. This transfer of material was seen as a major step toward cleanup and the removal of waste. The last time a major shipment had left Rocky Flats was five years ago.

Workers at Rocky Flats began an accelerated cleanup operation of Ryan's Pit, a former chemical waste dump. An estimated 3,000 gallons of chemical wastes had been dumped in Ryan's Pit when it was used as a disposal site from 1966 to 1970. Wastes disposed there were dumped in an open, unlined soil trench approximately 20 feet long, 8 feet wide and 3 feet deep. At the time Ryan's Pit was in operation, disposal of chemical wastes by this method represented standard disposal practice for industrial facilities across the nation. Chemicals disposed there were primarily mineral spirits, trichloroethylene (TCE), toluene and paint thinner from paint shop and garage operations at the Site. Excavation was completed in September.

September 15, 1995 — Rocky Flats initiated plans for the accelerated cleanup of the 903 area and hillside. This cleanup involved source removal of "hot spots" — areas with concentrated contamination — and capping portions of the area. The 903 area, used for drum storage in the 1950s and 1960s, is one of the top 10 priority cleanup sites at Rocky Flats. The drums, containing solvents contaminated with plutonium, corroded and leaked contaminants into the soil. The drums were removed in the late 1960s and subsequent winds spread contamination to the south hillside.

September 16, 1995 — The source of some fumes in Building 886 that caused a temporary evacuation was traced to caulk used in a room that stored uranium nitrate. Eight persons were evaluated as a results of the fumes. One employee was sent to St. Anthony Hospital North for observation and was later released.

September 21, 1995 — Several nuclear weapons components called, "pits" or "triggers," that were in storage were removed from the Site and transported to Lawrence Livermore National Laboratory in California where the components would be disassembled, melted and recast into a non-weapon form.

September 21, 1995 — Tank-draining operations were under way following successful completion of an Operational Readiness Review for Building 771. The draining of plutonium-bearing liquids from tank systems in Building 771 had been suspended since October 1994 following the violation of Site internal safety procedures.

September 26, 1995 — The 400 Area was opened to pedestrian and vehicular traffic. This measure was taken as part of the DOE's openness initiative and was similar to actions that had occurred in the 800 Area in December 1994.

October 6, 1995 — A plan describing the development of waste treatment technologies, capacities and schedules at Rocky Flats was approved with modifications by the Colorado Department of Public Health and Environment (CDPHE). The Site Treatment Plan, submitted to CDPHE April 3, 1995, was prepared to address treatment of mixed wastes subject to the Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions.

October 9, 1995 — The project outlining the path the Site will take to closure took on a new name — Accelerated Site Action Project — to more accurately reflect the goal of the project.

Significant progress was achieved toward accelerating environmental cleanup and reducing risks at Rocky Flats during an October 10-11 "Rocky Flats Workout" session. Participants at the two-day session drafted an "Agreement in Principle" which would help the DOE and regulatory authorities complete a revised regulatory agreement to accomplish work in a quicker and more cost-effective manner. The

session focused on identifying a conceptual vision for an interim and final closure of Rocky Flats and resolving several issues to allow a new, comprehensive regulatory agreement to be reached.

October 12, 1995 — The Rocky Flats Citizens Advisory Board made clear in a recommendation to the Department of Energy that it would oppose development of a low-level radioactive waste disposal facility at the Site. The board's recommendation ran counter to the DOE and Kaiser-Hill proposal included in the Accelerated Site Action Project to build an on-site storage and/or disposal cell for low-level waste capable of containing the waste for 1,000 years.

October 23, 1995 — The absence of public health risks combined with a common sense approach to environmental restoration resulted in the accelerated closure of two Operable Units (OUs) at Rocky Flats. Records of Decision were signed concluding that no cleanup action is necessary for Operable Units 11 (West Spray Field) and 15 (Inside Building Closures). The two OUs had been the subject of extensive study during the past few years. The areas were identified for environmental investigation as part of the Interagency Agreement originally signed January 22, 1991, by the EPA, CDPHE and DOE.

Following the October 10-11, 1995, Rocky Flats Workout session attended by representatives of the Governor's Office, the Office of the Lt. Governor, the Colorado Department of Public Health and Environment, the national and regional offices of the Environmental Protection Agency, national and Rocky Flats offices of the Department of Energy and the Defense Nuclear Facilities Safety Board, a conceptual vision to guide the future direction of the Site was released for public comment.

A new automated system for employees entering the Site was put in place. The automated system required each employee to have a key tag to authorize access to the Site.

November 29, 1995 — U.S. District Judge Lewis T. Babcock dismissed a six-year-old lawsuit after all parties in the litigation agreed that Rocky Flats is storing mixed residues in compliance with the Resource Conservation and Recovery Act (RCRA) and Colorado hazardous waste laws. The ruling closed the books on litigation that was originally filed in 1989 by the Sierra Club and subsequently joined by the state of Colorado. The plaintiffs contended that the residues were hazardous waste and should therefore be regulated under RCRA.

December 14, 1995 — Kaiser-Hill accomplished approximately 42 of 60 performance measures, earning the company a \$2.8 million performance fee. For the first time since Dow Chemical Company turned over its final award fee check to employees before leaving the Site in 1975, Rocky Flats employees shared in company profits.

Fifteen truckloads of low-level mixed waste left Rocky Flats in December, making it the largest shipment of low-level mixed waste thus far. The 15-truckload shipment that consisted of 8,400 cubic feet of saltcrete waste was sent to a private disposal facility in Utah. Saltcrete contains trace amounts of radioactive and hazardous constituents and is generated from process water evaporation processes at the Site. The brine or salt left over from the evaporation process is mixed with concrete to form saltcrete.

1996

Honoring a commitment to the Defense Nuclear Facilities Safety Board, the Site completed venting of all solid residue drums nine months ahead of schedule. The venting of 2,696 drums was scheduled to be completed by the end of September 1996 but was actually accomplished by year-end 1995. The residue drums were vented to prevent pressurization and flammable gas accumulation and as a worker safety precaution.

January 3, 1996 — Chinook winds blasted through the area and winds recorded at 91 mph occurred at Rocky Flats, causing hundreds of thousands of dollars worth of damage. Signs blew off their posts, paneling tore loose from trailers in the T130 complex, a hole was blown through the wall of T750D and power lines blowing in the wind resulted in a loss of power to isolated areas of the Site. The most significant damage was incurred by many of the 13 tent-like structures used to house low-level and low-

level mixed waste. Exterior tent panels were ripped from the frames creating visible holes in the tent structures. The winds were the highest and most sustained gusts reported at Rocky Flats since the tent structures were constructed in January 1990.

January 11, 1996 — In a public address announcement to Rocky Flats employees, George O'Brien talked about the FY96 budget and also stated that he estimated a reduction of force of about 600 to 700 employees in 1996.

Kaiser-Hill and Rust Federal Services signed a Cooperative Research and Development Agreement (CRADA) to commercialize a polymer encapsulation process for stabilizing low-level radioactive and mixed wastes. The process was developed by researchers at Rocky Flats. Under the cooperative agreement, Rust would examine the economic feasibility of using waste plastic in the encapsulation process.

January 26, 1996 — As part of the DOE's economic conversion plan, the DOE agreed to sell the Oxnard Facility in Oxnard, California. Under terms of the deal, the metal-working and welding plant would continue operating with the same employees under a new owner, Hot Sections Technologies Inc. of Ventura, California. For more than 10 years, the facility had produced high-precision forgings from stainless steel and other metals, used to support Rocky Flats' manufacturing processes.

In a news release issued February 1, 1996, it was announced that workers at Rocky Flats had located between 2.4 and 7.2 U.S. pounds of plutonium during initial deactivation and decontamination activities in Building 779, one of the first buildings undergoing deactivation at the Site. It was expected that significant amounts of plutonium would continue to be identified as the Site moves forward with deactivation of plutonium facilities.

February 6, 1996 — Energy Secretary Hazel O'Leary released a full account of the federal plutonium inventory, including the location and amount of all forms of the radioactive substance currently stockpiled at U.S. government facilities. The federal inventory, including that found in nuclear weapons, totaled 99.5 metric tons. The largest single concentration, 66.1 metric tons, is stored at the Pantex facility. Other major sites included Hanford in Washington, Savannah River in South Carolina and Rocky Flats in Colorado. It was reported that an additional 3.9 metric tons is contained in nuclear wastes stored at many of the same sites.

By February 1996, a push to consolidate all operations to the Site was well under way. Five offsite leases had been successfully terminated since September 1995. Terminated leases included: Boulder, 030; Denver West, 051; McIntyre, 013, 014 and 015. Remaining leases included: 060 and 061; the Broomfield Warehouse, 020; Interlocken, 080; and Lake Arbor, LA2.

In a news release issued February 9, 1996, it was announced that workers at Rocky Flats were using a low-temperature process to treat contaminated soils from a former chemical waste dump. Approximately 180 cubic yards of soil will be treated through the thermal process that was expected to be completed, weather permitting, by mid-February. The low-temperature thermal desorption involves heating contaminated soils to temperatures from 150 to 300 degrees Fahrenheit, which causes the organic chemicals in the soil to pass off as vapor. The vapors are then condensed into a liquid and passed through a granular activated carbon unit. Wastes captured in the desorption process will be treated on site and/or disposed at an offsite waste facility. To eliminate dust contamination, the soils are sprayed with a fine mist throughout the process.

The Department of Energy at Rocky Flats reached an agreement with the Greater Oxnard Economic Development Corporation to sell the Oxnard Facility located in Oxnard, California. For more than 10 years that facility had produced high precision forgings from stainless steel and other metals. The forgings had been used in Rocky Flats manufacturing processes in support of the past Defense Programs mission.

February 15, 1996 — The Department of Energy continued to provide numerous documents and files requested by plaintiffs' attorneys in a class action lawsuit against former Rocky Flats operators Dow

Chemical Company and Rockwell International. Since a November 13, 1995, U.S. District Court ruling found DOE in contempt of court for not providing records within specified time frames, the DOE Rocky Flats Field Office had assembled a team of approximately 70 people to help review classified documents and other documents requested by the plaintiffs. Millions of pages of documents and files — both paper and electronic — had previously been provided to the plaintiffs.

February 19, 1996 — Officials at the Site released a working draft version of a "vision statement" that was intended to guide future activities at Rocky Flats, including cleanup, plutonium consolidation, safety, conversion and land use. The draft vision statement had originally been made public in November 1995 and was designed to serve as a preamble to the new cleanup agreement.

February 21, 1996 — The east face of Operable Unit (OU) 7 Landfill was the site of a new treatment plant. Construction on this leachate interception and treatment system began in December 1995. The plant was completed and went on-line February 21 without any lost time or accidents. The project, which was initiated in 1994 as a result of the Pondwater Interim Measure/Interim Response Action (IM/IRA), was one more step toward bringing Rocky Flats into compliance with state and federal environmental regulations, specifically the Resource Conservation and Recovery Act and the Clean Water Act.

February 26, 1996 — In a public address announcement to the Site, George O'Brien announced the importance of a Safety Awareness Stand-down on February 27th, when Kaiser-Hill and its subcontractors had an opportunity to take time out of the normal daily routine to examine current work issues with other members of their organization, to develop solutions and to make a personal pledge to improve safety and efficiency in day-to-day activities.

February 27, 1996 — Honoring a commitment to the Defense Nuclear Facilities Safety Board (DNFSB), the Site completed the venting of all solid residue drums nine months ahead of schedule. The 2,696 drums designated to be vented by the end of Fiscal Year 1996 were vented successfully in the first quarter FY96. The residue drums were vented as a safeguard to prevent pressurization and flammable gas accumulation and insure worker safety.

February 27, 1996 — An Authorization Agreement was signed by Kaiser-Hill President George O'Brien and Rocky Flats Field Office Manager Mark Silverman, representing the acceptance and approval of the Master Activity List for activities authorized for performance or planning at Rocky Flats. The agreement would be incorporated into the DOE contract with Kaiser-Hill L.L.C.

March 4, 1996 — A laboratory report, which was later found to be in error, indicated elevated levels of radioactivity in the Site's drinking water. As a result, employees were instructed to drink bottled water instead and to use the Site water for emergency purposes only. Regulatory authorities were notified and no water was released offsite. The suspicious samples had been taken in the Protected Area on February 15; a sample taken on February 22 indicated that the treated water leaving the Site's water treatment plant was within all water quality limits for drinking water. As it turned out, four dirty beakers were responsible for the high alpha. At the request of the Site, the offsite lab (Accu-Labs Research, Inc.) re-ran samples and new results showed that the water sampled was below background radioactivity and was well within all drinking water requirements.

March 7, 1996 — Local news media reported that Rocky Flats workers had sued the Energy Department, claiming it broke its promise to give them preference for jobs as nuclear weapons plants switch to cleanup. The suit accused the Department of Energy of improperly letting its private contractors decide job preference issues.

March 14, 1996 — The draft Rocky Flats Vision and draft Rocky Flats Cleanup Agreement (RFCA) were released for public comment. The vision, which outlines the ultimate goals for the cleanup and closure for the Rocky Flats Environmental Technology Site, was released concurrently with the new cleanup agreement. The cleanup agreement was the result of more than two years of negotiation between the US. DOE, the Colorado Department of Public Health and Environment, the U.S. Environmental Protection Agency and Lt. Governor Gail Schoettler. It describes the process that will be followed to accomplish the

vision, achieve cleanup and closure of Rocky Flats and defines the legal relationship between the agencies that regulate the Site.

March 14, 1996 — Kaiser-Hill President George O'Brien announced that facilities that support nuclear material stabilization activities would undergo a period of review on a new way of doing business and authorizing work and that during the review and training period, major nuclear activities and mission program activities such as tank draining, plutonium brushing and repackaging would not be performed.

Rocky Flats was the first Department of Energy Site in the complex to receive and operate prototype equipment for a plutonium stabilization and packaging system. DOE Headquarters had worked to make this technology possible through the selection of British Nuclear Fuels Limited (BNFL) as the primary vendor for negotiations toward contract award of a plutonium stabilization and packaging system by March 15. The selection of BNFL represented DOE's commitment to fulfilling the 94-1 recommendation of the Defense Nuclear Facilities Safety Board to have all plutonium metals and oxides in a long-term storage container by May 2002.

March 19, 1996 — The DOE announced a continuation of ongoing work force restructuring activities at the Site. Restructuring was necessitated by reductions in the FY96 appropriations for Environmental Management and could result in the elimination of up to 950 positions.

A group of about 100 current and former employees of Rocky Flats filed a lawsuit in U.S. District Court March 6, asking the court to look at the way in which hundreds of workers were laid off since 1994. The employee group filing the suit, known as the Rocky Flats Equity Fund Group, claimed the way the layoffs occurred violated federal laws pertaining to the development and implementation of restructuring plans, the preservation of equitable benefits and treatment for separating workers and the preferential reallocation of jobs and rehiring of Rocky Flats workers. They were seeking retribution for impacts of the layoffs in lost seniority, earnings, career opportunities and benefits, including retirement benefits.

March 20, 1996 — It was announced that ICF Kaiser was promoting George D. O'Brien to a position with ICF Kaiser's Corporate Headquarters and that he would leave Rocky Flats but would remain active in Rocky Flats policy issues as ICF Kaiser representative on the Board of Managers for Kaiser-Hill.

March 20, 1996 — Kaiser-Hill signed a D&D (decontamination, deactivation, decommissioning, demolition and disposal) Agreement with the United Steelworkers of America, Local 8031. The Agreement provides the language and classifications as well as other terms and conditions of employment for the Steelworkers to perform cleanup activities in addition to production and maintenance work.

March 26, 1996 — Two public workshops were held seeking the public's views on the Draft Programmatic Environmental Impact Statement (PEIS) dealing with the Storage and Disposition of Weapons-Usable Fissile Materials. The workshops were held at the Arvada Center.

April 1, 1996 — A workshop and a series of public hearings were scheduled in April and May to receive public comment on the new draft Rocky Flats Cleanup Agreement (RFCA) and draft Vision statement.

April 2, 1996 — The Rocky Mountain News ran a story on safety issues resulting from hydrogen build-up in tanks, pipes and drums at the Site. The problem had been initially identified in October 1993. At issue was 76 tanks in Building 771 and eight tanks in Building 371. To date, the 10 highest risk tanks has been sampled and purged to relieve the hydrogen build-up. Eighteen tanks would be completed by June 30, 28 tanks by September 30 and the remaining 28 by the end of the calendar year.

The DOE approved the reauthorization of activities in Buildings 371 and 707.

April 18, 1996 — The DOE approved the opening of the Voluntary Separation Payment Program. The application period would run through June 3.

April 25, 1996 — A moratorium was placed on the destruction of all records at the Site, including records located at the Denver Federal Record Center. No destruction would take place of any records unless approved by the RFFO Chief Counsel.

April 26, 1996 — It was announced that a recent Inspector General audit had found no evidence that special nuclear materials at Rocky Flats or six other Department facilities were missing or misused. However, the audit did identify issues surrounding the performance of physical inventories at Rocky Flats. On April 22, the Site had begun a complete inventory of all accountable special nuclear material.

May 9, 1996 — At a press conference, it was announced that Jessie Roberson was named the Department of Energy Rocky Flats Field Office Manager effective June 2. In April, Mark Silverman had announced he would retire June 1 after 34 years of government service. Silverman had been DOE Manager at Rocky Flats since October 1993.

May 23, 1996 — Kaiser-Hill awarded a \$20-plus million per year subcontract for architect/engineering, construction and construction management activities at the Site. The new performance-based subcontract was expected to save up to 25 percent over past cost plus fixed-fee subcontracts for similar activities. The subcontract was awarded to Rocky Flats Engineers and Constructors, L.L.C., of Englewood, which consisted of Stone and Webster Engineering, Nuclear Fuel Services (Nuclear Facility Design), Roy F. Weston (Environmental), J.A. Jones (Construction) and G.D. Barry (Engineering). The competitively solicited subcontract consisted of a three-year base plus two one-year options and would amount to \$20-40 million each year depending on the amount and specific scope of work performed.

May 29, 1996 — The stand-down of operations associated with the Master Activities List and the reauthorization of activities ended.

June 4, 1996 — Workers at Rocky Flats broke ground on a major accelerated environmental cleanup project involving the excavation of Trenches 3 and 4 — two of the top 10 hazardous substances sites at Rocky Flats — used in the past primarily for the disposal of radioactively contaminated sanitary sewage sludge.

A Rocky Flats assessment of vulnerabilities of Highly Enriched Uranium (HEU) June 3-13 by a team of 14 experts from DOE Headquarters and other DOE facilities. The assessment included public briefings and was followed in July with release of the Working Group Assessment Team Report that detailed the HEU vulnerabilities on Site.

June 13, 1996 — A study group, made up of local Rocky Flats workers and Department of Energy experts from Washington, concluded an 11-day visit to the Site. The panel, in a draft report made public, found evidence of "poor housekeeping" in some buildings, including a lack of labels on packages and blocked exits that could be a problem in an emergency.

June 13, 1996 — In a major risk reduction effort, workers at Rocky Flats drained the remaining 10 low-level plutonium tanks and removed resin from eight ion exchange columns in Building 771. The recently completed risk reduction activities in Building 771 address storage vulnerabilities outlined in the 1994 Plutonium Vulnerability Report.

June 17, 1996 — Secretary of Energy Hazel O'Leary announced that the closure of the Site had begun in earnest with the deactivation and decommissioning of radioactively contaminated Building 889. That building was scheduled to be demolished, with the walls down by September. Constructed in the late 1960s, the 2,750-sq. ft. Building 889 was the "size reduction" facility for uranium production operation, the place where radioactive uranium and hazardous waste was cut up, compacted and packaged for disposal.

June 17, 1996 — 300 Site employees met with Secretary of Energy O'Leary and Assistant Secretary of Environmental Management Al Alm in the 850 Cafeteria. The discussion covered many topics including the budget, downsizing and the future of Rocky Flats.

June 20, 1996 — U.S. Department of Energy Assistant Secretary for Environmental Management (EM) Alvin L. Alm issued a memorandum directing all EM sites, including Rocky Flats, to develop draft 10-year plans which describe how the sites would achieve Alm's vision of complete cleanup of most DOE EM sites. Alm's strategy was that the 10-year plans — once developed, integrated and approved — would serve as the unifying DOE EM Program direction which would drive future budget decisions, sequencing of projects and actions taken to meet EM Program objectives. Rocky Flats developed a draft Plan to ensure consistency not only with Alm's guidance, but also with the recently finalized Rocky Flats Cleanup Agreement and the accelerated cleanup and closure strategies embodied in the Site's own cleanup plan known as the Accelerated Site Action Project (ASAP).

The Voluntary Separation Payment Program that ran from April 18 through June 3, resulted in 582 employees being approved for the program. The majority of these employees left the Site June 21st. 202 employees received notice of their involuntary separation, resulting in a reduction of 788 employees.

July 1, 1996 — This date marked the end of the first year of work done under the integrating management contract. Accomplishments for the year included:

- Venting of 1,182 residue drums to mitigate hydrogen buildup
- Inspection and treatment of 761 items with potential fire concerns to remove plutonium oxide buildup
- Stabilization of more than 34 kilograms of plutonium oxide
- Completion of low-level tank draining and the removal of resins from ion exchange columns in Building 771
- Stabilization of 934 liters of plutonium and uranium solutions in bottle box operations in Building 774
- Sampling and purging of 49 of the 76 tanks with potential hydrogen concern in Buildings 771 and 371
- Consolidation of special nuclear material from Building 779 into Building 371
- Shipment of more than 40,000 cubic feet of low-level and low-level mixed waste offsite
- Ryan's Pit, a former chemical dump site, was excavated and the soils treated using a low-temperature process, representing the first-ever onsite treatment of environmental restoration wastes
- Excavation and treatment of soils from Trench 3, a top-ten risk site, was completed and work is under way on Trench 4
- Removal of PCB contamination from nine sites and close-out of two operable units ahead of schedule
- Began work on Building 889, the first radioactively contaminated facility to be demolished
- Initial deactivation under way in plutonium-contaminated Building 779
- Negotiation of the draft Rocky Flats Cleanup Agreement and Vision and planning and analyses conducted in conjunction with the Accelerated Site Action Process

July 2, 1996 — A report to Congress issued by the U.S. General Accounting Office cited Rocky Flats as one of two DOE sites having "vigorously pursued removal actions" to reduce overall time and cost of planning for the remediation of waste sites. The five DOE sites studied in the report, including Rocky Flats, were estimated to account for about 94 percent of the total cost of restoring the DOE complex.

July 3, 1996 – Excavation of contaminated materials from Trench 3 was completed. This cleanup was one of the Site's three regulatory milestones for 1996.

The first week in July, Kaiser-Hill received DOE approval to begin draining the Highly Enriched Uranium Nitrate (HEUN) tanks in Building 886. This tank-draining operation began July 10 and was expected to be completed in six months.

July 9, 1996 – Officials at DOE headquarters ordered field offices and headquarters staff to come up with \$45 million from their FY96 budgets to fund urgent risk-reduction work at Rocky Flats and at a number of high-priority safety programs across the complex.

July 9, 1996 – The final truckload of state-of-the-art machining equipment once used in parts production at Rocky Flats was transported to Rocky Mountain Manufacturing Academy (RMMA) at the former Lowry Air Force Base. The equipment, valued at more than \$5 million, would be placed in a facility to be available to students by January 1997.

July 17, 1996 – The Site took immediate action to address an urgent worker safety issue involving containers of unstable potassium metal and a chemical known as AIBN in Building 881. These materials were not in a proper storage configuration and posed the potential risk of explosion if moved abruptly or opened. With the assistance of the Jefferson County Sheriff's Department, one-quarter pound of potassium metal and 100 grams of AIBN were destroyed by breaching the containers in an isolated area of the Site. This allowed the material to stabilize.

July 18, 1996 – The finalized Rocky Flats Cleanup Agreement (RFCA) and the Rocky Flats Vision were signed in Governor Roy Romer's office at the State Capitol in Denver. The RFCA was the result of more than two years of negotiations among the U.S. Department of Energy, the Colorado Department of Public Health and Environment, the U.S. Environmental Protection Agency and the Lieutenant Governor. The RFCA describes the process that will be followed to accomplish the vision and defines the legal relationship between the agencies that regulate the Site.

July 24, 1996 – The Site was identified by the House Appropriations Committee in the July 1996 report accompanying the 1997 Energy and Water Development Appropriations Bill as an example of a Department of Energy site successfully using accelerated cleanup to directly support Site closure.

August 7, 1996 – Kaiser-Hill and the Department of Energy agreed to increase benefits for long-term disabled employees and protect benefits for retirees and long-term disabled employees through FY97. The decision came in response to pressure from Congressman David Skaggs, coverage in local newspapers, and the unrelenting efforts of disabled Rocky Flats employees and the Rocky Flats Retired and Disabled Workers Benefits Protection Committee. It raised the monthly benefit for long-term disabled employees from 50 to 66.7 percent of what they previously earned and would offset the increase in medical benefits costs implemented when Kaiser-Hill took over Rocky Flats in 1995.

August 16, 1996 – The Kaiser-Hill Board of Managers appointed Robert G. Card to the position of president and chief executive officer of Kaiser-Hill at the Rocky Flats Environmental Technology Site.

In a major risk-reduction move, Rocky Flats drained and packaged more than 500 liters of highly enriched uranium nitrate solutions and then shipped them to Nuclear Fuel Services, Erwin, Tenn., in mid-August.

August 22, 1996 – Demolition began on two fuel oil tanks which once held more than 2.3 million gallons of fuel oil at the Site. The demolition was part of the site's cleanup and closure activities and was performed by Rocky Mountain Remediation Services and Dominion Services, Inc. The tanks were constructed in the mid-50s to store No. 6 fuel oil which was initially used as the fuel source for generating steam at the onsite steam plant. Later, the oil was retained as a backup fuel source.

August 26, 1996 – The walls came down on Building 889 and all that was left was a heap of rubble and scrap metal. The building, a former uranium and beryllium waste repackaging facility, was the first radioactively contaminated structure at Rocky Flats to be demolished.

September 2, 1996 – Lightning ignited a grass fire on the edge of the Rocky Flats Site, burning 100 acres before it was extinguished three hours later. There were no injuries and no structures were damaged by the blaze which occurred between Colorado Highway 93 and Indiana Street and was likely caused by a lightning strike.

September 12, 1996 – The Site completed its first off-site shipment of Highly Enriched Uranium Nitrate (HEUN) solutions. This shipment of Special Nuclear Materials signified the removal of some of the highest risk materials at Rocky Flats and was also a target activity in the new Rocky Flats Cleanup Agreement. The HEUN was shipped to Nuclear Fuel Services in Erwin, Tenn. when the solutions would be converted into a solid oxide power and later converted into fuel for U.S. research reactors.

September 13, 1996 – In an important step toward closure of the Site, all Category I and II Special Nuclear Material (SNM) was removed from Building 779, the first plutonium facility to undergo deactivation at the Site. SNM consists primarily of plutonium and enriched uranium. More than 325 items of SNM were removed from the building as part of an overall effort to consolidate the Site's nuclear materials into Building 371.

September 19, 1996 – The Emergency Operations Center was activated in response to identification of radioactive contamination in the Trenches 3 and 4 area located in the east Buffer Zone. The source of contamination was identified as Uranium 238 from a drum which was excavated from the trenches. A piece of heavy equipment was being removed from the area for repair when it backed over a crushed drum that had been excavated from the trenches. Trenches 3 and 4 is an environmental cleanup site that was excavated earlier in the summer to remove a source of chemical contamination of Site groundwater. The excavated drums were known to contain radioactive contamination which would be disposed of as waste.

September 23, 1996 – Work was completed on the removal of contaminated soils from a small area of ground at the Trenches 3 and 4 environmental cleanup site. Approximately 1 cubic yard of soil had become contaminated when uranium crusted onto crushed pieces of metal waste drums was knocked loose and dropped onto small areas of ground. Approximately 40 cubic yards of soil and debris were removed and placed into waste containers.

October 1, 1996 – Workers at the Site completed sampling and purging of 84 tanks with a potential for hydrogen buildup. Hydrogen buildup in tanks at the Site posed a potential risk to workers. Originally identified in October 1993, this issue had gained considerable media coverage in early April 1993. Hydrogen builds up in tanks containing plutonium actinide solutions as a result of a chemical interaction. Left unaddressed, this buildup could cause a tank or valve to fail, resulting in a release of plutonium solution which would be contained within the building. At issue were 76 tanks in Building 771 and eight tanks in Building 371.

October 2, 1996 – Accelerated actions were completed at six former waste storage tanks located in the industrial area at the Site. The project was a cooperative effort between the Colorado Department of Public Health and Environment, the Environmental Protection Agency and the Department of Energy to meet a regulatory milestone in the newly signed Rocky Flats Cleanup Agreement. This \$5 million, six-month field effort included removing the contents of the tanks and rinsing them as part of a compliance agreement with the CDPHE. The tanks were then filled with polyurethane foam to prevent surface and groundwater infiltration. The tanks, formerly used to hold liquid process waste, had not been used since the 1980s and were never closed under the Colorado Hazardous Waste Act. The treatment was an interim action until the decommissioning and decontamination of the buildings associated with the tanks occur and the units can undergo formal RCRA closure. The tanks are chambered underground concrete vaults.

October 11, 1996 – DOE Headquarters announced that Kaiser-Hill and Safe Sites of Colorado had been issued a Notice of Violation and fined \$37,500 each for violations under the Price Anderson Amendments Act. This Act requires the DOE to develop and enforce safety regulations to minimize the risk to workers and the public from nuclear activities. The fines levied were in response to radiation protection system inadequacies and factors which could have, but did not, result in high levels worker contamination.

October 14, 1996 – A new labor agreement was signed by Kaiser-Hill Company, L.L.C., and the United Steelworkers of America, Local 8031. The five-year contract was tailored to the Rocky Flats mission of cleanup, decommissioning and closure.

October 18, 1996 – The DOE, the Colorado Department of Public Health and Environment, and the EPA agreed on an interim action level for radionuclide contaminated soils at Rocky Flats. This action level sets interim soil cleanup levels based on a dose of 15 millirem per year to a person onsite.

In October, draining of the highly enriched uranium nitrate (HEUN) solutions in Building 886 was completed. Nearly 2,700 liters were drained in all. The draining of these tanks and shipment of the solutions meant major risk reduction for Rocky Flats and was also a target activity in the Rocky Flats Cleanup Agreement. The solution, a mixture of enriched uranium dissolved in nitric acid, was left over from criticality experiments conducted in the critical mass testing laboratory housed in Building 886. This lab was shut down in 1989.

October 29, 1996 – Gale-force winds with gusts in excess of 100 miles per hour caused minor damage and resulted in isolated power outages at the Site. As a safety precaution, all non-essential personnel were sent home as stronger winds were forecast in the afternoon hours.

November 1, 1996 – Rocky Flats conducted controlled destruction of small amounts of reactive chemicals. Onsite destruction of reactive chemicals, which could not be safely transported offsite for treatment or disposal, was part of a planned effort to reduce potential risks to Site workers and to rid the Site of excess chemicals.

Waste shipments leaving the Site in FY96 exceeded the amount of waste generated on Site for the first time since nuclear weapons production ceased in 1989. The volume of low-level mixed waste on site was actually reduced by approximately 4.5 percent in FY96. A total of 40,395 cubic feet of low-level mixed waste, 74 truckloads, was shipped off site during FY96. These shipments fulfilled a Rocky Flats Cleanup Agreement milestone, developed by the DOE, the EPA, and the CDPHE. The shipments consisted mainly of saltcrete. The waste was transported to a licensed private waste disposal facility in Utah. Additional waste shipments included: 3,072 cubic feet of low-level waste, 3,213 cubic feet of hazardous waste, 6,179 cubic feet of non-regulated hazardous waste, and 10,311 cubic feet of polychlorinated biphenyls. Other significant offsite shipments were: 53,049 pounds of excess beryllium left over from past weapons production operations to Brush Wellman in Elmore, Ohio; 12 shipments of weapons components and enriched uranium to three other DOE facilities; and 22 pieces of Stockpile Reliability Equipment shipped to Los Alamos National Laboratory to support the weapons mission there.

November 12, 1996 – Expressions of interest were sought from the private sector for the lease of two decontaminated and refurbished manufacturing facilities at the Site, Buildings 883 and 865. The facilities would be leased for five years beginning in mid-1997 with the option for a 5-year extension.

Following the September 19, 1996, incident at Trenches 3 and 4, Kaiser-Hill came under fire in the local media for "playing loose with the truth." In response to these allegations, a public meeting was held November 19, at which Kaiser-Hill President Bob Card presented the facts to community and media representatives.

A report issued in mid-November affirmed the U.S. Department of Energy's choice of Los Alamos National Laboratory as the nation's only site for producing 20 to 80 plutonium pits per year for the U.S. stockpile.

November 26, 1996 – A violation of criticality requirements occurred when a group of employees working on a project to alleviate hydrogen buildup in transuranic waste drums, removed six drums from Room 443 in Building 776/777. Although no harm resulted, Kaiser-Hill conducted a review of the incident and corrective actions were developed to prevent future occurrences.

December 3, 1996 – DOE/RFFO Manager Jessie Roberson and Kaiser-Hill President Bob Card signed the first-ever Authorization Agreement under 'work smart' standard in a Hazard Category II facility.

December 5, 1996 – It was announced that with the completion of offsite shipments of highly enriched uranium from Building 886 on November 4, Rocky Flats met all of its milestones and target activities under the new Rocky Flats Cleanup Agreement (RFCA) for 1996. Milestones met under RFCA include:

- Offsite shipment of a second "mega-shipment" of saltcrete low-level mixed waste. (Each mega-shipment amounts to more than 8,000 cubic feet.)
- Excavation and treatment of soils at Trenches 3 and 4, two of the top 10 highest priority cleanup sites. (These trenches were a source of chemical contamination in shallow groundwater at the Site.)
- Stabilization of six former underground waste storage tanks by removing the contents, cleaning out the tanks and filling them with closed-cell foam for closure in place.
- Removal of stored waste and solid residues (waste items with higher plutonium content) from Building 779.
- Onsite treatment or offsite shipment and disposal of 48 high priority reactive chemicals.

Special Nuclear Material Management target activities met under RFCA include:

- Weighing and, as necessary, brushing to remove oxide buildup and repackaging of 1,100 plutonium items with a potential fire concern.
- Stabilization of 80 percent of the oxides removed from brushing and repackaging activities.
- Offsite shipment of all Highly Enriched Uranium Solutions from Building 886, eliminating a potential risk to workers.
- Removal of all Special Nuclear Material items from Building 779.

December 5, 1996 – Copies of the DOE's draft Rocky Flats Environmental Technology Site Work Force Restructuring Plan Number Three were made available for comment.

December 8, 1996 – An announcement made in Washington by DOE Secretary Hazel O'Leary, laid out the DOE's strategy to dispose of the nation's surplus plutonium as described in the Storage and Disposition of Weapons-Usable Fissile Materials Final Environmental Impact Statement (EIS). DOE's preferred storage strategy would move surplus plutonium, in the form of pits (nuclear weapons cores), from Rocky Flats to the Pantex Plant in Texas, and relocate separated and stabilized plutonium materials to the Savannah River Site in South Carolina.

December 19, 1996 – The Emergency Operations Center was activated in response to a water leak in Building 776. The water was not contaminated and was contained to an area around the building loading dock.

December 20, 1996 – President Clinton selected former Denver Mayor and outgoing Transportation Secretary Federico Pena to head his second-term Energy Department.

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In mid-January 1997, the Site was current with Special Nuclear Materials Category I and II inventory – this was a major accomplishment, since it was the first time this had occurred since 1990.

On January 13, about 60 people turned out for a public hearing at the Arvada Center on the Waste Isolation Pilot Plant's (WIPP) Second Supplemental Environmental Impact Statement. Testimony at the hearing frequently addressed the issue of Rocky Flats' transuranic (TRU) waste, with some people advocating opening WIPP to dispose of TRU waste from Rocky Flats and other sites – the alternative favored by Kaiser-Hill, and others advocating leaving TRU waste on the Site.

February 4, 1997 – The U.S. Department of Energy announced another 120-day notice of proposed work force restructuring activities at Rocky Flats. Those activities, which are part of an ongoing effort, could affect up to 400 positions at the Site.

February 6, 1997 – Using table salt, electricity and funding under the DOE's Quick Win program, workers at Rocky Flats successfully treated 1,930 liters of cyanide-contaminated liquids. The cyanide-contaminated waste was generated during metal electroplating operations in Building 444, a former non-plutonium weapons manufacturing facility. During weapons production, cyanide was used to allow plating with various metals including gold, silver and cadmium. In all, 11 drums of waste were treated through "electrochemical chlorination" to eliminate cyanide.

February 18, 1997 – Workers completed the draining of six high priority tanks containing plutonium nitric acid solutions. The concern with the Category B tanks was that over time the nitric acid could have caused the tank lines and valves to corrode, resulting in a spill of plutonium solutions. More than 5,500 liters of the plutonium solutions were drained from the six tanks which are located in Building 371, a former plutonium recovery facility. Solutions in the tanks were left over from past nuclear weapons production processes at the Site. The solutions had been idle since nuclear operations ceased in 1989. The draining of these tanks was part of the Mixed Residue Tank Systems Management Plan which was developed as a result of the 1993 consent order with the State of Colorado.

In February, Assistant Secretary for Environmental management Al Alm directed DOE RFFO Manager Jessie Roberson to suspend consideration of a new plutonium storage vault at Rocky Flats, saying the facility is unnecessary because the department will move plutonium off site earlier than previously anticipated. Alm explained that the Record of Decision published January 14 on the Storage and Disposition of Weapons-Usable Fissile Materials provides that Rocky Flats will begin moving its plutonium pits to the Pantex Site in 1997 and its metals and oxides to Savannah River in 2002. However, Alm instructed Roberson to continue conceptual design activities at a "minimally funded level" in fiscal years 1997 and 1998.

February 26, 1997 – It was announced that the DOE is canceling plans for a site-wide environmental impact study of the site. DOE had concluded that such a study has no value and is meaningless now because the Site's mission has changed dramatically since work began on the statement back in 1991.

February 26, 1997 – A CBS crew was at the Site to interview DOE RFFO Manager Jessie Roberson and to film workers. The footage was to be used on the CBS Evening News broadcast of a report on beryllium and Chronic Beryllium Disease during an "Eye on America" segment. The segment aired on March 17.

February 27, 1997 – The Material Access Area in Building 886, that once secured uranium from outside threats was opened up, seven months ahead of schedule. This opening was made possible by the removal of all of the uranium nitrate solutions and a portion of uranium-contaminated waste materials

from the building. In all, 2,700 liters of uranium nitrates were drained from tanks and shipped to Erwin, Tennessee.

March 12, 1997 – The Senate overwhelmingly confirmed Federico Peña as Secretary of Energy. Peña's nomination had been held up for several weeks by lawmakers unhappy with the Clinton Administration's opposition to a proposed interim nuclear waste storage site in Nevada.

March 12, 1997 – Following a sitewide initiative to identify non-radioactive chemicals no longer needed for operations at the Site, the Kaiser-Hill Team had safely treated, sold, or removed more than 16,000 non-radioactive chemicals. To date, 164 waste chemicals had been treated on site, more than 200 chemicals had been sold to organizations offsite, and more than 16,000 non-radioactive waste chemicals had been shipped offsite to permitted disposal facilities. The chemicals which included paints, solvents, and laboratory and maintenance chemicals, were identified for disposition due to their expired shelf life and the change in Rocky Flats' mission.

March 13, 1997 – The Defense Nuclear Facilities Safety Board released their Seventh Annual Report to Congress. In this report, the Site was recognized for efforts made to ensure the safe stabilization of residues and wastes as well as development of new methods for deactivation and decommissioning of facilities.

March 14, 1997 – Building 771 personnel accomplished a significant milestone by completing the processing of backlog solutions through the hydroxide precipitation process. Processing started in early November 1996 and safely eliminated 306 liters of high-level uranium and plutonium solutions stored in tanks and plastic bottles.

March 17, 1997 – Rocky Flats Field Office Manager Jessie Roberson awarded Kaiser-Hill a total of \$13.7 million – 71 percent – of a possible \$19.32 million in incentive fees for FY96. Approximately \$5.6 million was lost for the Site failing to achieve certain milestones.

March 18, 1997 – The ongoing effort to remove surplus hazardous materials from the Site reached another milestone with the safe removal of nearly 20,000 pounds of excess beryllium, a non-radioactive metal formerly used in the Site's production mission.

March 24, 1997 – Workers at the Site began the accelerated cleanup of the Mound area, one of Rocky Flats' top 10 cleanup sites. The Mound is a chemically contaminated area where in the 1950s, some 1,405 drums were placed on the ground and covered with dirt. The drums contained various forms of plutonium and uranium. Many also contained industrial solvents. In 1970, all of the drums were removed along with most of the radioactively contaminated soil. However, chemical contamination remained in surrounding soils and was detected in monitoring wells and soil borings near the Mound site. It was estimated that 10 percent of the covered drums leaked industrial solvents into the shallow groundwater, contaminating between 400 and 1,000 cubic yards of soil. The solvents consist primarily of chemicals such as perchloroethylene (PCE) and carbon tetrachloride (CCL4) which are paint solvents and degreasers that were formerly used for cleaning things such as garage floors and machines at the Site.

March 28, 1997 – The final remedy was selected and approved by state and federal authorities to complete environmental cleanup of the 881 Hillside Area at the Site. The cleanup remedy was detailed in a Corrective Action Decision/Record of Decision (CAD/ROD) that was finalized in March following a 60-day public comment period. The document was signed by the Colorado Department of Public Health and Environment (CDPHE), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Energy's Rocky Flats Field Office. Since 1992, the site had been collecting and treating shallow groundwater as part of an interim remedial action to prevent contaminants from entering Woman Creek in the site's southern Buffer Zone. In 1994, soils contaminated with low levels of radioactivity were detected and removed as part of an accelerated response action. Between 1968 and 1974, excess equipment was stored on the 881 Hillside Area, also referred to as Operable Unit 1. Operable Unit 1 is

composed of 11 specific sites where hazardous substances may have been disposed or released. Extensive environmental investigations conducted in the area identified the area, known as Individual Hazardous Substance Site 119.1, as the only site which contained a significant source of contamination.

The first shipment of surplus nuclear weapons components from the Site to the Pantex Plant near Amarillo, Texas, was successfully completed in March, ahead of initial schedules. Movement of the pits was part of the Clinton Administration's efforts to reduce the number of sites where surplus nuclear weapons materials are stored. The shipment was the first of several to occur during the next two years as outlined in a January 1997 Record of Decision (ROD) following a Programmatic Environmental Impact Statement on the Storage and Disposition of Weapons Usable Fissile Materials. The majority of pits transferred from Rocky Flats to Pantex will be stored for an interim period and eventually dismantled. A smaller number of the components may become part of the enduring stockpile that will be maintained for national defense purposes.

April 16, 1997 – An improved plume tracking system that can track a hazardous material cloud three times faster and at one-third the cost of current systems was developed through a cost-sharing partnership between the U.S. Department of Energy and the non-profit Regional Atmospheric Response Center (RARC) in Westminster. Called the Computer Assisted Protective Action Recommendation System (CAPARS), the system was designed to track hazardous material releases and provide critical information to emergency response personnel.

April 18, 1997 – Workers at the Site completed removal of a source of chemical contamination at the Mound area, a former waste-drum storage site. The source removal was accomplished through the excavation of more than 700 cubic yards of soil. Excavation began March 21. The excavation resulted in a hole 32-feet long, 29-feet across and 17-feet deep. Excavation crews dug 5-feet into bedrock to remove contamination. Soil removed from the Mound will be treated using a low temperature thermal process that involves heating the contaminated soil to temperatures ranging from 150 to 300 degrees Fahrenheit. The heat causes chemical contamination to pass off as vapors that are collected and condensed into liquid. The process had previously been used to treat soils excavated from Trenches 3 and 4 and Ryan's Pit, three other top-10 cleanup areas.

April 20, 1997 – the Kaiser-Hill Team achieved an important external milestone when Rocky Mountain Remediation Services contracted with an offsite sanitary disposal facility to accept Rocky Flats' sanitary waste for disposal. The contract was awarded to USA Waste of Colorado, who owns and operates the Front Range Landfill in Weld County. The landfill is a 480-acre parcel located within the town of Erie and is fully permitted by the state of Colorado to accept a variety of non-hazardous sanitary waste.

May 6, 1997 – More than 800,000 pounds of surplus metal were sold generating some \$400,000 in revenue as part of an effort to remove excess property from the Site. Metals also were transferred to other government agencies, providing savings of substantial tax dollars.

Early in May, Kaiser-Hill received approval to begin Voluntary Separation Payment Programs and the Department of Energy gave final approval to Workforce Restructuring Plan Three. Spot VSPPs began May 7 with involuntary separations to occur after June 5. Approximately 250 involuntary and voluntary separations were expected to be spread over the remainder of the FY.

Thermo NUtech, a subsidiary of Thermo Remediation Inc., was awarded a contract to provide radioanalytical laboratory support to the Site. The estimated total value of the contract, which is for three years plus an option for an additional two years, is \$10 million.

The Rocky Flats Citizens Advisory Board asked DOE to conduct an assessment of the performance-based contract currently in place with Kaiser-Hill. Because the half-way point in the contract was approaching, the board said an assessment was necessary to identify contract implementation practices "that are resulting in barriers to the most efficient and safe cleanup of the Site."

Several local media articles ran raising questions about safeguards and security at Rocky Flats. Many of the points brought up in the reports were outdated and misrepresented the effective level of security at the Site.

May 22, 1997 – One drum of transuranic waste material that originated at the Site in the late 1980s and was transported to another facility was returned to Rocky Flats for interim storage. Ultimately, the drum of waste may be slated for disposal at the Waste Isolation Pilot (WIPP) near Carlsbad, N.M. The single 55-gallon drum was returned from a private engineering firm in New Jersey May 21. The drum contained about 150 pounds of vitrified (glass encased) lead-borosilicate holding a small amount of plutonium. The waste material was originally transported from Rocky Flats to the New Jersey facility in 1986 under a contract with the DOE to recover reusable materials from the waste.

Canberra Industries, Inc. of Meriden, Conn., was awarded a contract by Rocky Mountain Remediation Services for mobile waste characterization of transuranic (TRU) and transuranic mixed waste currently stored at the Site. The contract is the first awarded to characterize waste in order to certify it for eventual shipments to the Waste Isolation Pilot Plant in Carlsbad, N.M.

During the last week of May, removal of Raschig Rings in Building 886 was completed. One-hundred-twenty-thousand, or 20 tons, of rings were "hand-scooped" from 110 drums.

June 3, 1997 – Workers at the Site began moving radioactive waste into Building 440, a newly approved interim waste storage facility with the capacity to house some 8,000 drums of radioactive waste. The 26,000-square-foot facility and its workers had to pass two rigorous readiness reviews before any waste could be transferred into the building. Building 440 will be used to store both low-level and transuranic wastes. The building had previously been used during weapons production as a vehicle modification shop in which trailers were retrofitted with special safety and security equipment to allow them to transport nuclear materials.

During the first week in June, a crew of six people from the Japanese public television network visited Rocky Flats. They taped a documentary on the DOE's transition from weapons production to environmental cleanup.

In June, groundbreaking took place for a mobile laboratory facility east of the 886 trailer complex. This was an important step in aligning the Site's analytical services needs with its new mission. After the foundation is laid, trailers and equipment will be set up and Thermo NUtech of Albuquerque, N.M., will begin providing onsite, privatized lab services.

The Ten-year Plan, now called the 2006 Plan, was expected to be issued the week of July 12 in the form of a 'Discussion Draft.' It will be followed by the Draft 2006 Plan in the fall and the initial 2006 Plan in early 1998.

June 10, 1997 – Kaiser-Hill Company awarded a new \$7 million contract to Envirocare of Utah, Inc. for the transportation, treatment and disposal in 1997 of 2,340 cubic meters of low-level mixed waste currently stored at the Site. The contract could potentially last through 2000 and mean the eventual disposal of approximately 13,000 cubic meters of low-level mixed waste, reducing the current waste inventory by approximately 50 percent.

June 11, 1997 – The Rocky Flats Site was nominated for the National Register of Historic Places. Historians said the work at Rocky Flats was crucial during the Cold War. The National Register already included missile silos and the site of a nuclear test blast. The designation would not affect the ongoing cleanup of radioactive materials.

June 12, 1997 – The National and Rocky Flats Discussion Drafts of the *Accelerating Cleanup: Focus on 2006* document (formerly the Ten-year Plan) were released for public review and comment. The

documents would guide the accelerated cleanup and closure of the Site and other DOE sites. Public comment was extended to 90 days, running from June 12 to September 9.

The second week in June, DOE cited Kaiser-Hill Company and Rocky Mountain Remediation Services, for a safety infraction that delayed detection of a radioactive spill during the cleanup of two trenches in fall 1996. In preliminary notices of violation issued under the Price Anderson Act Amendments, DOE's Environmental, Safety and Health unit said the contractors should have known that radiological controls such as air monitoring and worker protection were required when they performed the trench cleanup work. The agency categorized the infraction as Severity Level 3 which, as the lowest-tier violation, carries no penalty.

June 18, 1997 – Energy Secretary Federico Peña announced the DOE is making available up to \$4 million over the next two years to help mitigate impacts of defense-related downsizing at the Site. The money will be used to support the Rocky Flats Local Impacts Initiative, the community reuse organization for Rocky Flats and surrounding communities.

June 20, 1997 – Secretary of Energy Federico Peña paid his first visit to the Site. He met with the Rocky Flats Field Office staff and took a brief tour of the Site, which included a quick tour of Building 371.

June 24, 1997 – The Colorado House of Representatives approved an amendment that would affect workers at Rocky Flats and other weapons facilities. The vote reversed a recommendation of the House National Security Committee to cut next year's assistance by two-thirds, and then completely end the program. Colorado Congressman David Skaggs says the move is a big victory for the people working at and living near Rocky Flats. The National Security Committee, as part of a larger bill authorizing defense programs, had recommended cutting the economic assistance program from \$66 million to \$22 million next year.

June 30, 1997 – The U.S. Department of Energy, the EPA, and the CDPHE concluded that while some contamination from Rocky Flats can be detected in an area known as Operable Unit 3, the levels are so low that no further actions are warranted and no cleanup or remedial activities are necessary for lands adjacent to the Site. The final Corrective Action Decision/Record of Decision (CAD/ROD) document was prepared and finalized in June. OU 3 is comprised of four areas in Jefferson County which had been the focus of intense remedial investigations since the early 1990s. The four areas include land east of the Site, Great Western Reservoir, Standley Lake, and Mower Reservoir. OU3 is one of 16 Operable Units originally identified at the Site in an Interagency Agreement signed by the DOE, EPA and CDPHE in January 1991. Although the new Rocky Flats Cleanup Agreement (RFCA) consolidated many of the OUs, OU3 remained separate because of its unique geographic location outside of Rocky Flats boundaries and because remedial investigations on the area were nearly complete when the RFCA was signed in July 1996.

June 30, 1997 – There is no evidence to conclude that any radioactive wastes from Rocky Flats were disposed of at the Lowry Landfill Superfund site in Arapahoe County, according to officials from the U.S. Environmental Protection Agency (EPA). EPA officials based this conclusion on their complete and thorough analysis of site sampling results and historical records. According to EPA's records, Rocky Flats sent approximately 55,630 gallons of waste oil, solvents and paint sludges - none of it radioactive – to Lowry Landfill for disposal.

July 1, 1997 – Disposing of excess property while returning tax dollars to the U.S. Treasury were two goals accomplished the first week in July through the sale of a former Rocky Flats manufacturing facility in California. The sale of the Oxnard facility, located in Ventura County between Los Angeles and Santa Barbara and consisting of seven buildings on 13.75 acres, completes transactions that return more than \$4 million in taxpayer funds. The Oxnard facility was sold to Rio Farms, a firm based in Camarillo, California.

The Kaiser-Hill Team's second anniversary at Rocky Flats was observed on July 1, 1997. Anniversary cake was served in all cafeterias at the Site and logo duffel bags were distributed to all Kaiser-Hill Team employees. Key accomplishments of Kaiser-Hill two years into its contract include:

- Achieved new positive levels of performance in occupational radiation safety.
- Removed contamination sources at four of the top-10 risk areas of environmental contamination.
- Drained more than 10,000 liters of dangerous plutonium and uranium solutions from aging tanks.
- Completed record offsite shipments of plutonium and uranium.
- Shipped more than 13,000 drums (equivalents) of low-level radioactive wastes – straight and mixed – and more than 4,500 drums (equivalents) of hazardous waste.
- Eliminated risk of hydrogen explosion through sampling 84 suspect tanks and releasing hydrogen buildup in 19 of the 84 and through the venting of hydrogen from all transuranic waste and residue drums.
- Removed special nuclear materials from two buildings allowing the Material Access Areas to be eliminated, reducing storage and security costs.
- Deactivated, decontaminated and demolished the first former radioactively contaminated building.

A \$7-million contract was awarded to Envirocare of Utah, Inc., for the transportation, treatment and disposal of Rocky Flats' low-level mixed waste. The contract could potentially last through the year 2000 and mean the eventual disposal of approximately 13,000 cubic meters of low-level-mixed waste, which would cut the Rocky Flats' inventory in half.

July 3, 1997 – At least six grand jurors testified before a federal magistrate about the 2 1/2 years they spent investigating allegations of environmental crimes at the Rocky Flats Site. The closed proceeding, which experts said is unique in the annals of the U.S. judicial system, allows the jurors to detail what they believe are serious environmental crimes and a government cover-up.

July 15, 1997 – A former Rocky Flats security chief, David Ridenour, charged that the federal government does not adequately oversee Wackenhut, the private firm hired to guard the Site. But DOE officials and Wackenhut said it's unlikely any terrorist could penetrate the multiple layers of security at the Site.

The second week in July, the Site was granted an amendment to its Certificate of Designation through Jefferson County to allow for the offsite disposal of solid sanitary waste, which is typical household-type trash including office trash, cafeteria wastes, construction debris and other common forms. This waste had been disposed of at an onsite landfill. The Kaiser-Hill Team awarded a contract for the disposal of solid sanitary waste from Rocky Flats to USA Waste, Inc., located in Erie, Colorado, in Weld County.

July 17, 1997 – Congressman David Skaggs announced that the House Committee on Appropriations had approved increased funding to expedite the cleanup of Rocky Flats. The Committee consolidated funding for several Rocky Flats programs into one "closure fund" and provided \$632.1 million to expedite the work of moving plutonium offsite and taking the buildings down. Under this approach, it was hoped that the cleanup could be completed in 2006 rather than 2010.

July 19, 1997 – Local newspapers reported that a team of the DOE in Washington, D.C., had been sent to investigate possible bugging at Rocky Flats and found a telephone system that could have leaked classified information. The four-person team was dispatched to the Site after reports that the Rocky

Flats chief of security hired an uncleared electronics expert to search for bugs in several offices. According to memos published by The Denver Post, Henry Dalton believed he was being spied upon by his own security team and by the national head of Safeguards and Security. No bugs were found.

July 24, 1997 – The Emergency Operations Center was activated in response to a power outage at several Site buildings. The outage occurred as the result of a planned activity in which tanks were being installed near Building 779. Power in the area of work was turned off prior to the work being performed. The tanks were being grounded as part of the installation process. When power was restored to Building 779, a ground fault occurred and an electrical power outage resulted. The power outage also caused several false alarms to sound.

July 28, 1997 – Marvin J. McCarty who worked as a radiation control technician for five years at the Site before his dismissal in October 1995, filed suit in Boulder County District Court charging he was fired for reporting safety violations and misuse of company time.

A team of 17 DOE-RFFO and eight off-site staff conducted a Safeguards and security Periodic Survey of the Site July 28 through August 8. Topic areas of the survey were Program Management, Protection Program Operations, Information Security, Nuclear Materials Control & Accountability, and Personnel Security. Survey findings were then provided to two RFFO and three DOE Headquarters members of the Review Board. During the close-out briefing, the Site received the composite rating of "satisfactory" with a Final Survey Report due for publication prior to November 7.

August 4, 1997 – The Emergency Operations Center was activated at 4:20 p.m. in response to a weather-related disruption of power in several Site buildings. A heavy late-afternoon rainstorm caused a power outage and triggered alarms. As a precaution, three buildings were evacuated. Workers cleared several alarms that sounded as a result of the power outage.

Secretary of Energy Federico Peña announced that Rocky Flats would be the first large-scale accelerated closure pilot project for the DOE's weapons complex. Peña made this announcement during an August 7, 1997, luncheon with local elected officials and members of the business community.

August 9, 1997 – About 40 demonstrators participated in a ceremony commemorating the 52nd anniversary of the atom bomb attack on Nagasaki, Japan. Some of the sign-carrying protestors marched from Boulder to the western entrance of Rocky Flats where they joined other activists for flower planting, face painting, prayer chanting and "spirit lifting." They planted flowers at the Peace Garden on Highway 93 next to the ashes of peace activist Alex Mayer, who had died three years previously.

August 10, 1997 – It was reported that Site officials recently had reported an elevation in water quality values at one of the Site's test points at Indiana Street and Walnut Creek. The average concentration of plutonium at this test point for the period mid-June to early July 1997 was 0.456 picocuries per liter. Site official communicated the results to representatives from local municipalities and in accordance with the Rocky Flats Cleanup Agreement, the information was reported to the CDPHE and the U.S. EPA.

August 25, 1997 – Workers at Rocky Flats safely completed the treatment of more than 700 cubic yards of chemically contaminated soils. All treated soils met applicable cleanup levels and were being returned to the ground. The soils came from a former waste drum storage site known as the Mound, which was excavated in March and April 1997. Excavated Mound soils were treated using a low-temperature thermal process that involved heating the contaminated soil to temperatures ranging from 150 to 300 degrees Fahrenheit. The process was used previously to treat soils excavated from three other top-10 Rocky Flats cleanup areas.

August 27, 1997 – Workers at the Site successfully reduced the contamination in the first of 13 of the most dangerously contaminated rooms at the Site. Referred to as "infinity" rooms by local news media,

these areas had contamination levels up to more than 400 times that which could be filtered out with a normal full-face respirator. Room 3549, a former plutonium recovery work area located in Building 371, was the first of the 13 areas to be decontaminated to the point that workers would be able to enter in standard full-face respirators. Several news reporters and photographers were on Site August 27 to do a story on progress made on the room decontamination.

September 2, 1997 – DOE Assistant Secretary for Environmental Management Al Alm responded to comments and questions from Rocky Flats' stakeholders at a public hearing on the discussion draft of Accelerating Cleanup: Focus on 2006. About 100 stakeholders and Site personnel gathered at the Arvada Center for the two-hour session.

A total of 119 drums of Raschig rings were shipped offsite, with the last load leaving September 4 for disposal at the Nevada Test Site. The rings were removed from tanks in Building 886, nine of which contained Highly Enriched Uranium Nitrate (HEUN). This activity was part of a super stretch performance measure calling for the deactivation of the Building 886 cluster.

The first week in September, workers met a super stretch performance measure with the RCRA closure of five large pencil tanks in Building 777. These waste oil collection tanks had to be isolated and drained as well as undergo non-destructive testing and size reduction.

September 8, 1997 – Many local newspapers ran stories on the recently released Inspector General's report criticizing some elements of the incentive programs at Rocky Flats. Both DOE/RFFO and Kaiser-Hill felt the IG report does not present an accurate or full picture of performance-based contracting at the Site. Specifically, the IG didn't appear to fully recognize the importance of safety and the true value of the Site's cost savings initiatives.

September 11, 1997 – An internal Department of Energy review of the Kaiser-Hill Safeguards and Security Program at the Site resulted in an overall "satisfactory" rating for the program.

September 12, 1997 – The Colorado Department of Public Health and Environment, the U.S. Department of Energy and Kaiser-Hill Company signed two new agreements that would be important tools in the closure of the Site. The agreements, called Compliance Orders on Consent, formalize Rocky Flats programs and include enforceable schedules for the implementation of activity management plans for idle equipment, hazardous waste tank systems and waste chemicals.

September 16, 1997 – Substantial progress has been made in the areas of safety, risk reduction, and material stabilization at the Site, according to an independent DOE assessment. The report, prepared by the DOE's Office of Oversight, Environment, Safety and Health in Washington, concluded Rocky Flats has made "notable progress" in safely accomplishing its new cleanup and closure mission.

September 18, 1997 – A CBS-TV investigative team was on Site doing a story on Safeguards and Security for an upcoming CBS evening news program.

September 23, 1997 – A tractor trailer truck carrying equipment used to assay waste drums jack-knifed at the intersection of Highway 93 and Marshall Road. No other vehicles were involved and no one was injured. The cab of the truck sustained a small amount of damage, but the trailer remained upright and was fully intact. There was no damage to the equipment inside the trailer. As a result of the accident, the fuel tank was ruptured and emergency teams responded to clean up the spilled fuel. The equipment inside the truck was standard monitoring equipment used to assay waste drums. The truck and the equipment belonged to the Los Alamos National Laboratory and the driver was a Los Alamos employee.

September 30, 1997 – Automated access to the Protected Area through PACS 1, 2 and 3 was implemented. All Q-cleared, L-cleared and unclassified personnel approved for access into the Protected

Area were required to enroll into the automated system before entry into the Protected Area would be permitted.

October 1, 1997 – A site-wide, catered barbecue, compliments of the Kaiser-Hill Team corporate funds, was held 10:30 a.m.-1:30 p.m. at Central Avenue and Seventh Street in the former Central Fuel Oil Storage Tanks area. Approximately 4,500 persons were served.

Starting in October, Q- and L-cleared employees passed through the automated badge and hand readers of the Personnel Access Control System rather than with a Security Police Officer checking their badge.

Workers removed approximately two half-crates of contaminated soil from the Mound after it was determined that it contained 602 picocuries per gram of Uranium-238. The applicable soil action level for Uranium-238 is 586 picocuries per gram. The soil was in a controlled area of the Site and did not pose an immediate public health hazard. It would be disposed of as low-level waste at the Nevada Test Site. Earlier this year, the soil was excavated from a small area of uranium contamination at the environmental waste staging area. The contamination came from cleanup operations for Trenches 3 and 4, two other recently excavated cleanup sites. Because of an erroneous mathematical calculation, this particular batch of soil was returned to the Mound site along with 700 cubic yards of treated soil from the Mound. Once the error was discovered, the soil was re-analyzed by an independent laboratory, which showed that the 8 cubic feet should not have been mixed into the treated Mound soil.

October 13, 1997 – The Site reduced the amount of low-level (LLW) and low-level mixed waste (LLMW) stored on Site by nearly 10 percent in FY97 through record shipments to licensed waste disposal facilities. Workers shipped a total of 2,560 cubic meters (12,160 drum equivalents) of LLMW offsite in FY97. In July and August, Rocky Flats shipped record amounts of LLMW – more than 1,700 cubic meters – to Envirocare, a licensed private waste disposal facility in Utah. This LLMW was in the form of saltcrete, which is a cemented processed waste salt containing small amounts of both radioactive and hazardous contamination.

October 13, 1997 – Thermo NUtech started to provide analytical services when it became the first facility at Rocky Flats to be privately owned, operated and maintained. The lab represented the first part of a major program to modernize analytical operations at the Site. It also made Buildings 123 and 881 available for closure activities and would substantially reduce the cost of essential analytical services on the Site.

October 24, 1997 – A winter storm unleashed its full fury with high winds and snow at the Site. Before it was all over, more than 30 inches of snow had fallen and between 100 and 150 people had spent the better part of the weekend at the Site. About half of those people were simply marooned because their relief person couldn't make it to the Site.

November 6, 1997 – Kaiser-Hill Company reported a worker exposure issue as a potential violation under the Price Anderson Amendments Act. The report arose out of an incident that occurred on August 12, 1996. Concerns about the incident were raised in late October following a series of urinalyses and other tests which confirmed that two workers involved in the incident received measurable radiation exposures. The incident occurred during a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) tank remediation project near Building 774. The tanks in question were being cleaned out in preparation for final closure. The tanks contained sludge from prior process waste operations and included plutonium, americium, uranium and chemical contamination. Indication were that the incident occurred as a result of a ventilation system malfunction in the remediation project containment tent.

On November 24 and 25, 1997, the CBS Evening News ran a two-part story on safeguards and security at Rocky Flats. The story was speculative and misleading.

December 15, 1997 – Workers at the Site completed the final shipment of saltcrete, making the removal of the entire existing inventory from the Site. A total of 4,275 cubic meters – 236 truckloads – of the low-level mixed waste was shipped to Envirocare, a licensed waste disposal facility in Utah, over the last 15 months. Saltcrete is a cemented processed waste salt containing small amounts of radioactive and hazardous contamination. From 1985 to 1996, liquid waste from the waste water processing facility at the Site was processed through an evaporator which created salt brine. The salt brine was mixed with cement to create a solid waste form – saltcrete – which meets Department of Transportation standards for offsite shipments.

In December, Rocky Flats began the move of worker radiation monitoring equipment from the Site to a biophysics facility in the Russian Ural Mountains with the removal of a 62-ton steel vault in Building 123, a building destined for demolition. The unique steel vault is an integral component of state-of-the-art radiation counting equipment that was being donated by the U.S. to Russia's First Institute of Biophysics facility located in the Chelyabinsk region in the Ural Mountains. The steel counting chamber from Rocky Flats was unique because its 6-inch steel walls, ceiling and floor were manufactured from pre-World War II steel, which is free of contamination from fallout and modern steel smelting processes. The graded liners of lead, tin and zinc also filter out natural radioactive sources and cosmic radiation which can affect measurement results because of the low sensitivity of the germanium detectors.

December 16, 1997 – Colorado Building and Construction Trades Council business manager Jim Brown and Bob Tiller, executive vice president of Kaiser-Hill, signed the Project Labor Agreement that governs all new construction at Rocky Flats as well as other work covered by the Davis-Bacon Act. The council represents more than 20 construction trade unions and approximately 300 workers at the Site. The agreement was last updated in 1973.

December 19, 1997 – Workers drained the last liters of dangerous plutonium solutions from the final high-level tank in Building 771 – eliminating the number one risk to workers in that facility. Completion of this top priority risk reduction activity addressed one of the major hazards in Building 771 that prompted its designation as the most vulnerable nuclear building in the DOE's weapons complex.

1998

A team looking into an August 1966 worker exposure incident identified several causal factors that were similar to ones associated with the Trenches 3/4 and the Building 777 drum movement incidents in 1996. The common causal factors include a lack of understanding of the hazards involved in the activity, inadequate work controls, and a lack of management oversight and cognizance of the project scope and specifics of the work being performed. The investigating team concluded that corrective actions implemented after these two events, which were not yet in place in August 1996, would probably have prevented the exposure from happening. However, some additional weaknesses were identified that require correction or strengthening of existing processing and procedures.

The DOE authorized funding for a targeted, limited Voluntary Separation Payment Program (VSPP). The program opened January 26, 1998, to a maximum of 240 salaried Kaiser-Hill Team employees who meet criteria detailed in Work Force Restructuring Plan Three, which became effective May 5, 1997. Concurrent with this VSPP, additional Spot VSPPs and involuntary separations were expected to continue to occur throughout the remainder of the fiscal year.

January 15, 1998 – DOE/RFFO signed new Memoranda of Agreements (MOAs) with two local law enforcement agencies – the Jefferson County Sheriff's Department and the Boulder County Sheriff's Department – for joint training and for required security emergency operations.

January 16, 1998 – The Site was formally added to the National Register of Historic Places. The designation by the National Park Service was announced in December, and followed nomination of the facility in early 1997. The nomination was compiled with the cooperation and assistance of the Colorado Historical Society and was approved by the Colorado State Historic Preservation Officer. Sixty-four buildings and facilities at the Site were included in a district which received the designation because of the Site's contribution to national defense during the Cold War era. The facilities ranged from small guard shacks to primary production buildings that were once used to produce components for nuclear weapons.

January 19, 1998 – Workers at the Site removed the final crates filled with low-level mixed waste (LLMW) from Tent 12, the first waste tent to be emptied as a result of an accelerated waste shipment schedule which began in 1996. A total of 10 waste tents containing LLMW are located in the industrial area at the Site. Two more waste tents are scheduled to be emptied by the end of September. The tent structures hold an average of 2,000 cubic meters of waste.

January 22, 1998 – The DOE announced major decisions on the treatment, storage and disposal of its transuranic waste, a type of radioactive waste generated as a result of defense operations. DOE will dispose of its defense-generated transuranic waste at the Waste Isolation Pilot Plant (WIPP) after the waste is treated as needed and packaged to meet WIPP's waste acceptance criteria. The department also decided that its sites with transuranic waste will prepare this waste on Site and store the waste until disposal at WIPP, except the Sandia National Laboratory in New Mexico. Sandia will ship its transuranic waste to Los Alamos National Laboratory for treatment and interim storage.

Surface Water staff completed installation of two new water monitoring stations (GS38 and GS39) as part of an ongoing effort to identify the source of contaminants found in Walnut Creek last summer. GS39 is located in the Central Avenue Ditch immediately north of the 904 Pad. It will collect samples of the surface water from the area of the 903 Pad that flows to South Walnut Creek. GS38 is also located in the Central Avenue Ditch, immediately east of Eighth Street. This station will monitor runoff from a drainage basin in the southwest quadrant of the Industrial Area.

In February, workers in Building 779 began the challenging process of tearing out the first of 104 gloveboxes from the building. Building 779 will be the first plutonium building to undergo major decontamination and decommissioning activities at Rocky Flats.

February 4, 1998 – Kaiser-Hill was fined \$174,000 for three accidents, including one in 1996 in which two workers breathed radioactive air. The action by the DOE reduces the \$19.5 million fee earned in 1997 by Kaiser-Hill.

February 11, 1998 – Workers at the Site safely stabilized the first 100 kilograms of high risk plutonium residue salts. Salt stabilization is a top priority because of potential risk to workers due to packaging integrity, reactivity, and fire concerns associated with certain types of residue salts.

February 18, 1998 – At a meeting between Energy Secretary Federico Pena, Acting Assistant Secretary for Environmental Management Jim Owendoff, and Acting Deputy Assistant Secretary for Site Operations Gene Schmitt, the new name "Accelerating Cleanup: Paths to Closure" came out. Names previously used had been 2006 Plan and the Ten-Year Plan.

February 23, 1998 – Workers safely drained the last liters of plutonium solution from the final plutonium process tank in Building 371. These plutonium solutions had posed a risk for potential spills or nuclear criticality and represented the highest risk to Site workers. Only three years previous, Rocky Flats had thousands of liters of dangerous plutonium solutions in more than 30 process tanks at the Site. In all, eight tanks containing 7,394 liters of plutonium solutions were drained in Building 371 and 23 tanks containing more than 3,400 liters of plutonium and uranium solutions were drained in Building 771. The last Building 771 tank was drained in December 1997. In addition, six tanks containing 2,700 liters of highly enriched uranium solutions were drained in Building 886. Solutions from the plutonium

tanks were stabilized through a precipitation treatment process in Building 371. The precipitate was then stored as nuclear material and the remaining liquid further processed in Building 374 as low-level waste.

February 24, 1998 – The Rocky Flats Industrial Area Transition Task Force held a press briefing to present a list of feasible reuse options for the core industrial area of the Site. The task force, charged with deciding the future use, offered the following three scenarios for public comment: Aggressive Redevelopment; Preserving Options; and Hands Off.

March 10, 1998 – Kaiser-Hill announced its intent to issue two requests for proposal – one for a major Site services support contract and the other for information technology services at the Site. The contracts were valued at up to \$360 million for the two 2-year contracts with three 1-year options.

April 7, 1998 – The Site received its much-awaited certification from the U.S. Department of Energy's Carlsbad Area Office. This certification grants Rocky Flats the authority to prepare radioactive transuranic waste for disposal at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, N.M., and to use the TRUPACT-II container for shipments. Rocky Flats had been preparing for the WIPP certification process since October 1995.

April 1998 – Building 779, slated to be the first major nuclear facility at Rocky Flats to be dismantled, began work on removal of 40 gloveboxes as a part of decommissioning activities to be accomplished in FY98.

April 16, 1998 – DOE and Kaiser-Hill agreed to resolve several self-reported potential nuclear safety violations with a \$100,000 payment by Kaiser-Hill. Terms of the agreement were specified in a Consent Order signed by DOE and Kaiser-Hill early in April. The Order covered several specific incidents that took place from January 1996 through January 1998. While no major accidents or worker exposures were involved, these events reflected programmatic problems with the implementation of radiological controls at the Site.

April 26, 1998 – About 200 protesters, 60 of who had walked from downtown Boulder to Rocky Flats, gathered at the traffic island at the West Gate to commemorate the anti-nuclear protests of 1978. The gathering was part of a "Return to the Nuclear Crossroads" conference weekend of remembering the protests, updates on the state of nuclear weapons development and waste cleanup and planning for the future of the anti-nuclear movement. The demonstration was peaceful and there were no arrests.

April 29, 1998 - The wrecking crew began bulldozing Building 123, the largest building to date to undergo demolition at the Site. Measuring in at approximately 19,000 square feet, Building 123 was one of the original buildings constructed when Rocky Flats first opened and was a former medical research facility that most recently had served as an analytical laboratory and housed employee radiological health services and records.

May 1, 1998 - The U.S. Environmental Protection Agency (EPA) fined the Department of Energy \$45,000 for two violations of surface water standards in Walnut Creek flowing from Rocky Flats. Elevated levels of radioactive plutonium and americium were found in June and July at a monitoring station on Walnut Creek at Indiana Street. DOE reported the incidents to the EPA and the media.

May 12, 1998 - It was announced that the Preble's Meadow Jumping Mouse was listed officially as 'threatened' under the Endangered Species Act. Protecting the mouse's habitat was in the hands of state and local governments rather than the federal government.

May 13, 1998 - Following certification by the U.S. Environmental Protection Agency (EPA), the DOE could begin disposal of radioactive waste in the Waste Isolation Pilot Plant (WIPP) near Carlsbad, N.M., once all other applicable health and safety standards have been met. The certification only covered

transuranic waste; however, a draft permit to also accept mixed transuranic waste (containing hazardous chemicals) was made available for public comment.

June 10, 1998 - Cleanup crews began the painstaking job of excavating Trench 1, a top priority, outdoor environmental cleanup site where more than 100 drums of depleted uranium chips were buried from 1954 to 1962. The trench - 250 feet long, 15 feet wide and 10 feet deep - was expected to contain more than 10 tons of depleted uranium, making it the largest single source of radioactive material in the environment at Rocky Flats.

June 15, 1998 - Cleanup crews at the Site started the installation of an innovative system to treat groundwater contaminants at the Mound Site Plume, an area of shallow groundwater contamination that originated from the Mound, a former waste drum storage area used from 1954 to 1970. Waste drums were removed from the Mound in 1970 and chemically contaminated soils were removed from the area in April 1997. However, some of the chemical contamination from this area had already seeped into shallow groundwater near the Mound. The contaminated groundwater plume was ranked seventh on the Rocky Flats Environmental Cleanup priority List and contained industrial chemicals and low levels of uranium.

June 22, 1998 - The last shipment of surplus equipment from Rocky Flats was transported to the Rocky Mountain Manufacturing Academy (RMMA). The shipment brought to nearly \$12 million the value of stainless steel manufacturing equipment that had been donated by the DOE to the RMMA, an initiative of the Colorado Community College and Occupational Educational System.

June 29, 1998 - Following through on a commitment made to Rocky Flats community members and workers during his June 5 visit to the Site, Energy Secretary Federico Peña delivered the DOE's new Rocky Flats Closure Project Management Plan to President Clinton. The management plan outlines specific actions the DOE is taking to accelerate the closure of Rocky Flats and further strengthens the DOE's and Clinton Administration's commitment to accelerated closure.

Rocky Flats achieved a major risk-reduction milestone in mid-July when workers safely processed the last high-level plutonium solutions, assayed the resulting oxide and placed it in storage. A total of 4,200 liters of plutonium solutions, including 780 liters of high-level solutions, were processed using a caustic waste treatment system which precipitates the plutonium from the liquid using potassium hydroxide. The solid plutonium is filtered and dried and then is packaged for future shipment to an off-site repository.

July 16-17, 1998 - More than 370 people representing 325 companies attended the first-ever Rocky Flats Small Business and Small Disadvantaged Business Conference held at the Arvada Center. Business representatives attending were primarily from Colorado. Contracting areas covered focused on environmental and site operations support contracts.

July 29, 1998 - Kaiser-Hill announced its intent to award two subcontracts at the Site - one for major site services support and the other for information technology services. Rocky Flats Closure Site Services, L.L.C., a subsidiary of Jacobs Engineering Group, Inc., was selected as the major site services support subcontractor. Work scope under this subcontract included utilities, facility planning, metrology, janitorial services, food service, laundry, roads and grounds, general maintenance, facility operations, property control and management, garage, traffic, transportation, and other basic operations functions. The subcontract was valued at up to \$75 million for the base period. DynCorp Information and Engineering Technology, Inc., was selected as the information technology services subcontractor. Work scope under their subcontract included computer systems applications and operations, computer help desk and desktop services, and telecommunication services. The subcontract was valued at up to \$16 million for the base period. Both subcontracts were for a 21-month base period with three one-year options.

July 31, 1998 - U.S. Ambassador to the United Nations Bill Richardson was confirmed as the next energy secretary. Richardson, 50, replaced Federico Peña, who left the department June 30.

August 1, 1998 - It was estimated that approximately 2,800 Site employees and their guests attended Family Day activities. Although the event was cut short by winds and rain, Family Day was an extremely successful endeavor. It was the first time a Family Day had been held since 1978.

August 3, 1998 - Workers at the Site achieved a major risk reduction milestone when the last high-level plutonium solutions drained from tanks were safely processed and placed in storage. A total of 4,200 liters of plutonium solutions, including 780 liters of high-level solutions, were processed using a caustic waste treatment system.

In August, a new technology being tested at Rocky Flats was announced. By applying an aerosol fog consisting of sugar, glycerin and water in a first-of-its-kind effort, contamination workers were able to dramatically decrease airborne plutonium contamination in one of the most contaminated rooms at the Site.

August 14, 1998 - The Colorado Department of Public Health and Environment (CDPHE) and the U.S. Department of Energy signed a Compliance Order on Consent resolving alleged violations of hazardous waste requirements at the Site resulting from delays in the draining of tanks containing radioactive and hazardous waste. At issue was the date that six tanks containing approximately 1,400 gallons of mixed residues were drained. The tanks were ultimately safely drained in February 1997. In the settlement, DOE agreed to a \$490,000 administrative penalty. Of that amount, \$100,000 would be paid in cash to the State of Colorado over the next two years, and the remaining \$390,000 of the penalty would be applied to accelerated repackaging and off-site shipment of wastes contaminated with low levels of radioactive constituents.

August 18, 1998 - A worker at the Site received a shallow puncture wound on his hand while handling debris from a dismantled glovebox in Building 779, when a sharp piece of metal pierced the five layers of protection he wore on his hands.

September 9, 1998 - An employee was fired after authorities accused him of stealing as much as \$10,000 in tools and other items. Richard Heidenreich, who had worked at Rocky Flats since the 1960s, worked in Building 779 and was authorized to take tools to other areas on Site.

September 1998 - Kaiser-Hill began phasing in a new, more stringent program to enhance the protection of workers from exposure to beryllium. To reduce the risk of chronic beryllium disease, the program was designed to minimize the number of workers possibly exposed to beryllium while also lowering the level of possible exposure.

September 30, 1998 - Workers at the Site completed the excavation of Trench 1, a former depleted uranium waste burial site and the largest and most complex environmental cleanup project to date at Rocky Flats. Cleanup crews removed 170 drums containing some 30 tons of depleted uranium. Excavation had begun on June 10. The Trench 1 excavation site was sampled to ensure that no contaminants of concern remained at the edges of the excavation site. Two hundred and fifty feet long, 15 feet wide and 10 feet deep, Trench 1 was used as a burial site for depleted uranium waste and other waste from 1954 to 1962.

October 1, 1998 - Workers at the Site waved goodbye September 30 to the final waste shipment of the fiscal year, marking the completion of a banner year of shipping waste away from Rocky Flats for disposal. Workers met two Rocky Flats Cleanup Agreement (RFCA) waste milestones and surpassed internal performance measures by shipping a total of 9,449 cubic meters - 380 truckloads - of low-level and low-level mixed waste to authorized waste disposal facilities throughout the FY.

October 19, 1998 - The DOE RFFO announced that the shipment campaign to transfer highly enriched uranium components from Rocky flats to the Y-12 facility at Oak Ridge, Tennessee, had resumed. Additional shipments would continue until all highly enriched uranium (HEU) destined for Y-12 was removed from Rocky Flats. The target date for that removal was September 1999.

October 26, 1998 - Kaiser-Hill Company recorded more than 85 percent completion of the activities for its standard performance measures for FY1998 while improving its safety record. This percentage represented work accomplished and not fee earned.

November 10, 1998 - For the third year in a row, employees at the Site met all negotiated cleanup milestones and nuclear material target activities under the Rocky Flats Cleanup Agreement (RFCA) for 1998 as of September 30, 1998.

November 14, 1998 - The Rocky Flats Environmental Technology Site was recognized for its designation on the National Register of Historic Places during the Jefferson County Historical Commission's 20th Annual Hall of Fame Award Ceremony. Rocky Flats was formally listed on the National Register of Historic Places by the National Park Service in 1997.

November 23, 1998 - It was announced that in an ongoing effort to restructure the Rocky Flats Environmental Technology Site work force, a voluntary separation package was being offered to eligible Kaiser-Hill Team employees. This offering followed the DOE's November 17 approval of continued work force restructuring activities affecting up to 600 positions over the next two to three years. Approximately 200 to 400 of those positions were expected to be reduced in FY1999. The VSPP opened December 1.

November 25, 1998 - The DOE announced its decision to prepare certain materials containing plutonium currently stored at the Site for off-site disposal or other disposition. The decision was a key step toward the goal of completing the cleanup of Rocky flats by 2006.

December 2, 1998 -- In a joint company statement, Safe Sites of Colorado and Rocky Mountain Remediation Services announced that they were proceeding to carry out Kaiser-Hill's direction to transfer the work scope in Buildings 779, 771/774 and 776/777 from SSOC to RMRS.

December 18, 1998 - A surplus concrete plant found new use in the private sector as part of an ongoing DOE program to disposition excess government property and speed cleanup and closure of the Site. The 150-ton concrete plant, no longer needed at Rocky Flats, was dispositioned to a small company in Berthoud, CO, port-A-Pour, that builds concrete batch plants for sale throughout the nation.

December 22, 1998 - An aggressive effort to purge Building 771 of classified matter, remove drummed and non-drummed residues, and characterize Special Nuclear Materials holdup was completed. This was a very positive step toward deactivation in Building 771 and, as a result, the Building 771 Material Access Area could now be accessed by unescorted L-cleared personnel.

After spending hundreds of hours investigating the Site's programs, an independent panel established by outgoing U.S. Rep. David Skaggs, concluded that nuclear materials stored at Rocky Flats are safe from theft or terrorist attacks, while overall security measures earned a "B" grade.

December 23, 1998 - Workers pouring dirt into Trench 1, which was excavated during the summer, found a small, radioactive drum just outside the official boundaries of the trench. When clean fill dirt was dumped into the trench, a part of the wall collapsed, exposing the stray drum. Because the main portion of the trench contained tons of debris, it was not surprising a ground-penetrating radar search missed the small drum.

In December 1998, the ALARA Oversight Committee (AOC) recommended and approved lowering the Site Administrative control Level (ACL) from 750 mrem to 500 mrem for calendar year 1999. The

change to the ACL was prompted during the review of 1998 and previous years' dose data which indicated a large percentage of the Site radiological worker population was already receiving an annual dose of less than 500 mrem. It was determined that the ACL "bar" should be lowered to more aggressively control and bring awareness to personnel dose issues.

1999

February 1, 1999 - Rocky Flats became the first major DOE site to complete Y2K renovation and implementation of mission-essential systems - two months ahead of the Office of Management and Budget goal and ahead of the accelerated goals Energy Secretary Bill Richardson set for the DOE complex.

February 2, 1999 - A worker at the Site sustained a cut to his left index finger while using a portable band saw to cut up equipment contained inside a glovebox in Building 779. The worker was taken to the Site medical facility where the wound was found to be contaminated and was treated to reduce radioactive contamination. All decontamination and deactivation work using portable electric tools was suspended at the Site until steps could be taken to ensure the safe resumption of these operations.

February 2, 1999 - The site recorded sustained winds blowing at 63 mph and gusts up to 103 mph. Several trailers were damaged and trailers 130B and D had to be evacuated because pieces of the roof came loose and were flapping in the wind. Sheets of plywood came loose from the trailers and flew into the parking lot damaging several automobiles. The winds also caused miscellaneous damages and several localized power outages.

February 9, 1999 - A public hearing on a proposed Chronic Beryllium Disease Prevention Program rulemaking was held. The goal of the proposed rule was to minimize the number of workers exposed to beryllium while employed by the DOE or its contractors; minimize the levels of and potential for exposure to beryllium; establish the medical surveillance requirements to ensure early detection and treatment of disease; and assist affected workers who are dealing with health effects.

February 9, 1999 - Chris Shields, a concert producer based in Aspen, expressed his desire to stage a 24-hour music festival, "Rock the Flats," just across the highway from Rocky Flats. No exact date had been set for the event.

February 15, 1999 - Seven jurisdictions neighboring the Site formed a new organization to monitor and advise the DOE on activities at the Site. The Rocky Flats Coalition of Local Governments, comprised of representatives from Boulder and Jefferson counties, the cities of Arvada, Boulder, Broomfield and Westminster, and the town of Superior, will replace the Rocky Flats Local Impacts Initiative.

February 16, 1999 - The DOE released a Record of Decision announcing its decision to prepare certain plutonium bearing materials currently stored at the Site for off-site disposal or other disposition.

February 23, 1999 - Workers at Rocky Flats completed an extensive residue sampling and analysis program. In all, workers took and analyzed 1,358 residue samples. These analyses were being conducted in order to characterize the material for processing, including determination of the risk this material presents. Tests were performed for such things as shock sensitivity and pyrophoricity.

February 28, 1999 - Workers at the Site completed the removal of a 90-foot high exhaust stack from the first plutonium building complex to undergo decontamination and demolition at the Site. The stack, which was 3 feet in diameter and weighed nearly 20 tons, was lifted using a 150-ton crane, rotated, and then stabilized and set down using an additional 70-ton crane. The Building 779 cluster includes Building 779, a former nuclear weapons research and development facility, and its surrounding support structures which include the Building 729 filter plenum and its exhaust stack.

March 8, 1999 - Workers at the Site completed the processing and packaging of all 210 kilograms of residue resins - reducing a fire hazard and meeting an important Defense Nuclear Facilities Safety Board milestone.

March 19, 1999 - Workers at the Site have shipped more than 1,807 cubic meters of low-level radioactive waste to the Nevada Test Site since Oct. 1, 1998. This accomplishment meets an important waste shipping milestone under the Rocky Flats Cleanup Agreement (RFCA) a full six months ahead of schedule.

March 22, 1999 - A federal judge lifted a long standing injunction, clearing the way for the U.S. Energy Department to begin burying radioactive waste under the New Mexico desert. The first batch of so-called "transuranic waste" to head to the controversial Waste Isolation Pilot Plant near Carlsbad, N.M., would be shipped from Los Alamos National Laboratory.

March 25, 1999 - The Site received U.S. Environmental Protection Agency (EPA) certification to ship waste to the Waste Isolation Pilot Plant near Carlsbad, N.M. EPA certification was the last hurdle Rocky Flats had to overcome to be able to ship waste to WIPP.

March 26, 1999 - Kaiser-Hill Company recently requested an independent evaluation of its system for reporting work restrictions resulting from on-the-job worker injury. The evaluation was conducted by safety experts from three independent companies. The review was requested by Kaiser-Hill to make certain that work restrictions were being properly documented by its subcontractors and ensure that medical personnel did not feel pressured to under-report work restrictions.

March 26, 1999 - Energy Secretary Bill Richardson announced that the first shipment of defense-generated transuranic radioactive waste arrived safely at the DOE's Waste Isolation Pilot Plant (WIPP). The shipment was from the Los Alamos National Laboratory (LANL) in New Mexico. Hundreds of people were on hand to watch this important milestone in the Energy Department's work to permanently dispose of defense-generated transuranic waste left from the research and production of nuclear weapons.

March 29, 1999 - Jessie Roberson, Rocky Flats Field Office Manager, approved the Site's Property Management System. The approval of the system - a first in the history of the Site - would provide streamlined property disposal processes and enable the Kaiser-Hill Team to work more effectively toward the 2006 closure.

In late March. As workers excavated a trench to keep contaminated water from flowing into Rock Creek, a backhoe dredged up fossils of a 1.2 million-year-old horse. The backhoe dumped a horse tooth on the pile of dirt and workers then found parts of two toes, a piece of the jaw and several bone fragments. The pieces were identified by the head of earth and space sciences at the Denver Museum of Natural History.

April 1, 1999 - A jury awarded a whistleblower and the federal government \$1.39 million in a Rocky Flats pollution case. The award was a fraction of the \$168 million sought from Rockwell International Corp., a former contractor at the site. The lawsuit filed a decade ago by whistleblower James Stone, a 74-year-old former Rocky Flats engineer, contended Rockwell officials lied to the U. S. Department of Energy about environmental problems at the plant in order to collect bonuses and win a new contract to operate Rocky Flats.

April 5, 1999 - A Labor Department mediator heard a whistleblower case involving a Rocky Flats guard who sparked a 1997 flap over security at the Site. Mark Graf claimed he was given less desirable assignments after his allegations of potential security breaches at Rocky Flats appeared in a newspaper and on CBS television. The U.S. Department of Labor agreed with Graf and awarded him \$10,000.

April 26, 1999 - Rocky Flats workers met another major milestone in their plan for the accelerated closure of the Site by making the last shipment of "pondcrete" a week earlier. In all, 9,225 cubic meters of pondcrete (the equivalent of 43,000 55-gallon drums) were safely shipped to Envirocare, a licensed disposal facility in Utah, for treatment and disposal. This accomplishment exceeded a Rocky Flats Cleanup Agreement requirement by more than one year.

May 1999 - Seven municipalities that surround Rocky Flats - Arvada, Boulder, Boulder County, Broomfield, Jefferson County, Superior and Westminster - formed the Rocky Flats Coalition of Local Governments to give local governments greater leverage over federal cleanup of Rocky Flats, with David Abelson as executive director of the Coalition. The Coalition would receive 75 percent of its \$533,000 annual budget from the DOE and Kaiser-Hill and the remainder would come from the Colorado Department of Public Health and Environment and local government contributions.

May 17, 1999 - Secretary of Energy Bill Richardson visited Rocky Flats to announce creation of the Rock Creek Reserve, an 800-acre parcel of land in the northwest part of the site's Buffer Zone. Joining Secretary Richardson was Colorado Governor Bill Owens, the U.S. Fish and Wildlife Service, county representatives, local students, and others. The land is home to the historic Lindsay homestead and is prime habitat for the endangered Preble's meadow jumping mouse, bald eagles, burrowing owls, peregrine falcons and the Eastern short-horned lizard.

May 21, 1999 - Kaiser-Hill delivered the 2006 Closure Project Baseline to the Department of Energy. The Baseline mapped out the Site's next six years - the scope, cost and schedule of activities that will result in the safe closure of Rocky Flats four years ahead of the 2010 closure date.

May 24, 1999 - Workers began leveling the first plutonium-related facility planned for demolition at the Site. The removal of the Building 729 filter house, followed on the heels of a lengthy decontamination process which included safe removal of hazardous wastes, chemicals and radioactive materials. Before it was closed in 1989, the building serviced as a filter house that scrubbed the air flowing out of one of the site's primary research and development centers. The nine-story exhaust stack attached to building 729 was taken down February 28.

May 26, 1999 - The last glovebox of the 133 gloveboxes in Building 779 was removed. In addition, after a lengthy decontamination process, workers were set to begin leveling the Building 729 filter house, which was the first plutonium-related facility planned for demolition at the Site.

May 26, 1999 - Safety-Kleen Inc. abandoned plans to seek a low-level radioactive waste license for its Deer Trail, Colorado, hazardous waste disposal facility. The license would have allowed Safety-Kleen to accept a broad range of low-level waste, including so-called "orphan" waste, from the Site.

June 7, 1999 - RFFO Manager Jessie Roberson and K-H President Bob Card signed a Site Safety Analysis Report Authorization Agreement governing the many complex activities that must take place to safely close the Site. The Site SAR was developed as part of the overall plan to provide a basis for authorization (licensing basis) of activities at the Site not covered by facility-specific Authorization Bases. It also establishes the mechanism for providing the appropriate safety documentation for facilities with less than nuclear hazard Category 2 quantities of material.

June 15, 1999 - Rocky Flats became the third U.S. Department of Energy site to ship transuranic radioactive waste to the Waste Isolation Pilot Plant. The first shipment from the Site contained 26 drums of non-mixed transuranic waste (clothing, rags, residues and debris) in three TRUPACT-11 shipping containers. The truck drove onto Colorado Highway 93 amid shouts from some 75 protestors who said burying the waste poses a hazard to future generations. The 702-mile trip to WIPP took about 17 hours and was monitored by TRANSCOM, a computerized satellite tracking system.

June 23, 1999 - Secretary of Energy Bill Richardson announced that all plutonium pits, the primary component for the nation's nuclear weapons historically provided by Rocky Flats, have been removed from the site and that the shipments of the nuclear material have been safely completed.

July 9, 1999 – Workers at the site removed and treated the last of nearly 10,000 liters of plutonium liquids from Building 371. Liquids containing radioactive elements such as plutonium and uranium presented the greatest potential risk at the site in terms of potential spills or reactions. The completion of liquid processing activities for Building 371 met a Target Activity under the Rocky Flats Cleanup Agreement and a Defense Nuclear Facilities Safety Board Milestone.

July 15, 1999 – Secretary of Energy Bill Richardson announced a Clinton administration proposal that would help current and former DOE contract workers who are ill because of exposure to beryllium at DOE nuclear facilities. The legislation would reverse a decades-long DOE practice of opposing most worker health claims and, for the first time, would provide financial assistance to DOE workers made ill by their exposure to beryllium.

In the wake of radiation-related problems which slowed the process of dismantling contaminated gloveboxes in Building 779, decontamination and decommissioning officials at the site developed new shielding structures to protect workers as they begin to break down gloveboxes in Building 771. Known as "birdcages," the structures are aluminum and steel enclosures erected inside the negatively pressurized plastic containment tents in which workers had been manually dismantling the site's gloveboxes.

July 30, 1999 – The U.S. DOE announced its decision to initiate negotiations with Kaiser-Hill Company, L.L.C., on a contract to close the site. The current contract with Kaiser-Hill was set to expire June 30, 2000. The closure contract to be negotiated would potentially run from July 1, 2000, to December 31, 2006.

August 2, 1999 – Workers successfully concluded stabilization of plutonium-laden salt residues - marking a key accomplishment for an important program that earlier had encountered unexpected complications and delays. The completion of high-risk salt residue stabilization fulfills a Defense Nuclear Facilities Safety Board Milestone.

August 8, 1999 – Labor contract negotiations that began July 7 with Wackenhut Services, L.L.C., and United Government Security Officers of America (UGSOA), Local #1, resulted in ratifying a contract for a six-year Labor Agreement.

August 10, 1999 – Buildings and equipment used as part of the "pondcrete" waste program at the site during the 1980s were dismantled and safely removed. The elimination of the decade-old pondcrete wastes and related facilities had been a priority in the continuing cleanup of Rocky Flats. In April, the last shipment of pondcrete blocks was sent to the Envirocare disposal facility in Utah. In all, the equivalent of 43,000 55-gallon drums of pondcrete was removed from the site.

August 21, 1999 – Kaiser-Hill was fined \$82,500 for using substandard boxes to store nuclear waste in 1997 and 1998. The problem was discovered before any materials leaked from the boxes, which had bad welds. The fine was levied by DOE because the boxes should have been inspected before they were used. Kaiser-Hill had bought the boxes from Vulcan Industries. Nine boxes were used before the problem was discovered.

August 26, 1999 – Of all plutonium releases from Rocky Flats, a devastating fire the night of September 11, 1957, produced the greatest health risk for people living and working near the site, according to a groundbreaking study released by the state health department. Overall, the nine-year study found that the primary method of contact with plutonium would have been inhalation of particles and that the increased risk of cancer was greatest for someone who worked outside and lived south of Leyden.

August 27, 1999 – Nuclear weapons components known as enriched uranium (eU) hemishells that historically have been stored at the site have successfully been treated in preparation for their removal from the site. The parts underwent processing that included use of a first-of-its-kind electrical and chemical procedure that safely removed plutonium contamination. The completion of the two-and-a-half-year eU hemishell decontamination project made it possible for about 75 percent of the hemishells to be shipped to the DOE's Oak Ridge facility in Tennessee, thus concluding another step toward eliminating the nuclear inventory from Rocky Flats.

September 2, 1999 – DOE released an Amended Record of Decision announcing a revision to a previous decision on management of sand, slag, and crucible plutonium residues, currently stored at the site in preparation for their disposal. Disposal of the plutonium residues would eliminate health and safety concerns associated with interim storage of these materials.

September 8, 1999 – A Finding of No Significant Impact (FONSI) was approved following an Environmental Assessment examining the Temporary Storage of Transuranic and Transuranic Mixed Waste (TUR/TRM) at the site. The Environmental Assessment was initiated to examine alternatives for the interim storage of the waste until that material could be safely disposed at WIPP.

September 10, 1999 – Energy Secretary Bill Richardson reaffirmed a deadline of 2006 for closing the site and signed an agreement formalizing the date when he met in Denver with Gov. Bill Owens and the governors of Washington, South Carolina and Tennessee. The agreement pledged cooperation between the state governments and the U.S. DOE and set timetables for cleaning up nuclear facilities.

September 16, 1999 – The DOE announced a federal grant totaling \$250,000 had been awarded to help fund operation of the Rocky Flats Coalition of Governments. In June, the Coalition was designated as the Rocky Flats Community Reuse Organization for the site. The coalition provides a mechanism for local governments in the vicinity of the site and their citizens to work together on issues of mutual concern relating to site reuse and worker transition activities. The Coalition also serves as a focal point for local government communication and advocacy with state and federal agencies regarding future use, long-term stewardship, and other issues.

September 20, 1999 – Storage tanks and a piping system that had held some of the potentially most dangerous liquids at the site were safely prepared and packaged for shipment off site. The tanks and pipes were part of the Building 886 Critical Mass Laboratory and had, for many years, contained Highly Enriched Uranium Nitrate (HEUN) solutions. Before the laboratory was shut down in 1987, HEUN solutions were used to perform controlled criticality experiments to help establish safety standards for handling and processing nuclear materials.

September 24, 1999 – President Clinton announced his intent to nominate Jessie M. Roberson as a member of the Defense Nuclear Facilities Safety Board (DNFSB). The DNFSB is an independent entity within the executive branch that provides recommendations and advice to the President and Secretary of Energy regarding public health and safety issues at DOE's defense nuclear facilities.

Water samples taken from Buildings 452, 111, 891 and 771 were found to have levels of lead above the EPA action level of 15 parts per billion (ppb). As a precaution, the site instituted a sitewide "Flush Before You Drink" program, although the lead levels detected in site buildings were far too low to cause an immediate health concern.

September 28, 1999 – Construction of two innovative systems that have no moving parts, require no electricity, and use recycled materials to cleanse contaminated groundwater were completed at the site. The systems were installed to treat the East Trenches Plume and the Solar Ponds Plume, where contaminants from historic site operations had seeped into groundwater. A similar treatment system had been installed at the Mound Plume in 1998 to effectively remove industrial chemical contamination.

October 6, 1999 – Workers at the site safely removed significant quantities of nuclear materials from Building 771, thus effectively eliminating the need for Material Access Area (MAA) security measures in Building 771. Nuclear materials were being consolidated into Building 371 for eventual offsite shipment.

In early October, an employee information campaign on the 2006 closure plan was under way. Packets containing an employee handbook, *Road to 2006 Closure*, and various charts was distributed during briefings with all Kaiser-Hill Team and third-tier employees.

October 1999 – A book, written by University of Colorado history major Len Ackland, that chronicles the history of Rocky Flats was made available in local book stores. "Making a Real Killing: Rocky Flats and the Nuclear West," was published by the University of New Mexico Press.

October 26, 1999 – The site reached a major milestone with the start of demolition of Building 779. A former weapons research and development laboratory, Building 779 would be the first major plutonium facility at Rocky Flats to be full decontaminated and torn down, and would be the first-ever demolition of a major plutonium facility anywhere in the United States.

October 29, 1999 – Jessie Roberson's nomination to the Defense Nuclear Facilities Safety Board was confirmed by the United States Senate.

In a great burst of teamwork, the Building 776/777 team removed some of the site's most dangerous materials in record time to meet both a Comprehensive Performance Measure and a Rocky Flats Cleanup Agreement target milestone. Six of the building's seven vaults were empty of their contents. Category I and II special nuclear materials had been shipped off site or transferred to Building 707 for processing or to Building 371 for interim storage.

November 1, 1999 – U.S. Department of Energy Secretary Bill Richardson was on hand to mark the demolition of Building 779. Secretary Richardson praised the 5,000-plus Rocky Flats workforce for their cleanup progress. Joining Richardson at the Building 779 demolition event were Colorado Governor Bill Owens and Colorado Attorney General Ken Salazar. Area news media also attended the ceremony.

November 11, 1999 – Out of concern for safety and the quality of the overall project, the management team decided to slow down, pause, or temporarily halt most production activities to regain a sitewide focus on the job at hand.

November 11, 1999 – Kaiser-Hill issued a "cure letter" to Rocky Mountain Remediation Services demanding in part that the company fix unspecified documentation and conduct of operations problems.

December 8, 1999 – Secretary of Energy Bill Richardson announced that the DOE had put in place the strongest worker protection program in the world to prevent lung disease associated with exposure to beryllium. Under the program, all DOE sites with potential beryllium exposure to workers would be required to put in place stricter controls to minimize that exposure and provide for early detection of disease. The new rule, published in the Federal Register, established the Chronic Beryllium Disease Prevention Program across the department and took effect on January 7, 2000.

For the fourth year in a row, employees at the site met all negotiated cleanup milestones and nuclear materials target activities under the Rocky Flats Cleanup Agreement (RFCA). Work completed in FY99 included:

- Shipped 1,750 cubic meters of low-level radioactive waste off site.
- Installed monitoring system at 903 Pad/Ryan's Pit plume and verified performance of existing groundwater treatment system at Mound plume.

- Completed installation and began operation of new groundwater treatment systems at Solar Pond and East Trenches plumes.
- Developed comprehensive characterization and remediation strategy for the Industrial Area soils and groundwater.
- Completed characterization of the 903 Pat as defined in the approved Sampling Analysis Plan.
- Thermally stabilized 90 percent of the plutonium oxide generated.
- Completed the offsite shipping of plutonium pits.
- Drained six systems in Building 771.
- Removed solid Category I and II special Nuclear Materials from Buildings 776 and 777.

Employment for the Kaiser-Hill Team at the end of 1999 was 3,114.

The New Millenium:

Effective January 1, members of United Government Security Officers of America Local #1 changed affiliation to Rocky Flats Security Officers Independent Union Local #1.

Over the New Year's weekend, workers at the site completed the demolition of Building 779, the first plutonium facility of its size and complexity in the entire nation to be decontaminated and demolished.

January 25, 2000 – Secretary of Energy Bill Richardson announced a DOE agreement with Kaiser-Hill Company on a unique closure contract focused on the safe cleanup of the site by December 15, 2006. The contract, effective February 1, 2000, was valued at approximately \$4 billion.

January 31, 2000 – The DOE issued a second civil penalty to Kaiser-Hill for failure to adequately implement aggressive corrective actions it had committed to as part of an enforcement action last year. This \$55,000 fine followed an \$82,500 civil penalty issued in August 1999 for problems with procurement processes in 1997 and 1998.

February 9, 2000 – It was announced that workers at the site had fully implemented an improved safety program that would drive safety into every aspect of work performed at the site. Called Integrated Safety Management (ISM), the program fulfilled a Defense Nuclear Facilities Safety Board recommendation. Implementation was completed nine months ahead of the DOE's deadline of September 30, 2000.

In appreciation of a positive safety trend begun late in 1999, \$5 lunch coupons were distributed to all site employees.

February 25, 2000 – The DOE released its final decision for low-level waste (LLW) and mixed low-level waste (MLLW) treatment and disposal sites. For LLW treatment, DOE would continue the practice of each site treating its own waste. For LLW disposal, DOE would continue disposal of onsite waste at sites that already have LLW disposal facilities (Hanford, Idaho, Los Alamos, Nevada Test Site, Oak Ridge, and Savannah River) and would continue to use the Hanford Site and the Nevada Test Site for disposal of LLW from other DOE sites that did have disposal capacity. For MMLW treatment, DOE would continue to use Hanford, Idaho, and Oak Ridge to treat waste from other DOE sites, and would begin to use Savannah River to treat waste from other DOE sites. For MLLW disposal, DOE decided to begin using the disposal facilities already constructed at the Hanford Site and at the Nevada Test Site for off-site waste.

February 28, 2000 – Kaiser-Hill Company announced initial plans to award more than \$1 billion in new subcontracts over the new few years for completion of the cleanup and closure of the site.

The State Health Department fined Rocky Flats contractors \$95,000 for problems with waste tank inspections. In a "consent order" dated February 25, the department requested Kaiser-Hill, RMRS and SSOC pay \$15,000 to the state as an administrative penalty and \$80,000 to the Western States Project to support training government workers in environmental laws and regulations. The fine was a result of about two gallons of mixed hazardous waste, mostly phosphoric acid, overflowing onto a building dock at the site on June 9, 1998.

March 3, 2000 – The Soil Action Level Oversight Panel – a group of local governments, citizens, activists and scientists – which hired the Risk Assessment Corporation to conduct a 15-month technical review of what constitutes safe radiation levels in the soil following cleanup, released its study. The study concluded that significantly more radioactive contaminants should be removed from the soil at the site than is required.

March 6, 2000 – Secretary of Energy Bill Richardson named Barbara A. Mazurowski as DOE's Rocky Flats Field Office Operations Manager.

March 7, 2000 – Kaiser-Hill suspended or partially suspended operations in four nuclear buildings – 707, 771, 774, and 776/777 – upon determining that certain fire suppression systems designed and installed in the early 1970s may not have adequate water pressure if simultaneously activated.

EOC ACTIVATION: March 8, 2000 – The Emergency Operations Center at the site was activated in response to gale-force winds and all non-essential personnel were asked to report to work at noon. As a result of winds recorded at up to 101 mph, some buildings experienced power bumps and false alarms, and a tractor-trailer truck was toppled near B130.

March 11, 2000 – The first shipment of radioactive waste since November safely reached the Waste Isolation Pilot Plant in New Mexico. Twenty-eight drums of radioactive contaminated waste were sent on a flatbed truck and traveled a special route to avoid passing through Carlsbad, N.M.

March 16, 2000 – More than 20 employees were honored at an award ceremony for making suggestions and/or improvements that reduced or had the potential to reduce dose on site. The recipients were given supermarket certificates and a framed letter commending them for their efforts.

March 17, 2000 – A security policy officer received an injury to his leg when his holstered handgun accidentally discharged. No one else was involved, and the officer was not responding to any incident when the accident occurred. Initial reports indicated that the gun apparently discharged as a result of interference from a key chain positioned in the vicinity of the holster. The officer, a member of the site's elite Special Response Team, was taken to St. Anthony Central hospital for treatment.

March 18-19, 2000 – Local newspapers reported that Rocky Flats and U.S. Forest Service officials had finally settled upon the environmental conditions that must be met before Rocky Flats could set fire to 500 acres of grassland at the site.

March 19, 2000 – The Boulder Daily Camera reported that Rocky Flats workers and managers had violated key safety procedures in February, increasing the risk of a dangerous nuclear explosion, according to three consecutive Defense Nuclear Facilities Safety Board weekly reports that had been released.

March 20, 2000 – A protest was conducted on the Downtown Mall in Boulder against a planned burn of vegetation at the site.

March 22, 2000 – The first shipment of classified plutonium metal parts from the Site safely arrived at the Savannah River Site in South Carolina. The shipment was part of a campaign to safely complete the removal of plutonium metal from the site in 2002. At Savannah River, the metals would be immobilized in glass through a process called vitrification and then burned as mixed oxide fuel in commercial reactors.

In March, Kaiser-Hill vice presidents were placed as project managers and program directors for the projects and support organizations.

March 27, 2000 – A public meeting was held to discuss DOE's plan to implement a test burn in the western section of Unit 4 of the Buffer Zone on Saturday, April 1, weather permitting. The test burn would be conducted under prescription conditions by the U.S. Forest Service. The test burn was postponed due to weather and was rescheduled for April 6.

NEWS RELEASE: April 4, 2000 – New technologies slash millions from waste costs – A combination of innovative technologies and common-sense approach to waste packaging saved the site and the U.S. taxpayers an estimated \$190 million dollars since late 1998. The technologies were a Pipe Overpack Component to safely and cost-effectively store and transport plutonium residues; a Gas Generation Testing Canister which avoided costs for unnecessary repackaging of waste; and High Efficiency Particulate Air Filter Bagout Bags that increased the allowable fissile material per transuranic waste drum.

April 6, 2000 – A U.S. Forest Service crew burned about 50 acres of grassland in the Rocky Flats Buffer Zone to see if a larger area could be safely burned later in the month. On April 11, DOE officials cancelled the further burn of grasslands because the vegetation had gotten too green, creating conditions unsuitable for a prescribed burn.

NEWS RELEASE: April 10, 2000 – Final shipments of scrub alloy completed – Workers at the site finished the removal and shipment of scrub alloy – an important step toward eliminating hazardous materials and closing the site in 2006. Approximately 400 containers of scrub alloy were shipped to the Savannah River Site in South Carolina.

On April 10, the criticality system in B886 was turned off, marking an important site closure milestone and saving hundreds of thousands of dollars for the cleanup mission. A team had worked for a year to complete a criticality incredibility analysis which provided the technical proof that a criticality was no longer possible in B886.

April 12, 2000 – It was announced in local newspapers that workers and former workers at Rocky Flats could benefit from a Clinton administration plan to compensate thousands of people who were exposed to radiation while helping to build the nation's nuclear arsenal. The administration plan would provide full medical benefits and lost wages – or in some cases \$100,000 lump-sum payments – to more than 3,000 weapons plant workers at an estimated cost of more than \$400 million in the first four years of the program.

April 17, 2000 – Local newspapers announced that Sen. Wayne Allard, R-Colo., had drafted a bill to make Rocky Flats Colorado's seventh national wildlife refuge – a designation that would take effect after cleanup efforts at the site are complete.

April 20, 2000 – Local newspapers reported that the cleanup of Rocky Flats would cost \$400 million more than last year's projected cost, according to a DOE report issued the previous day. The cleanup had been estimated at \$7.3 and officials said it would now cost \$7.7 billion and would be cleaned up by 2006.

April 25-27, 2000 – The DOE hosted its first annual national small business conference in Denver. The purpose of the conference was to educate the small business community about the business opportunities available through the Department in the areas of science, environmental quality, energy resources, national security and administrative services.

April 20, 2000 – The site held a minute of silence in remembrance of the Columbine tragedy that had occurred the year previous.

In May 2000, the House approved a plan sponsored by Rep. Mark Udall, D-Colo., that would allow the DOE to offer incentives for early retirement to some workers at the site and other benefits to those who would remain at the site until it is closed in 2006.

May 30, 2000 – Many of the nation's top police canine units sharpened their skills at the site the first week in June in an active training exercise as part of the U.S. Police Canine Association's 2000 National Training Seminar held in Boulder.

To show appreciation for the site's outstanding performance in radiological and criticality safety, \$5 certificates redeemable at site cafeterias were provided to day-shift employees and contractors and employees and contractors working off-shifts were distributed \$5 certificates redeemable at an offsite establishment. Distribution of certificates began the first week in June 2000.

Kaiser-Hill was the first company to meet the Rocky Flats Foundation's challenge to raise emergency funds for victims of the May 2000 Los Alamos area fire. For every dollar donated to the fund, the Foundation would match 50 cents up to a total of \$2,500.

June 12, 2000 – Barbara Mazurowski officially took over as the Energy Department's Rocky Flats Field Office Manager. She had been named to the position by Energy Secretary Bill Richardson in March.

June 13, 2000 – Four Rocky Flats Firefighters – Mike Smith, Matt Ketelhut, James Remley, and Brien Williams – volunteered and responded to help protect homes threatened by a wild fire raging near Bailey.

June 15, 2000 – Kaiser-Hill earned a top recycling award from Colorado Recycles for the "innovative and comprehensive recycling programs" the company had implemented. The award was presented to K-H Vice President for Environmental Systems & Stewardship Dave Shelton at the 2000 Summit for Recycling held at Mt. Vernon Country Club.

NEWS RELEASE: June 16, 2000 – Rocky Flats Meets Shipping Milestone Ahead of Schedule – The site shipped 6,055 cubic meters of low-level radioactive waste off site since October 1, 1999, surpassing an important milestone under the RFCA four months ahead of schedule.

EOC ACTIVATION: June 21, 2000 – READY-2000, the annual emergency preparedness exercise at Rocky Flats, was successfully conducted.

June 29, 2000 – The Rocky Flats Cleanup Agreement Stakeholder Focus Group met for the first time and laid out an agenda for the next several months. The new group was formed to give citizens a chance to influence environmental restoration decisions at the site.

NEWS RELEASE: July 6, 2000 – Rocky Flats Achieves Early MAA Closure in B776/777 – Workers at the site have safely removed nuclear and classified materials from B776/777, enabling them to accelerate cleanup efforts in the former weapons fabrication facility.

July 8, 2000 – Local newspapers reported that it would take at least \$4.4 billion and six more years to clean up Rocky Flats, according to an 11,000-page Closure Project Baseline document released on CD-ROM.

EOC ACTIVATION: July 10, 2000 – The Emergency Operations Center was activated in response to a brush fire in the southeast section of the Buffer Zone. The fire consumed 40-60 acres and was caused when lightning struck a telephone pole, sparking a small brush fire. Arvada and North Metro fire departments supported the site fire department in extinguishing the blaze.

NEWS RELEASE: July 20, 2000 – First Major Deactivation Project in Building 371 Nets 2,500 Grams of Plutonium – Workers at the site completed the first major deactivation activity in B371 by safely removing approximately 2,500 grams of plutonium holdup and dismantling 10 electro-refining furnaces.

August 7, 2000 – The National Academy of Sciences issued a report warning of continuing problems at the sites where bombs were built. It said: "At many sites, radiological and non-radiological hazardous wastes will remain, posing risks to humans and the environment for tens or even hundreds of thousands of years. Complete elimination of unacceptable risks to humans and the environment will not be achieved, now or in the foreseeable future."

August 4, 2000 – The 2nd Annual Kaiser-Hill Golf Tournament, held at the Indian Peaks Golf Course in Lafayette, raised more than \$14,500 for the Rocky Flats Foundation and local community charities. Earlier in the year, the Foundation had distributed more than \$3,000 to the Los Alamos Fire Relief Fund in Los Alamos, N.M., and \$5,000 to be shared by 10 local volunteer fire departments to help defray the costs of fighting recent Colorado wildfires.

August 14, 2000 – The third and final load of polychlorinated biphenyl (PCB)-contaminated oil from two large tanks in B774 was shipped to an incinerator facility in Oak Ridge, Tenn.

August 26, 2000 – Family Day was held at Rocky Flats, drawing approximately 2,500 people.

August 31, 2000 – At a news conference held at Rocky Flats, two Colorado lawmakers – U.S. Sen. Wayne Allard, R-Colo., and U.S. Rep. Mark Udall, D-Colo., announced a joint effort to transform Rocky Flats into an urban wildlife refuge. The proposed bill in Congress called for 6,400 acres of the site to become a refuge after cleanup and closure is complete. At that time, the site would be transferred to the Interior Department and maintained and protected as a refuge.

Safe Sites of Colorado's Mitch Stockdale, lead D&D engineer for B771, received a check for \$10,560 for his idea to streamline sampling the water contained within water walls in one of the rooms undergoing D&D. The project saved more than \$250,000 for that room alone.

Rocky Flats workers who have become ill as a result of their exposure to radiation or beryllium will be eligible to receive \$150,000 each, and occupational-related medical benefits as part of a bill approved the first week in October. The provisions were included in H.R. 4205, the Fiscal Year 2001 Defense Authorization Act. It passed the House by a 382-31 vote on Oct. 11 and passed the Senate by a 90-3 vote the following day.

NEWS RELEASE: October 16, 2000 – Rocky Flats Workers Surpass RFCA Milestone – Hard work, dedication and innovation helped Rocky Flats workers in Buildings 771 and 776/777 complete 23 Decommissioning and Decontamination sets, five more than the 18 the agreement called for by the Sept. 30 end of the fiscal year. D&D sets are specific work packages that range from the removal of individual tanks to the complete strip-out of a room.

In October, the 40-year-old rails crossing the west access road were removed and replaced.

NEWS RELEASE: November 2, 2000 – DOE issues performance penalty aimed at work control safety – A \$250,000 performance penalty imposed by DOE/RFDO against Kaiser-Hill was issued to send a message that only the highest standards of safety would be accepted as the cleanup and closure of Rocky Flats proceeds.

The site used a new type of horizontal drilling technology to assess potentially contaminated soil under buildings. The new technology, called Environmental Measurement-While-Drilling (EMWD) – was developed by Sandia National Laboratories. It brought together new and existing technology to create an innovative system for detecting levels of contamination in soil.

A new, re-usable low-level waste shipping package joined the fleet of waste containers leaving the site. Called the "Nine Pack," the container provided the capability to ship low-level waste packaged in plywood boxes.

"Closed" banners were placed on Buildings 333 and 111 to show that cold closure of the facilities had been completed. That meant that all property, equipment, and hazards had been removed.

The 515/516 electrical substation was sold to H&H Transformer for surplus and the company removed it from the site using a 150-ton crane lifting the two 48,000 pound transformers near 115,000-volt electrical transmission lines.

Rocky Flats workers safely completed the processing or repackaging of more than 16 tons of a category of radioactive leftover called residue salts. The work, completed two months ahead of schedule, fulfilled part of an overall Defense Nuclear Facilities Safety Board milestone.

NEWS RELEASE: November 21, 2000 – Rocky Flats Waste Shipping Update – The site shipped more radioactive waste to both the Waste Isolation Pilot Plant in New Mexico and the Nevada Test Site waste repository than any other DOE site in the nation during fiscal year 2000.

Ten employees tested positive for plutonium contamination the last week in November, prompting a work stoppage in B771 while investigators tried to determine the cause and whether more people were exposed. Rocky Flats investigators were not sure of the plutonium level in the workers' bodies but said

they thought contamination occurred between the beginning of September and the end of October. A team of 11 people had been cutting up waste inside a containment tent in B771. All of the workers were wearing respirators inside the tent. Bioassay tests were ordered for the employees after officials discovered an air sampling instrument had not been calibrated for 30 days.

December 7, 2000 – President Clinton signed an Order authorizing payments to thousands of U.S. nuclear workers who got sick after being exposed to radiation as the U.S. built up its atomic arsenal during the Cold War era. The Order would help implement a law passed by Congress in October to compensate workers exposed to radiation in the building and testing of nuclear weapons.

Investigations ordered in response to last summer's intense fire season across the U.S., resulted in the DOE decision not to conduct prescribed burns at Rocky Flats during Spring 2001. Burn plans were put on hold until at least Fall 2001 while awaiting results of Federal studies of prescribed burns.

After 30 years of mission work, B707 began preparing for its new deactivation and decommissioning mission.

After final characterization and approval, four trailers – T750E, T903A, T331 and T771D – were demolished and the resulting debris scooped into seven roll-offs headed for off-site disposal.

2001

NEWS RELEASE: January 4, 2001 – Rocky Flats Steelworkers gain contract through site closure – The Rocky Flats United Steelworkers of America, Local 8031, and Kaiser-Hill signed an unprecedented agreement making the Steelworkers the "workforce of choice" through site closure in 2006. The unique partnering between Kaiser-Hill and the Steelworkers strengthened the ability of the site to achieve the safe, accelerated closure of the site. The new provisions were approved by nearly a 2-1 ratio in a vote on January 3.

On January 5, the DOE-RFFO sent a letter to Kaiser-Hill expressing concerns about safety at Rocky Flats. A letter co-signed by Barbara Mazurowski, DOE-RFFO, and Bob Card, K-H, was sent to RFETS workers on Jan. 9, reiterating commitment to the safety of the site, to safe operations, and to individual safety.

January 11, 2001 –Secretary of Energy Bill Richardson announced proposed amendments to the Energy Employees Occupational Illness Act of 2000 in Washington, D.C. He also made public for comment a list of facilities to be covered under the legislation, including beryllium vendors, Energy Department sites that used radioactive materials and facilities where atomic weapons workers may have been employed.

January 2001 – Investigation continued into why 10 of 11 members of a work team in B771 tested positive for plutonium uptakes in November 2000.

In January 2001, to kickoff the historical observance of 50 years in the history of Rocky Flats, employees were invited to create a logo design identifying our special place in the history of Rocky Flats and the Weapons Complex.

February 2001 – Nuclear operations slowly returned to normal in B707 following an operational pause imposed by 707 management following two criticality infractions that had occurred in December 2000.

February 2001 – An effort to turn Rocky Flats into a national wildlife refuge received a renewed push from Republican Sen. Wayne Allard and Democratic Rep. Mark Udall when they re-introduced their Rocky Flats Wildlife Refuge Act in Washington, D.C.

Challenger astronaut Mike Mullane was the keynote speaker at the February 2001 Safety Rodeo held in the B460 highbay area. The Safety Rodeo was an all-day affair attended by more than 600 employees from B707 in preparation for their transfer to D&D work.

A new process called cerium rinse was piloted in B371/374 in early 2001. The process uses cerium IV, a powerful oxidizer, and nitric acid to remove radioactive contamination from stainless steel surfaces.

March 7, 2001 – White House Announcement: Formal announcement of "intent to nominate" Kaiser-Hill President and CEO Robert G. Card for the position of undersecretary for the U.S. DOE.

March 14, 2001 – The 100th shipment of transuranic waste from the site arrived at DOE's Waste Isolation Pilot Plant in New Mexico. The shipment has left the site on March 13.

March 22, 2001 – President George W. Bush announced his intent to nominate Jessie Hill Roberson to be Assistant Secretary of Energy for Environmental Management.

Results of an investigation team chartered Dec. 13, 2000, to investigate the source of internal radiological exposures involving 11 personnel in B771 was announced. In summary, the investigation team concluded that the most likely cause of the positive bioassay results was exposure to low levels of airborne plutonium radioactivity from radiological work operations exacerbated by D&D operations.

March 26, 2001 – Ralph Peterson, Chairman of the Board of Kaiser-Hill, announced that Alan Parker had been appointed Executive Vice President and Chief Operating Officer of Kaiser-Hill.

March 28, 2001 – The site passed a major milestone when 27 10-gallon cans of nuclear sludges arrived at dock 18T – the last of hundreds of shipments completing the consolidation of all stored nuclear materials into B371.

In late March 2001, nearly a decade of work came to partial fruition when the DOE certified the "9975" container for use in shipment of plutonium metals. The certification meant that Rocky Flats had an approved container to ship most of the plutonium metal packaged in the Plutonium Stabilization and Packaging System (PuSPS) that would soon be operational in B371.

April 4, 2001 – A letter was sent to all Kaiser-Hill Employees announcing the Rule of 70 Change in Retirement Eligibility.

In April 2001, it was announced that the Department of Labor would open resource centers across the country to notify energy workers of available benefits under a new program for workers who have been exposed to radiation.

June 5, 2001 – DOE announced the confirmation of Robert G. Card as Under Secretary of Energy.

June 14, 2001 – The first can of unclassified plutonium metals was processed successfully, capping several years of design, installation and operational obstacles. The Plutonium Stabilization and Packaging System (PuSPS) will be used to package an estimated 1,500 cans of plutonium metals and oxides for interim storage at the Savannah River Site.

July 2001 – Kaiser-Hill was fined \$385,000 by the DOE for violating safety rules and procedures. The penalty followed months of investigations into safety problems at the site.

In July 2001, a state-of-the-art crate counter was delivered to its new home on a pad outside B664. The 72-ton counting equipment was assembled at a warehouse in Broomfield. The mobile passive-active crate counter would be used to characterize both low-level and TRU waste and was part of an ongoing effort to increase characterization capability to maximize waste shipments.

July 18, 2001 – Workers completed the processing and packaging of more than 7,000 pounds of a residue waste type known as sand, slag and crucibles (SS&C). This waste consists of pieces of old heating pots (crucibles), magnesium oxide sand, and calcium fluoride slag – all of which was contaminated with plutonium. After processing, the SS&C waste was packaged in robust pipe overpack

containers inside 55-gallon drums for eventual shipment to and disposal at the Waste Isolation Pilot Plant in Carlsbad, N.M.

July 18, 2001 – Energy Secretary Spencer Abraham swore-in Jessie Roberson as assistant secretary of energy for environmental management.

On July 19, 2001, DOE's Rocky Flats field Office and a team from Headquarters completed verification and validation of the new fence and alarm systems about B371. As a result, Kaiser-Hill received permission to reconfigure the Protected Area (PA). On July 20, PACS 1 and 3 buildings were closed and employees entered the former PA using the walkways alongside the PACS buildings.

July 23, 2001 – A resource center where nuclear weapons workers can go for help filing claims for compensation under the Energy Employees Occupational Illness Compensation Program Act opened in Westminster. The center, sponsored jointly by the U.S. Departments of Labor and Energy, was one of 10 opening throughout the country to help energy workers or their families file for compensation from the federal government.

August 3, 2001 – Saying the Energy Department has "renege" on plutonium disposal commitments to the state, South Carolina Gov. Jim Hodges moved to halt planned plutonium shipments to DOE's Savannah River Site until the DOE agrees to a legally enforceable long-term plan for removing the material.

August 4, 2001 – The third annual Kaiser-Hill Golf Tournament raised \$25,000 for the Rocky Flats Foundation and local community charities.

August 2001 – As the rest of Rocky Flats was being deactivated and dismantled piece-by-piece, there was a flurry of construction activity on the south side of the site. Construction crews were at work completing the cavernous interior of the new B440 shipping center. The new facility was located on Cactus Avenue between B850 and B460.

Workers in B881 spent many hours packing away legacy waste in new crates headed for off-site disposal. The 'salad bar' or B-box, really does resemble a salad bar – it is encased in plastic and serves the same general purpose as gloveboxes. It is used as a large-scale device for handling potentially contaminated materials from outside a contained environment.

August 28, 2001 – The 200th shipment of transuranic (TRU) waste from Rocky Flats arrived safely at the Waste Isolation Pilot Plant (WIPP). It was estimated that the site would send approximately 2,000 shipments of TRU waste to WIPP during the duration of the closure project.

Workers in B771 satisfied the Colorado Department of Health and Environment Dec. 31, 2001, milestone to drain and remove all mixed residue liquid waste and piping four months early. This completed all the requirements of the Mixed Residue Consent Order for B771. Draining and removal of all of the radioactive liquid systems included the removal of more than 2,000 liters of radioactive liquids and 31,000 feet of piping. Liquids drained from these systems included radioactively contaminated nitric acid, potassium hydroxide and hydrofluoric acid.

Due to the national tragedy on September 11, 2001, Family Day 2001, scheduled for Sept. 15, was postponed and site security measures were increased. The Rocky Flats Foundation began a fund drive to help the victims of the terrorist attacks. More than \$52,000 was raised through employee contributions and corporation donations.

September 19-20, 2001 – PACS 1 was demolished. That demolition, along with the demolition of PACS 3 and the removal of thousands of feet of razor wire-topped fencing, radically changed the way employees and material moved around the 700 Complex.

October 10, 2001 – A worker in B776/777 opened bottles of dangerous gases inside the building without following proper venting procedures. Five workers in the building were transported to the site medical clinic after complaining of nausea, dry throat, coughs and general malaise, while a total of 50 employees were subjected to blood tests to determine their level of exposure to the chemicals, which included 1-butene, ISO-butylene and 1,3-butadiene, all of which are chemical derivatives of butane.

November 6, 2001 – Building 707 was evacuated after eight workers doing cleanup work there experienced breathing problems. Seven of the workers were examined and released from the site medical facility. The eighth worker, who had an allergic reaction, was treated with antihistamines and released from Boulder Community Hospital. Tests showed that the workers were not exposed to radiation, and doctors suspected that some type of dust triggered the problems.

November 8, 2001 – The B371 fluorides team completed processing of the last plutonium fluorides in B371. The work was completed more than two months ahead of the projected completion date of Jan. 22, 2002. Completion of processing and packaging of plutonium fluorides came on the heels of two other residue successes in B371 – operators completed processing all sand, slag and crucible residues in July 2001, and had recently completed packaging all LECO crucibles.

November 10, 2001 – Three 45-ft.-tall guard towers that once marked the boundary corners of the Perimeter Security Zone were demolished using explosives. The fourth tower remained standing as part of the protected area around B371. Traditional demolition methods would have taken six weeks, while the use of explosives required only four days. The Saturday explosions were also used as a test for possibly taking down a 176-ft.-tall exhaust stack in 2003.

November 16, 2001 – Workers began demolishing Building 111, one of the first administrative buildings built at the site. The building demolition was a pilot demolition project saving more than \$1 million in the safe cleanup and closure of Rocky Flats.

December 13, 2001 – The first transuranic waste shipment loaded in one of two new loading bays in B440 headed to the Waste Isolation Pilot Plant for disposal. The new loading facility was declared operational Nov. 30 and will more than double Rocky Flats' shipments to WIPP, enabling the site to continue to move waste off site and to reach the 2006 closure goal.

On Dec. 17, 2001, Sen. Wayne Allard and Rep. Mark Udall held a press conference in B060 announcing the passage of legislation to turn Rocky Flats into a wildlife refuge following the completion of the Rocky Flats Closure Project. The proposal, co-sponsored by Allard and Udall, was included in a defense authorization bill.

December 24, 2001 – Workers completed draining and processing all radioactive liquids from B771, significantly reducing risk to cleanup workers and keeping the site on pace of a 2006 closure. The action was completed ahead of schedule and satisfied two commitments made to the Defense Nuclear Facilities Safety Board. A total of 38 different liquid systems were drained in B771 during the last three years – the most systems safely drained in a nuclear facility in the U.S.

In December, the site's Central Computing Facility and Network Operations Center was relocated from Rocky Flats to the Denver Federal Center.

2002

January 23, 2002 – DOE and South Carolina officials reached an agreement on the processing of weapons-grade plutonium, a move that should break an impasse threatening to delay final cleanup at Rocky Flats.

Officials at Rocky Flats announced on January 24 that nearly 80 percent of the highly enriched uranium (HEU) had been removed safely from the Denver metropolitan area since 1996, as part of the site's effort to accelerate cleanup and closure.

By the end of January, vehicle search stations were in operation on the east and west sides of the site. Searching vehicles had become a common occurrence since the events of Sept. 11, 2001.

On February 27, it was announced that as part of the cleanup process at the site, Kaiser-Hill would be moving about 400 employees to an office building near Interlocken business park. Kaiser-Hill leased a 95,000-square-foot building in Mountain View Corporate Center, located south of Interlocken on Colo. 128.

The B371 Residue Project repackaged the final drum of ash residues on Feb. 14. This event signified the completion of the Ash Project that had begun in B707 in September 1998. Ash was the fourth residue waste stream that had been completed, joining the previously completed salt; sand, slag and crucibles (SS&G); and fluorides.