

## Timeline for Rocky Flats in the Nuclear Era

Last modified, September 15, 2015

This timeline provides a factual chronology of significant events regarding Rocky Flats in the context of the nuclear era from its beginning through completion of the cleanup of the Rocky Flats site and transfer of a portion of the site from the U.S. Department of Energy to the U.S. Fish & Wildlife Service.

Acronyms used in this timeline are AEC (Atomic Energy Commission), DOE (U.S. Department of Energy), EPA (U.S. Environmental Protection Agency), CDPHE (Colorado Department of Public Health and Environment), FBI (Federal Bureau of Investigation), and FWS (U.S. Fish and Wildlife Service).

Items specific to Rocky Flats are printed in standard type; items that refer to the larger context of nuclear weapons issues both in the U.S. and elsewhere **appear in boldface type**.

1938

1. **Otto Hahn and Lise Meitner in Berlin discover fission in uranium.**

1939

1. **August 2: Albert Einstein writes to President Franklin D. Roosevelt urging a program to explore the possibility of developing atomic weapons, given that Germany may already be engaged in such a program (see 1954) <http://hypertextbook.com/eworld/einstein.shtml>**
2. **Manhattan Project begins on a modest scale (see1941)**

1941

1. **February 23: Discovery and isolation of plutonium by the Glenn T. Seaborg team at the University of California, Berkeley; this group included Bill Kennedy who later worked at Rocky Flats <http://www.britannica.com/EBchecked/topic/530808/Glenn-T-Seaborg>**
2. **October 9: British MAUD (Military Application of Uranium Detonation) Report affirms that an atomic bomb can be built, impels Roosevelt to proceed with enlarged Manhattan Project <http://www.atomicarchive.com/Docs/Begin/MAUD.shtml>**

1942

1. **December 2: First self-sustaining nuclear chain reaction achieved by Enrico Fermi and colleagues at the University of Chicago <http://www.atomicarchive.com/History/mp/chronology.shtml>**
2. **September: General Leslie Groves, Director of the Manhattan Project, acquires the Oak Ridge site in Tennessee, where highly enriched**

uranium will be produced <http://www.mphpa.org/classic/HISTORY/H-06b1.htm>

1943

1. **January 16:** Hanford site in Washington State selected for construction of reactors to produce plutonium  
<http://www.atomicarchive.com/History/mp/chronology.shtml>
2. **March:** Robert Oppenheimer and other Manhattan Project scientists begin arriving at Los Alamos where they will design and fabricate the first nuclear weapons

1944

1. **February 20:** A two-year effort to halt Germany, which had occupied Norway, from acquiring heavy water (deuterium oxide) for its nuclear bomb program from Norway's Vemork Heavy Water Plant succeeded with an attack by saboteurs and members of the Norwegian resistance  
<http://www.globalsecurity.org/wmd/ops/vemork.htm>

1945

1. **July 16:** Trinity, the first atomic bomb, an implosion plutonium device, exploded at White Sands Proving Ground near Alamogordo, NM
2. **August 6:** Little Boy, a gun-type uranium bomb, dropped on Hiroshima, Japan
3. **August 9:** Fat Man, an implosion plutonium bomb, dropped on Nagasaki, Japan <http://www.atomicarchive.com/History/mp/chronology.shtml>
4. **September 2:** Japan surrenders; World War II ends
5. **Federation of American Scientists** created by Manhattan Project scientists who seek international control of nuclear energy (see 1946)  
<http://www.fas.org/about/index.html>
6. **December:** *Bulletin of the Atomic Scientists* founded by Manhattan Project scientists in Chicago; becomes famous for its "Doomsday Clock" with hands approaching the midnight of nuclear catastrophe  
<http://www.thebulletin.org/content/about-us/purpose>

1946

1. **June 15:** Bernard Baruch, U.S. delegate to UN Atomic Energy Agency, presents a plan for control of nuclear energy that retains the U.S. monopoly and is thus rejected by the USSR, scuttling efforts for international control and guaranteeing a nuclear arms race  
<http://www.history.com/this-day-in-history/the-united-states-presents-the-baruch-plan>

1947

1. **January 1:** Atomic Energy Commission (AEC), created to provide civilian

control of U.S. nuclear activities, replaces Manhattan Project  
<http://www.u-s-history.com/pages/h1813.html>

1949

1. **August 29: first Soviet atomic bomb explosion**  
[http://www.wired.com/science/discoveries/news/2007/08/dayinte\\_ch\\_0829](http://www.wired.com/science/discoveries/news/2007/08/dayinte_ch_0829)

1950

1. **January 31: President Truman authorizes production of “so- called hydrogen or super bomb,” a decision that will lead to construction of a large nationwide complex of nuclear weapons production facilities**  
<http://rhapsodyinbooks.wordpress.com/2009/01/31/january-31-1950-%E2%80%93-president-truman-approves-development-of-the-h-bomb/>

1951

1. AEC’s highly secret Project Apple accepts the recommendation of its contractor, Austin Company, that it select Rocky Flats as the site for production of nuclear weapons cores; Austin’s wind readings, taken at Stapleton Airport in east Denver, misrepresent conditions at Rocky Flats, where strong winds blow toward populated areas (Len Ackland, *Making a Real Killing: Rocky Flats and the Nuclear West*, Albuquerque: University of New Mexico Press, 1999, p. 61)
2. Dow Chemical selected to operate Rocky Flats Plant, does so until 1975 (Buffer, *Rocky Flats History*)
3. March 23 :*Denver Post* headlines “There’s Good News Today, U.S. to build \$45 Million A-Plant Near Denver”
4. Construction begins on the Rocky Flats Plant (Buffer,*RockyFlats History*)

1952

1. Testing and cold (non-radioactive )startup of operations at Rocky Flats (Ken Freiberg)
2. **October 3: Britain explodes its first nuclear bomb**  
<http://www.atomicarchive.com/History/coldwar/page10.shtml>

1953

1. September: Hourly employees vote in the Denver Metal Trades Union (Ken Freiberg)

1954

1. All operations with enriched uranium, plutonium and auxiliary materials depleted uranium and beryllium are in progress (Burt Kelchner)

1956

1. Building 993 began rolling and forming thin shapes from enriched uranium, depleted uranium and beryllium
2. **Major improvements in doseimetry improve ability of Health Physics to**

**read and measure ionizing radiation, including neutron radiation**

1957

1. June: A minor chemical explosion in Bldg. 771 results in contamination to two individuals (*Ken Freiberg*)
2. September 11: Fire in Bldg. 771 results in largest short-term release of plutonium to the environment in the plant's history  
<http://www.hss.doe.gov/healthsafety/ohre/new/findingaids/epidemiology/rockyfire/intro.html> and *Summary of Findings: Historical Public Exposure Studies on Rocky Flats*, CDPHE, August 1999
3. **September 29: Cataclysmic explosion at the Soviet's Chelyabinsk 40 facility (now called Mayak) on eastern side of Urals near Khystym releases a massive quantity of radioactive material, requiring evacuation of a very large area**  
<http://nuclearhistory.wordpress.com/2011/03/28/kyshtym-stored-waste-explosion-1957/>
4. **October 8: Uranium fire erupts in the core of a reactor at Windscale (now called Sellafield) in the northwest of England**  
<http://news.bbc.co.uk/2/hi/science/nature/7030536.stm>
5. *These three disasters (#2, 3 & 4 above) occur within less than a month at facilities in the only countries then producing nuclear weapons; all three governments withhold information*  
<http://www.rockyflatsnuclearguardianship.org/leroy-moores-blog/papers-by-leroy-moore-phd-2/> see "1957: Fateful Year"
6. Plutonium foundry and metal operations begin in Bldg. 776, plutonium assembly operations in Bldg. 777 (*Ken Freiberg*)
7. **The Price-Anderson Act is enacted; renewed several times since, it indemnifies DOE contractors and other nuclear industry companies from liability claims that arise from their operations**  
[http://en.wikipedia.org/wiki/Price%E2%80%93Anderson\\_Nuclear\\_Industries\\_Indemnity\\_Act](http://en.wikipedia.org/wiki/Price%E2%80%93Anderson_Nuclear_Industries_Indemnity_Act)

1958

1. **U.S. standard for permissible exposure for nuclear workers is reduced from 12 to 5 rem per year; in 1965 the standard at Rocky Flats will be reduced to 1 rem per year (see 1966); elsewhere in the DOE complex the 5 rem per year standard remains unchanged (DOE, *Closing the Circle on the Splitting of the Atom*, January 1995, p. 38)**

1959

1. Discovery that drums of plutonium-contaminated liquid waste stored outdoors in the 903 area at Rocky Flats are leaking plutonium particles into the environment (see 1967 & 1969) <http://www.cdphe.state.co.us/rf/903area.htm>

1960

**1. February 13: France explodes its first nuclear weapon**

<http://www.youtube.com/watch?v=mcImJ4ckfOk>

1962

1. August 28: 1,500 Rocky Flats production workers affiliated with United Mineworkers begin 28-day strike for workplace safety (Ackland, *Making a Real Killing*, p. 134)

1963

1. **Limited Test Ban Treaty bans testing of nuclear weapons in the atmosphere, in outer space and under water, signed by USA, USSR and Britain, but not France**  
<http://www.state.gov/www/global/arms/treaties/lbtt1.html>
2. Plutonium recovery facilities in Bldg .771 are modified to meet AEC requirements for increased production, work completed in 1965

1964

1. Bldg. 881 enriched uranium chemical operations phased out and transferred to Oak Ridge; 881 is used hereafter for producing stainless steel parts (Ackland, *Making a Real Killing*, p. 144)
2. Enriched uranium processing moved from Rocky Flats to OakRidge (Buffer, *Rocky Flats History*)
3. October: Hourly workers at Rocky Flats join the United Mine Workers of America, emphasize safety on the job (Ackland, *Making a Real Killing*, p. 170)
4. **October 16: People's Republic of China explodes first nuclear weapon**  
<http://www.china.org.cn/english/congress/228244.htm>

1966

1. **July 4: Freedom of Information Act (FOIA) makes it possible for citizens to request federal government information previously not available**  
[http://en.wikipedia.org/wiki/Freedom\\_of\\_Information\\_Act\\_%28United\\_States%29](http://en.wikipedia.org/wiki/Freedom_of_Information_Act_%28United_States%29)
2. Initiation of two year project of major design changes in shielding to protect Rocky Flats workers from radiation in keeping with new 1 rem per year exposure standard that takes effect in late 1960s (see 1958)

1967

1. Plutonium windblown from leaking waste drums in the 903 area seen as principal source of contamination of nearby off-site areas (see 1959)  
<http://www.cdphe.state.co.us/rf/903area.htm>

1968

1. All drums containing contaminated solvents and much soil removed from 903 area and shipped offsite to the Idaho National Engineering Lab (Ken Freiberg)

1969

1. 903 Pad paved to impede further wind distribution of plutonium (see 1959, 1967) <http://www.cdphe.state.co.us/rf/903area.htm>
2. May 11: Mother's Day fire in Bldg. 776-777, most costly industrial fire to date in U.S. history; heroic efforts of Rocky Flats firefighters and workers prevent breach of the roof <http://www.cdphe.state.co.us/rf/1969fire.htm>
3. Bldg. 707 goes on line to do final fabrication and assembly of plutonium components, replacing most operations in Bldgs. 776-777 (Ken Freiberg)
4. August 6: Small demonstration at the Rocky Flats West Gate, perhaps the first organized protest at the plant (LeRoy Moore et al., *Citizen's Guide to Rocky Flats*, Rocky Mountain Peace Center, 1992, p. 52)

1970

1. **January 1: National Environmental Policy Act takes effect, includes creation of the U.S. Environmental Protection Agency (EPA)** <http://ceq.hss.doe.gov/>
2. February: Independent scientists Edward A. Martell of National Center for Atmospheric Research (NCAR) and S. E. Poet report to Rocky Flats and Colorado Health Department officials and later to the public finding elevated levels of plutonium in off-site soil at several locations in sampling they did in response to the 1969 fire (Martell, "Plutonium contamination in the Denver area," Press Release of the Colorado Committee for Environmental Information, Boulder, Colorado, Feb. 24, 1970)
3. AEC and Dow officials counter Martell by revealing for the first time major releases of plutonium from the 1957 fire and the 903 Pad area, revelations that mark a turning point regarding Rocky Flats in terms of public awareness and citizen involvement as well as monitoring by the Colorado Department of Health (see preceding reference)
4. New foundry and storage operations begin in Bldg. 707 to replace facilities lost in the 1969 Bldg. 776-777 fire (Ken Freiberg)
5. Bldg. 776, with cleanup after the 1969 fire completed, used for storage of sealed waste containers (Ken Freiberg)
6. Members of the Boulder Workshop on Nonviolence hike to Rocky Flats (Buffer, *Rocky Flats History*)
7. June 28-October 24: United Mines Workers at Rocky Flats strike for safer workplace conditions (Buffer, *Rocky Flats History*)
8. **Nuclear Non-Proliferation Treaty takes effect, with 43 countries signed on; it now has more signatories than any other nuclear weapons treaty** <http://www.un.org/en/conf/npt/2005/npttreaty.html>
9. Design prepared for greatly modernized new Bldg. 371/374, a plutonium recovery and waste treatment facility, to replace Bldg. 771/774 to provide better seismic, tornado, airplane crash or terrorist attack protection (Ken Freiberg)

1972

1. **May 26: Richard Nixon and Leonid Brezhnev sign the Anti-Ballistic Missile Treaty (see 2002)** <http://www.fas.org/nuke/control/abmt/>
2. Unionized workers at Rocky Flats leave the United Mine Workers to join United Steelworkers (Ackland, *Making a Real Killing*, p. 146)

1973

1. Tritium is discovered in Walnut Creek and the Great Western Reservoir, drinking water source for Broomfield <http://www.cdphe.state.co.us/rf/bluesumm.htm>
2. March 21: Colorado is the first state to enact a standard for plutonium in off-site soil, replacing a more stringent interim standard it had adopted on January 24 ("Public notice of plutonium contamination in the area of the Dow Chemical Rocky Flats Plant," Signed January 24, 1973, R. L. Cleere, Executive Director, Colorado Department of Health; "Amendment to the State of Colorado Rules and Regulations Pertaining to Radiation Control, Subpart RH 4.21.1," Adopted Colorado State Board of Health March 21, 1973)

1974

1. Rocky Flats site increased in size from 2,000 to 6,550 acres by addition of 4,550 acre buffer zone (Ackland, *Making a Real Killing*, p. 175)
2. **May 18: India explodes its first nuclear weapon** <http://www.brahmand.com/childrenscorner/firstintheworld.php?entrant=2&imgid=32>
3. **October 11: Atomic Energy Commission (AEC) is split into two new agencies, the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC); ERDA manages the weapons program** <http://www.answers.com/topic/energy-research-and-development-administration>
4. American Friends Service Committee Denver office hires two individuals to focus on Rocky Flats, first paid resistance organizers (Ackland, *Making a Real Killing*, p. 170)
5. Activists make Rocky Flats an election issue by asking candidates to have bags of soil collected from off-site areas analyzed for plutonium (Ackland, *Making a Real Killing*, p. 170)
6. Rocky Flats Action Group, an umbrella organization for the rapidly growing resistance movement, is created (Ackland, *Making a Real Killing*, p. 170)
7. Newly elected Governor Dick Lamm and U.S. Representative Tim Wirth create the Lamm-Wirth Task Force to study Rocky Flats (see October 1, 1975) (Ackland, *Making a Real Killing*, p. 177)
8. **Strategic Arms Limitation Treaty (SALT I) signed by President Gerald Ford and Premier Leonid Brezhnev** <http://www.nationalcoldwarexhibition.org/learn/detente/salt-1.cfm>

1975

1. Major upgrades for production and safety are begun in Bldgs. 771 and 707; they

will continue until halt of production in 1989

2. July: Rockwell International replaces Dow Chemical as operator of Rocky Flats Plant, will continue through 1989 (Buffer, *Rocky Flats History*)
3. Rancher Marcus Church sues Rocky Flats for contaminating his land (see 1984) (Ackland, *Making a Real Killing*, p. 189-190)
4. Jefferson County Health Dept. Director Carl Johnson and colleagues from U.S. Geological Survey (USGS) find measurable concentrations of plutonium in respirable dust in the area of a planned residential development, on the basis of which Jefferson County Commissioners veto the residential development (for detailed discussion and documentation, see Moore, "Democracy & Public Health at Rocky Flats," pp. 96-97, at [http://media.wix.com/ugd/cff93e\\_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf](http://media.wix.com/ugd/cff93e_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf))
5. October 1: *Lamm-Wirth Task Force : Final Report* calls for creation of a permanent public monitoring committee and recommends that Congress and the president consider phasing out nuclear weapons production at Rocky Flats and conversion of the facility to "less hazardous" work  
October: Carl Johnson, MD, Director of the Jefferson County Health Dept., proposes that for purposes of assessing health risk of plutonium in off-site areas the State adopt the method of sampling respirable dust rather than whole soil; the State seeks advice of Karl Morgan of Oak Ridge Lab but rejects it when he supports Johnson (for detailed discussion and documentation, see Moore "Democracy & Public Health at Rocky Flats" at [http://media.wix.com/ugd/cff93e\\_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf](http://media.wix.com/ugd/cff93e_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf))
6. Activists take "Scooter," rancher Lloyd Mixon's deformed pig, to public meetings; people were concerned about deformed animals (Ackland, *Making a Real Killing*, p. 183)

1976

1. **July: An article in *Scientific American* by George A. Cowan of the Los Alamos Lab, explains that about 2 billion years ago plutonium was produced in "a natural fission reactor" in Gabon**
2. First hiring of women for the production area at Rocky Flats

1977

1. **October 1: Energy Research and Development Administration (ERDA) becomes the Department of Energy (DOE)**  
[http://www.ch.doe.gov/html/site\\_info/history.htm](http://www.ch.doe.gov/html/site_info/history.htm)
2. Publication of *Local Hazard, Global Threat: Rocky Flats Nuclear Weapons Plant* (Denver: Rocky Flats Action Group), the first citizen's handbook with information about Rocky Flats

1978

1. April 29: About 3,500 people assemble at Rocky Flats West Gate to protest the making of nuclear weapons at the plant (Buffer, *Rocky Flats History*)
2. April 30: Overnight symbolic blockade of the railroad tracks leading into the plant

becomes a real blockade as a small group decides to stay on the tracks, calling themselves the Rocky Flats Truth Force and beginning “a year of disobedience” in which those arrested are quickly replaced by others; arrestees include Daniel Ellsberg of Pentagon Papers fame and poet Allen Ginsberg, who wrote “Plutonian Ode” from the tracks (Ackland, *Making a Real Killing*, pp. 186-187)

1979

1. March 1: U.S. Dept. of Housing and Urban Development requires parties seeking federal mortgage insurance on property they purchase within 10 miles of Rocky Flats to sign the “Rocky Flats Advisory Notice” that informs them of plutonium contamination in the area and of the existence of an Emergency Response Plan; the Notice was eliminated soon after Ronald Reagan assumed the presidency in 1981 (for a verbatim copy of the notice, see *Citizen’s Guide to Rocky Flats*, p. 47)
2. March: Cold (non-nuclear) startup for Bldg. 374 waste treatment facility (see 1980, no. 2)
3. **March 28: Partial meltdown of a nuclear power reactor at Three Mile Island in Pennsylvania** <http://www.threemileisland.org/>
4. April 29: 10 to 12,000 rally in opposition to Rocky Flats; about 300 people are arrested for occupying the roads and railroad tracks (*Citizen’s Guide to Rocky Flats*, p. 52)
5. **June 18: Strategic Arms Limitation Treaty (SALT II) signed by President Jimmy Carter and Premier Leonid Brezhnev; though the treaty was never ratified by the U.S. Senate, both countries adhered to its limits** <http://www.state.gov/www/global/arms/treaties/salt2-1.html>
6. August 21: A pro-nuclear rally at Rocky Flats organized by the Citizens for Energy and Freedom attracts an estimated 16,000 people (Buffer, *Rocky Flats History*)

1980

1. Construction of Bldg. 371, the site’s largest plutonium processing building, is completed; intended to replace outmoded Bldg. 771, plutonium operations begin in 371 in June 1981 (Ackland, *Making a Real Killing*, p. 195) (see 1984, no. 1)
2. Bldg. 374 goes on line to handle and treat all liquid waste for Rocky Flats, fully operational until closure of the plant
3. March: Due to escalating production, beginning of increase of the workforce at Rocky Flats, with growth from 4,600 to a peak of about 8,600 in 1986 (ChemRisk graph, *Citizen’s Guide to Rocky Flats*, p. 49)
4. April 26: About 10,000 resisters rally at the northeast corner of the site (Buffer, *Rocky Flats History*)
5. April 1980: DOE produces *Final Environmental Impact Statement: Rocky Flats Plant Site* (DOE/EIS-0064)
6. **Nuclear Freeze Movement calls on U.S. and USSR to “adopt a mutual freeze on the testing, production and deployment of nuclear weapons” and delivery systems, a campaign that led to successful ballot initiatives**

**in several states and attracted international attention**

<http://www.culture-of-peace.info/apm/chapter6-15.html>

7. Sunday vigil sponsored by Denver Catholic Worker begins at Rocky Flats West Gate, continues every Sunday until 1992 (*Citizen's Guide to Rocky Flats*, p. 53)

1981

1. A high-security area is constructed around the Protected Zone, the portion of the site where plutonium processing occurs (see 2001)
2. May: Jefferson County Health Dept. Director Carl Johnson, MD, who by this time has produced a number of studies showing adverse health effects to populations in areas downwind of Rocky Flats, is dismissed (for discussion, see "Democracy & Public Health at Rocky Flats," pp. 82-83, at [http://media.wix.com/ugd/cff93e\\_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf](http://media.wix.com/ugd/cff93e_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf))
3. October: Johnson's best known study, showing a correspondence between cancer incidence and plutonium contamination in the Denver metro area, is published in Swedish journal *Ambio* (see 1987 Crump) (Johnson, "Cancer incidence in an area contaminated with radionuclides near a nuclear installation," *Ambio*, 1981, vol. 10, no. 4)

1982

1. June 9: An estimated 30,000 turn out for a nuclear disarmament rally at the State Capitol, with Jimmy Buffet, Judy Collins and John Denver (*Citizen's Guide to Rocky Flats*, p. 52)
2. June 12: In the largest demonstration in U.S. history, more than one million people rally in New York for nuclear disarmament <http://www.metafilter.com/92767/The-June-12-1982-March-and-Rally-for-Peace-and-Disarmament>
3. June: "Nuclear winter" could result from a nuclear exchange that produced smoke that would blot out the sun for an extended period, inducing widespread crop failure, according to an article by P. Crutzen and J. Birks (of U. of Colorado) in *Ambio*, the journal of the Swedish Academy of Sciences [http://www.eoearth.org/article/Nuclear\\_winter](http://www.eoearth.org/article/Nuclear_winter)
4. Sept. 7: Two nuns from Sisters of Loretto enter the Rocky Flats site and hoist a flag saying "Death Factory"; they serve 6-month prison sentences (*Citizen's Guide to Rocky Flats*, p. 53)
5. *Blue Ribbon Commission Report*, sponsored by Rep. Tim Wirth, says it would cost \$2 billion and take 10 to 15 years to relocate Rocky Flats (Buffer, *Rocky Flats History*)
6. November 2: A statewide ballot initiative to end production of nuclear weapons components at Rocky Flats and to establish a fund to study economic conversion for the facility loses, 64% against, 36% for (*Citizen's Guide to Rocky Flats*, p. 53)
7. Physicist Fritjof Capra of the University of California says plutonium must be isolated from the environment for half-a-million years (Capra, *Turning Point*, NY: Random House, 1982)
8. DOE turns over to the contractor, Rockwell International, all capital projects at Rocky Flats because of the company's proven ability to do this work under budget and ahead of schedule, the only time this has happened with a primary contractor at a DOE facility

1983

1. **March 23: President Reagan counters Nuclear Freeze by proposing Strategic Defense Initiative (“Star Wars,” see 1986)**  
<http://www.coldwar.org/articles/80s/SDI-StarWars.asp>
2. **May 3: U.S. Catholic bishops release Pastoral Letter calling for rejection of deterrence doctrine and abolition of nuclear weapons**  
<http://nuclearfiles.org/menu/key-issues/ethics/issues/religious/us-catholic-bishops-pastoral-letter.htm> abbreviated version; full text is available in pdf on line
3. A study by G. L. Voelz of the Los Alamos Lab of Rocky Flats workers exposed to plutonium finds numerous brain tumors but reports that the overall rate of cancer deaths among the workers is lower than the rate in the general U.S. population (see 1987) (Voelz, et al., “An update of epidemiologic studies of plutonium workers,” *Health Physics*, 1983, vol. 44, supplement)
3. **October 15: Encirclement of Rocky Flats draws about 17,000 people but fails to wholly surround the plant** <http://www.flickr.com/photos/michael-pastur/4953224211/>
4. **October: *Dark Circle*, an 82 minute documentary about Rocky Flats, premieres in Denver** [http://www.dvdbeaver.com/film2/dvdreviews32/dark\\_circle.htm](http://www.dvdbeaver.com/film2/dvdreviews32/dark_circle.htm)

1984

1. Plutonium processing in Bldg. 371, which began in 1981, ends because too much plutonium gets trapped in the piping and cannot be recovered; Bldg. 371 hereafter is used for storage (Ackland, *Making a Real Killing*, pp. 195-196) (see 1980.1).
2. Church lawsuit settled for \$9 million (see 1975) (Ackland, *Making a Real Killing*, pp. 200-201)
3. In the first-ever case in the U.S. where a court rules for a nuclear worker exposed on the job to radiation, attorney Bruce DeBoskey wins compensation for the widow of deceased Rocky Flats worker LeRoy Krumbach; DeBoskey argued several more such cases pro bono, won some, lost some (*Citizen’s Guide to Rocky Flats*, p. 21)
4. First cleanup activity at Rocky Flats begins at Hillside 881

1985

1. February: Rockwell begins public relations campaign.
2. Bldg. 460, for non-nuclear manufacture, goes into full operation. Because this facility was built under budget and ahead of schedule, DOE put Rockwell in charge of all capital and facilities projects, a first for the DOE weapons complex
3. March: Engineer John David Navarette blows the whistle on illegal work done in the Rocky Flats Future Systems Division or “Model Shop” (*Citizen’s Guide to Rocky Flats*, pp. 50-51)
4. July: Rocky Flats is certified to send transuranic (TRU) waste to the Waste Isolation Pilot Project (WIPP) under construction in New Mexico

5. August: Nine-day peace camp to commemorate 40<sup>th</sup> anniversary of Hiroshima and Nagasaki bombings occurs on land opposite West Gate (Buffer, *Rocky Flats History*)
6. Activist Alex Mayer plants a peace garden across the road from the Rocky Flats West Gate; destroyed often, it was repeatedly replanted (*Citizen's Guide to Rocky Flats*, p. 53)
7. Bldg. 460, for non-nuclear manufacture, goes into full operation; because this facility was built under budget and ahead of schedule, DOE put Rockwell in charge of all capital and facilities projects, a first for the DOE weapons complex
- 8.
9. August 28 :Colorado Department of Health issues a permit to Rockwell to operate the Bldg. 771 incinerator to burn up to 40 lbs./hr. of plutonium-contaminated material (CDH Air Pollution Control Division, Permit No. 12J932 [C-12.932]). Rocky Flats, however, does not have a RCRA (Resource Conservation and Recovery Act) permit to incinerate mixed (radioactive and hazardous) waste; the plant will later be investigated by the FBI for alleged illegal incineration of mixed waste (see June 6, 1989)

1986

1. March: DOE rents space in Arvada to accommodate overflow in number of employees at Rocky Flats
2. **April 26: A reactor at the Chernobyl nuclear power plant near Kiev, Ukraine, in the USSR undergoes a chemical explosion that releases large quantities of radioactive material**  
<http://www.pbs.org/wgbh/pages/frontline/shows/reaction/readings/chernobyl.html>
3. July 30: Compliance Agreement between DOE, EPA and CDH for the first time allows regulation of mixed (radioactive/hazardous) waste on the site, while requiring DOE to begin characterization of the site and to develop feasibility studies and work plans for site remediation. (Buffer, *Rocky Flats History*)
4. **October 5: The London *Sunday Times* reveals that Israel has a nuclear arsenal, based on information provided by Mordechai Vanunu, an engineer who had worked in the Israeli bomb program**  
<http://www.youtube.com/watch?v=E-d5xxIewiA>
5. **October 11-12: Reagan and Gorbachev in Reykjavik, Iceland, fail to agree on getting rid of all nuclear weapons because Reagan insists on moving ahead with the Strategic Defense Initiative (see 1983)**  
<http://www.nti.org/analysis/articles/reykjavik-summit-legacy/>
6. **November: Congressional report on *American Nuclear Guinea Pigs: Three Decades of Radiation Experiments on U.S. Citizens* (see 1999)**  
<http://www.gwu.edu/~nsarchiv/radiation/dir/mstreet/commeet/meet1/brief1/br1n.txt>

1987

1. Rocky Flats Environmental Monitoring Council created (Buffer, *Rocky Flats History*)

2. A study of Rocky Flats workers done at the Los Alamos Lab by Gregg S. Wilkinson et al. finds excess cancers among workers exposed to very low doses of plutonium (as low as 5% of DOE's permissible level) by comparison to unexposed workers (Wilkinson et al, "Mortality among Plutonium and Other Radiation Workers at a Plutonium Weapons Facility," *American Journal of Epidemiology*, 1987, vol.125 1987)
3. K. S. Crump et al. corroborate Carl Johnson's cancer incidence results for off-site areas (see 1981) but conclude that Rocky Flats is not the cause (Crump, "Cancer incidence patterns in the Denver Metropolitan Area in relation to the Rocky Flats Plant." *American Journal of Epidemiology*, 1987, vol.126) (for discussion, see "Democracy & Public Health at Rocky Flats," pp. 83-85, at [http://media.wix.com/ugd/cff93e\\_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf](http://media.wix.com/ugd/cff93e_5d3b6b6a12204505a3bc0fd2e2f504eb.pdf))
4. August 9, Nagasaki Day: About 300 people are arrested for civil disobedience at the East Gate of Rocky Flats; DOE tells the small Sunday workforce to stay home, the only time work at the plant was halted by direct action of protesters (*Citizen's Guide to Rocky Flats*, p. 53)
5. **November: DOE establishes the Advisory Committee on Nuclear Facility Safety headed by John Ahearne, dissolved in November 1991 ([www.wmsym.org/archives/1991/V1/61.pdf](http://www.wmsym.org/archives/1991/V1/61.pdf))**
6. **December 8: Reagan and Gorbachev sign Intermediate-Range Nuclear Forces Treaty <http://www.state.gov/www/global/arms/treaties/inf1.html>**

1988

1. Discovery that Pondcrete waste is curing improperly and has the consistency of pudding (*Citizen's Guide to Rocky Flats*, pp. 35-36)
2. Gov. Cecil Andrus of Idaho refuses to allow any more transuranic (TRU) waste from Rocky Flats to be deposited at the Idaho National Engineering Lab, effectively ending 35 years of Rocky Flats TRU waste being sent to Idaho (Buffer, *Rocky Flats History*)
3. Rocky Mountain Peace Center publishes *Citizen's Guide to Rocky Flats*
4. **Congress establishes Defense Nuclear Facilities Safety Board; independent of DOE it reports to Congress and makes recommendations to DOE <http://www.dnfsb.gov/>**
5. Rocky Flats Cleanup Commission created with an EPA Technical Assistance Grant; group continues until 1993
6. October 8: Under orders from DOE, Rockwell halts all operations in Bldg. 771, including the incinerator (U. S. District Court, District of Colorado, Application and Affidavit for Search Warrant, Case No. 89- 730M, The Rocky Flats Plant, June 6, 1989, p. 74) (see 1985, # 6)

1989

1. June: Colo. Gov. Roy Romer sets a limit of 1,601 cubic yards for storage of transuranic waste at Rocky Flats, a move that threatens to halt production at the plant (see 1988 Andrus, and 1991 Sierra Club) (*Citizen's Guide to Rocky Flats*, pp.

33-34)

2. June 6: FBI and EPA raid the Rocky Flats Plant to collect evidence of alleged environmental law-breaking (U.S. District Court, District of Colorado, Application and Affidavit for Search Warrant, Case No. 89- 730M, The Rocky Flats Plant, June 6, 1989). One allegation in the search warrant is illegal operation of the Bldg. 771 incinerator.
3. June 28: Energy Secretary Admiral James Watkins and Gov. Roy Romer sign an Agreement in Principle that gives the State funds for more staff who will have increased access to monitor air and water at the site while also providing funding for the “Historical Public Exposure Studies at Rocky Flats” (see 1999) to identify potential offsite health impacts from toxic emissions to nearby communities. (*Citizen’s Guide to Rocky Flats*, pp. 62-63)
4. July 5: Because Gov. Romer rejected a request that by July 4 he call for a halt to production at Rocky Flats until it could be shown to be safe, LeRoy Moore begins a water-only “fast of solidarity with all victims of Rocky Flats”; the fast gets much attention and many participants; Moore fasts 24 days, then others pick up the fast until it ends on Nagasaki Day, August 9, with rallies at the Capitol and at Rocky Flats (*Citizen’s Guide to Rocky Flats*, p. 54)
5. September 21: *The New York Times* reports that Rockwell is suing for immunity, claiming it cannot carry out DOE orders without violating the law (Rockwell v. U.S.A., in the U.S. District Court for the District of Colorado, Civil Action No. 89-2607, September 21, 1989)
6. September 22: Energy Secretary James Watkins announces that Rockwell will be replaced by EG&G as prime Rocky Flats contractor at the year’s end, the first time DOE dismissed a contractor prior to the end of the contract (*Citizen’s Guide to Rocky Flats*, p. 63)
7. October: Rocky Flats is added to EPA’s Superfund National Priorities list of most contaminated sites in the U.S. (Buffer, *Rocky Flats History*)
8. October 5: DOE’s Tiger Team reports that, though the Rocky Flats Plant poses no imminent danger to the public, its radiation monitoring is poor, its waste management crude, and a strategy to meet federal environmental requirements is non-existent (DOE Special Assignment Environmental Team [“Tiger Team”], “Assessment of Environmental Conditions at Rocky Flats,” August 1989)
9. **November 9: Breaching of Berlin Wall allows citizens of East Germany to cross into West Berlin and West Berliners to cross into East Berlin, a result of Gorbachev’s relaxing of restrictions in the Soviet bloc**  
[http://news.bbc.co.uk/onthisday/hi/dates/stories/november/9/newsid\\_2515000/2515869.stm](http://news.bbc.co.uk/onthisday/hi/dates/stories/november/9/newsid_2515000/2515869.stm)
10. November 13: DOE announces that weapons production at Rocky Flats has been “temporarily” suspended; it never resumes (*Citizen’s Guide to Rocky Flats*, p. 64)

1990

1. January 1: EG&G replaces Rockwell as operator of the Rocky Flats Plant, holds this position through June 1995 (Buffer, *Rocky Flats History*)

2. January 10: Action begins to remove chemical contamination from Hillside 881
3. January 17: Energy Secretary James Watkins designates a special panel to study beryllium health effects at DOE nuclear weapons facilities. The first case of berylliosis, a potentially fatal chronic lung disease, was diagnosed at Rocky Flats in 1984; since that time 391 of 750 Rocky Flats workers exposed to beryllium on the job have contracted berylliosis <http://www.nytimes.com/1990/01/17/us/us-will-examine-a-metal-s-effects.html>
4. January 30: In response to the 1989 FBI raid of the Rocky Flats Plant a class action lawsuit (Cook v. Rockwell and Dow) is filed on behalf of property owners in offsite area contaminated with plutonium released from Rocky Flats (see 2005) <http://www.wsbcclaw.com/rocky.php>
5. April 12: Sierra Club wins lawsuit requiring that 600 cubic yards of plutonium residues at Rocky Flats be managed as transuranic waste rather than as recoverable product and that the Bldg. 771 incinerator must comply with the Resource Conservation and Recovery Act (RCRA), effectively shutting down the incinerator (see June 1989, #1 and 2) (Ackland, *Making a Real Killing*, p. 288)
6. Greenpeace and artist Craig Freeman attract national attention with “Operation Greenrun II,” a series of day-glo anti-nuclear billboards along Hwy. 93 adjacent to Rocky Flats, each with a distinct message <http://johncraigfreeman.wordpress.com/operation-greenrun-ii/>
7. October: Rocky Flats Conversion Task Force, a group commissioned by U. S. Senate candidate Josie Heath, issues a plan for achieving economic conversion of the Rocky Flats Plant
8. Congress declines to fund the Plutonium Recovery and Modification Project (renovation of Bldg. 371), making resumed production unlikely (Buffer, *Rocky Flats History*)
9. **National Academy of Sciences *Report on Biological Effects of Ionizing Radiation (BEIR V)* rejects the notion of a threshold of safe exposure and concludes that any exposure is potentially harmful (see 2006) <http://www.nap.edu/openbook.php?isbn=0309039959>**
10. **Activists formulate the “Nuclear Guardianship Ethic” as a guide for decision-making on management of radioactive materials; the first principle of Nuclear Guardianship: “Each generation shall endeavor to preserve the foundations of life and well-being for those who come after. To produce and abandon substances that damage following generations is morally unacceptable.” (see 2011) <http://www.joannamacy.net/nuclear-guardianship-ethic.html>**
11. **November 21: President George H. W. Bush declares that the Cold War has ended.**

1991

1. January: Interagency Agreement establishes a framework for cleanup at Rocky Flats by giving EPA and the Colorado Department of Health access to Rocky Flats data; it will later be superseded by the Rocky Flats Cleanup Agreement of

- 1996 (on line, see Topic Summary for the Rocky Flats Cleanup Agreement)
2. Energy Secretary Watkins announces transfer of non-nuclear stainless steel and beryllium activities at Rocky Flats to Kansas City (Buffer, *Rocky Flats History*)
  3. Rocky Flats Local Impacts Initiative is created to minimize adverse economic impact of Rocky Flats closure and to provide education, training and business assistance for affected workers (Buffer, *Rocky Flats History*)
  4. **July 31: President George H. W. Bush and Premier Mikhail Gorbachev sign Strategic Arms Reduction Treaty (START 1), reducing the strategic nuclear weapons stockpile of each country to 6,000; the treaty takes force in December 1994**  
<http://www.fas.org/nuke/control/start1/index.html>
  5. **December 25: As the final culmination of a series of events, Gorbachev resigns as President of the Soviet Union and the USSR is officially dissolved**  
<http://www.soviethistory.org/index.php?page=subject&SubjectID=1991end&Year=1991>

1992

1. January 24: Special Grand Jury 89-2 that spent two-and-a-half years reviewing evidence in the Rockwell case refuses to be dismissed until it writes a report that refers to activities at Rocky Flats as “an ongoing criminal enterprise” and calls for indictment of DOE and Rockwell officials  
[http://www.constitution.org/jury/gj/rocky\\_flats/rocky-flats-grand-jury-report.htm](http://www.constitution.org/jury/gj/rocky_flats/rocky-flats-grand-jury-report.htm)
2. January 28: President George H. W. Bush’s State of the Union announcement that warheads for submarine-based missiles will no longer be produced signifies the end of production at Rocky Flats  
<http://stateoftheunionaddress.org/category/george-hw-bush>
3. February 19: The Justice Department issues a 123-page report refuting charges made by the Special Grand Jury 89-2 report and asserts that no threat was found to members of the public (Colorado Federal District Court, “Report of the Special Grand Jury 89-2”)
4. March 26: In out-of-court settlement of the case brought against Rockwell after the 1989 FBI raid, major charges are dropped and Rockwell pleads guilty to lesser environmental violations and is fined \$18.5 million; court seals evidence reviewed by the grand jury (see 2004) (*USA vs. Rockwell International*, Case # 92-CR-107, U.S. District Court, Denver, CO)
5. May: Rocky Mountain Peace Center publishes greatly expanded *Citizen’s Guide to Rocky Flats*
6. An estimated 62 pounds of plutonium lodged in ductwork at Rocky Flats is seen as a criticality danger; previous estimates ranged from 10 to as much as 145 pounds (Sciencetech, *An Assessment of Criticality Safety*, July-Sept. 1989, SCI:-DOE-202-90; and Sciencetech, *A Review of EG&G’s Response to Sciencetech’s September 1989 Report*, June 6, 1990, SCI-DOE-202-90); for more detail,

*Citizen's Guide to Rocky Flats*, pp. 39-44)

7. September 17-18: U.S. Rep. Howard Wolpe of Michigan convenes Congressional hearings on *Environmental Crimes at the Rocky Flats Nuclear Weapons Facility*, proceedings published in two volumes (more than 1,300 pages )
8. September 30: A portion of the Rocky Flats Grand Jury Report that had been sealed by the court is leaked to and published by *Westword*  
<http://www.ringnebula.com/project-censored/1994/1994-story12.htm>
9. November 19: *New York Times* reports that members of the Rocky Flats Grand Jury are asking newly elected President Bill Clinton to investigate the Justice Department's handling of the Rockwell case  
<http://www.nytimes.com/1992/11/19/us/grand-jury-seeks-inquiry-on-weapons-plant-case.html?pagewanted=all&src=pm>

1993

1. Energy Secretary Watkins announces an end to the nuclearweapons production mission at Rocky Flats (Buffer, *Rocky Flats History*)
2. Rocky Flats Citizens Advisory Board created to advise DOE on issues related to cleanup of the site (Buffer, *Rocky Flats History*)
3. The Rocky Flats Local Impacts Initiative, DOE's site reuse organization, is created; it continues until creation of the Rocky Flats Coalition of Local Governments (see 1999)
4. October 25: Frontline produces "Secrets of a Bomb Factory," a one hour documentary on investigation of the Rocky Flats Plant for environmental crimes [www.tv.com/shows/frontline/secrets-of-a-bomb-factory-1296146/](http://www.tv.com/shows/frontline/secrets-of-a-bomb-factory-1296146/)
5. Bldg. 771 is renovated to process and prepare Special Nuclear Materials (plutonium and highly enriched uranium) for shipment off the site, activity that continues for 3 to 5 years

1994

1. June 27: Energy Secretary Hazel O'Leary reports that 1.191 metric tons (1.31 U.S. tons) of plutonium is lost from inventories at Rocky Flats (*Plutonium: The First 50 Years, United States Plutonium Production, Acquisition, and Utilization from 1944 through 1994*, U.S. Department of Energy, DOE-DP-0137, pp. 54-58)
2. New name: Rocky Flats Environmental Technology Site (Buffer, *Rocky Flats History*)
3. **Eileen Welsome wins the Pulitzer Prize for "The Plutonium Experiment," a series of articles in *The Albuquerque Journal* documenting government sponsored experiments injecting unwilling and unknowing individuals with plutonium; in 1999 she published *The Plutonium Files: America's Secret Medical Experiments in the Cold War* (see 1986)**

1995

1. March: According to DOE's *Estimating the Cold War Mortgage*, the Rocky Flats cleanup will take 70 years and cost \$36 billion (see 2005)
2. A DOE study lists five Rocky Flats buildings among the ten most dangerous buildings in the USA; Bldgs. 771 and 776 head the list (Buffer, *Rocky Flats History*)
3. May 17: Environmental Engineer M. Iggy Litaor, employed at Rocky Flats since 1990, with instruments set up in the field detects real-time rapid migration of plutonium in sub-surface soil (see 2003) (Litaor, "The Hydrogeochemistry of Pu in Soils of Rocky Flats, Colorado: Summary," Public Presentation, Denver, May 15, 1996)
4. July: Broadly representative DOE-funded Rocky Flats Future Site Use Working Group report calls for cleanup to average background level (0.04 picocuries of plutonium per gram of soil) when it becomes technologically and fiscally possible to do this in an environmentally responsible manner, a recommendation supported by Citizens Advisory Board, Local Impacts Initiative and others (*Rocky Flats Future Site Use Working Group: Future Use Recommendations*)
5. July 1: Kaiser-Hill replaces EG&G as prime contractor at Rocky Flats, its mission to clean up and close the Rocky Flats site
6. December 13: LeRoy Moore presents "Vitrification of Plutonium at Rocky Flats: The Argument for a Pilot Plant," at DOE's Plutonium Stabilization and Immobilization Workshop, Washington, DC (see 1997)  
<http://www.scribd.com/doc/86826349/Plutonium-Stabilization-and-Immobilization-Workshop-Dec-12-14-1995-US-DOE>

1996

1. July 19: DOE, EPA and CDPHE sign the legally binding Rocky Flats Cleanup Agreement (RFCA) (Buffer, *Rocky Flats History*). The Agreement is immediately controversial because the plutonium cleanup level set at 651 picocuries per gram is far higher than levels set for other sites; DOE Assistant Secretary Al Alm requires Rocky Flats to fund an independent study of the levels (see Feb. 2000). For levels at other sites, see Moore, "Rocky Flats: The Bait and Switch Cleanup," *The Bulletin of the Atomic Scientists*, Jan./Feb. 2005  
[http://media.wix.com/ugd/cff93e\\_7711d2b2a9d84f28ab1986706f1cda75.pdf](http://media.wix.com/ugd/cff93e_7711d2b2a9d84f28ab1986706f1cda75.pdf)
2. September: The Citizens' Environmental Sampling Committee, created as a subset of the "Historical Public Exposure Studies on Rocky Flats" (see 1989 and 1999), publishes the final report on its citizen-directed sampling program, "Soil and Sediment Study of Off-Site Areas Surrounding the Rocky Flats Nuclear Westminister (EPA Superfund Record of Decision, EPA/ROD/RO08-97/196, 1997, p. 7)
3. October: The Rocky Flats Beryllium Health Surveillance, initiated in 1991, reports that it had identified 27 cases of chronic beryllium disease (berylliosis) and another 74 cases of beryllium sensitization (susceptibility to the disease) among 4,268 individual Rocky Flats workers tested. Those with beryllium

sensitization will be retested from time to time.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1469682/>

4. November: To protect the water supply of the City of Westminster, DOE pays for the construction of the Woman Creek Reservoir on Woman Creek between the Rocky Flats site and Standley Lake, public water source for the City of July 19: DOE, EPA and Colorado Department of Public Health and Environment (CDPHE, formerly known as the Colorado Department of Health) sign the legally binding Final Rocky Flats Cleanup Agreement (RFCA), that shows how the cleanup will conform to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA [Superfund law]), the Resource Conservation and Recovery Act (RCRA), and the Colorado Hazardous Waste Act (CHWA) as well as the Clean Air Act and the Atomic Energy Act (Final Rocky Flats Cleanup Agreement) (see 2003 #2).
5. November 13: Boston University epidemiologist, Richard W. Clapp, finds excessive incidence of lung and bone cancers in areas near Rocky Flats. He concludes that “the most recent data are indicative of an ongoing health effect and support the need for surveillance of the incidence of cancer and other diseases on a continuing basis in the exposed communities.” (Report submitted for plaintiff’s counsel in Cook v. Dow Chemical and Rockwell International, United States District Court, District of Colorado)

1997

1. Energy Secretary Federico Pena announces that Rocky Flats will be the first major DOE facility to accomplish accelerated cleanup (Buffer, *Rocky Flats History*)
2. February 25: DOE cancels Environmental Impact Statement on the Rocky Flats cleanup (Ackland, *Making a Real Killing*, p. 240)
3. U.S. Rep. David Skaggs arranges for uniform annual funding for Rocky Flats to expedite the cleanup by providing assured funding each year for the duration of the cleanup (Buffer, *Rocky Flats History*)
4. December 28: A *Denver Post* op-ed by LeRoy Moore calls for a pilot project to vitrify (embed in glass) Rocky Flats surplus plutonium on site; U. S. Sen. Wayne Allard in a parallel op-ed rejects this proposal
5. Stemming from complaints that Great Western Reservoir, the drinking water source for the City of Broomfield, had been contaminated with radionuclides released from Rocky Flats, DOE pays for a new source; Great Western is no longer used for drinking water in Broomfield (EPA Superfund Record of Decision, EPA/ROD/RO08-97/196, 1997, p. 7)

1998

1. **May 28: Pakistan detonates its first nuclear weapon**<http://nuclearweaponarchive.org/Pakistan/PakTests.html>

1999

1. August 26: Final report of in-depth, two-phase “Historical Public Exposure Studies on Rocky Flats” conducted between 1990 and 1999 by ChemRisk (Phase I) and Radiological Assessments Corp. (Phase II) for the CDPHE, with oversight and quarterly public meetings by the Health Advisory Panel appointed by Gov. Romer. The report concluded that increased cancer risks from past Rocky Flats releases were low. <http://www.cdphe.state.co.us/rf/>
2. First shipment of transuranic (TRU) waste from Rocky Flats to Waste Isolation Pilot Plant near Carlsbad, NM (Buffer, *Rocky Flats History*)
3. Rocky Flats Coalition of Local Governments created (Buffer, *Rocky Flats History*)
4. Bldg. 779 becomes the first major plutonium facility in the U.S. to be demolished (Buffer, *Rocky Flats History*)

## 2000

1. January 24: DOE and Kaiser-Hill sign a contract for an accelerated cleanup to be completed by no later than December 15, 2006 [www.wmsym.org/archives/2002/Proceedings/24/328.p](http://www.wmsym.org/archives/2002/Proceedings/24/328.p) \_\_\_\_\_
2. **January 28: Energy Secretary Bill Richardson admits that the health of some workers in DOE’s weapons facilities has been damaged by on-the-job exposures, a first for a DOE official (see July 1, 2001)**  
<http://nuclearhistory.wordpress.com/2012/03/17/after-decades-of-denial-as-per-normal-for-nuke-industry/#comment-5284>
3. February: Independent study of plutonium cleanup levels for Rocky Flats, performed by Risk Assessment Corp., recommends a 95% reduction from the 651 picocuries per gram of soil level adopted in 1996 to 35 (see 1996 and June 2003) (*Final Report, Technical Project Summary: Radionuclide Soil Action Level Oversight Panel*, Risk Assessment Corp., February 2000)
4. July: For nuclear waste at Rocky Flats, especially plutonium, Rocky Mountain Peace Center proposes NORMS (Nearby or On-site Retrievable Monitored Storage)
5. To engage the public with the cleanup, DOE convenes the Rocky Flats Cleanup Agreement Focus Group; not an advisory body, its agenda is created not by itself but by DOE, EPA and CDPHE It meets for 3 to 4 hours twice monthly for 22 months (Buffer, *Rocky Flats History*)
6. **National Academy of Sciences report on *Long-term Institutional Management of U.S. Department of Energy Legacy Waste Sites* says “DOE’s preferred solutions – reliance on engineered barriers and institutional controls – are inherently failure prone” (see 2006)**  
[http://www.nap.edu/openbook.php?record\\_id=9949&page=3](http://www.nap.edu/openbook.php?record_id=9949&page=3) p. 4

## 2001

1. June: Rocky Flats Cleanup Agreement Focus Group members learn that the cleanup is

driven by cost because a deal made with Congress years earlier put a cap on what can be spent on the cleanup. See “Rocky Flats: The Bait and Switch Cleanup”  
[http://media.wix.com/ugd/cff93e\\_7711d2b2a9d84f28ab1986706f1cd\\_a75.pdf](http://media.wix.com/ugd/cff93e_7711d2b2a9d84f28ab1986706f1cd_a75.pdf)

2. **July 1: Energy Employees Occupational Illness Compensation Program Act, enacted in late 2000, takes effect; intended to provide benefits to eligible employees, the program is controversial because some workers have difficulty proving their ailments are workplace related (see 2005)**  
<http://www.dol.gov/compliance/laws/comp-energy.htm>
3. The high security “Protected Area” at Rocky Flats is reduced in size to enclose only Bldg. 371 (see 2003) (Buffer, *Rocky Flats History*)
4. December: The Rocky Flats National Wildlife Refuge Act of 2001, co- sponsored by U.S. Sen. Wayne Allard and U.S. Rep. Mark Udall, is enacted to create the refuge after completion of cleanup and closure of the site; Section 3181 of this act calls for creation of a Rocky Flats museum <http://www.govtrack.us/congress/bills/107/hr812>
5. December 11: In a report entitled “Setting Cleanup Levels to Protect Future Generations,” the Institute for Energy and Environmental Science recommends cleaning the Rocky Flats site to protect a farming family who may eventually live on the site and eat food grown there. Produced for the Rocky Mountain Peace and Justice Center, the report proposes a cleanup level for plutonium of 10 or less picocuries per gram of soil <http://www.ieer.org/reports/rocky/pr.html> (see 2003).

## 2002

1. September 17: The last of the “infinity rooms” (spaces off limits because radioactivity was too high to be measured with standard devices) is decontaminated (Ackland, *Making a Real Killing*, p. 241)
2. **June 13: U.S. unilaterally withdraws from the Anti-Ballistic Missile Treaty (see 1972)** [http://www.armscontrol.org/act/2002\\_07-08/abmjul\\_aug02](http://www.armscontrol.org/act/2002_07-08/abmjul_aug02)

## 2003

1. April 17: Completion of a collaborative study begun in Oct. 1993 by the University of Colorado Health Sciences Center, the CDPHE and the National Institute for Occupational Safety and Health of cancer incidence and mortality among 16,000 Rocky Flats workers exposed to radioactive materials and chemicals. The study shows that rates of some types of cancers (such as lung and brain) and anemia (leukemia) are higher than expected. The principal researcher, A. J. Ruttenber, says the study indicates current exposure standards are not sufficiently protective. <http://www.cdphe.state.co.us/hm/rf/rfhealth/rfpworkerstudy/index.htm> and Boulder Daily Camera, April 18, 2003
2. **June 1: Strategic Offensive Reductions Treaty (SORT), signed in May 2002 in Moscow, takes effect until replaced by New START in 2010**  
<http://www.armscontrol.org/documents/sort>
3. June 9: Final Rocky Flats Cleanup Agreement (RFCA) sets a cleanup level for plutonium in top 3 feet of soil of 50 picocuries per gram (50 pCi/g), for 3 to 6 feet

depth a level of 1,000 to 7,000 pCi/g, with no limit on the quantity of plutonium allowed below 6 feet (see July 1996 and Feb. 2000) (RFCA Attachment 5, *Action Levels and Standards Framework for Surface Water, Ground Water and Soils*)

4. June 9: 86% of commenting parties reject the Final Rocky Flats Cleanup Agreement. See [http://media.wix.com/ugd/cff93e\\_c74ed342de524330a178e1d6fb74f0f5.pdf](http://media.wix.com/ugd/cff93e_c74ed342de524330a178e1d6fb74f0f5.pdf)
5. July: Last weapons grade plutonium is removed from Rocky Flats (Buffer, *Rocky Flats History*)
6. The “Protected Area” around Bldg. 371 is eliminated, reducing need for high security costs at the site (Buffer, *Rocky Flats History*)

## 2004

1. March 1: *The Ambushed Grand Jury*, by Wes McKinley, foreman of the grand jury convened to investigate Rockwell after the 1989 FBI raid, and attorney Carol Balkany, alleges that the real purpose of the grand jury investigation was not to prosecute the principal crimes committed at Rocky Flats but to cover them up; the authors seek access to documents sealed by court order (see March 1992)
2. May 4: U.S. Rep. Mark Udall urges U.S. Attorney John Suthers to allow EPA and CDPHE to review the sealed documents (Ann Imse, “Flats papers unsealed,” *Rocky Mountain News*)
3. August 20: Ann Imse, in a *Rocky Mountain News* article entitled “Rocky Flats Brouhaha,” reports that *no* one from EPA or CDPHE ever asks to review the sealed documents. Critics wonder how they can certify the cleanup without knowing the contents of these documents
4. September 16: U.S. Fish & Wildlife Service, *Rocky Flats National Wildlife Refuge, Final Comprehensive Conservation Plan and Environmental Impact Statement* states that the refuge will be opened for public recreation.
5. September 16: 81% of commenting parties reject public access to the Rocky Flats National Wildlife Refuge, while only 11% explicitly favor access (for comments, see *Rocky Flats National Wildlife Refuge, Appendix H, Comments and Responses on the Draft Environmental Impact Statement*; for analysis of comments, see [http://media.wix.com/ugd/cff93e\\_a9cff9a4c30b4ac5bbfa27e93b91a9bf.pdf](http://media.wix.com/ugd/cff93e_a9cff9a4c30b4ac5bbfa27e93b91a9bf.pdf))

## 2005

1. October 13: Kaiser-Hill completes cleanup one year ahead of schedule for a total expenditure of about \$7 billion, receives \$651 million (see 2006, #3) <http://www2.prnewswire.co.uk/cgi/news/release?id=155994>
2. **Because many ailing nuclear workers are unable to get the medical compensation they believe they should get, the Alliance of Nuclear Worker Advocacy Groups is co-founded and staffed by Terrie Barrie, wife of an ailing former Rocky Flats worker (see 2001)** [http://blogs.rockymountainnews.com/rockytalklive/archives/2008/07/terrie\\_barrie\\_cofounder\\_of\\_the.html](http://blogs.rockymountainnews.com/rockytalklive/archives/2008/07/terrie_barrie_cofounder_of_the.html) interview with Terrie Barrie

2006

1. February: Rocky Flats Stewardship Council, consisting mainly of elected representatives of local governments, is formed to provide oversight of post-closure management of Rocky Flats <http://www.rockyflatssc.org/>
2. February 14: Jury in Cook v. Rockwell and Dow issues a \$554 million verdict against Dow and Rockwell in the class action lawsuit on behalf of owners of property contaminated with plutonium released from Rocky Flats (see 1990, 2010); case is appealed <http://www.bergermontague.com/cases?t=cook-v-rockwell-international-corporation&id=1494&altTemplate=legalcasetemplate>
3. September 28: EPA and CDPHE certify completion of the Rocky Flats cleanup to a level meant to protect a wildlife refuge worker; a key assumption is that plutonium left in the environment will remain “essentially immobile” (see 1995) <http://www.epa.gov/region8/superfund/co/rkyflatsplant/>
4. **October 9: North Korea, which had withdrawn from the Nuclear Non-Proliferation Treaty in 2003, explodes its first nuclear weapon** [http://en.wikipedia.org/wiki/North\\_Korea\\_and\\_weapons\\_of\\_mas  
s\\_destruction](http://en.wikipedia.org/wiki/North_Korea_and_weapons_of_mass_destruction)
5. **National Academy of Sciences report, *Health Risks from Exposure to Low Levels of Ionizing Radiation (BEIR VII)* categorically affirms that any dose of radiation is potentially harmful (see 1990)** <http://www.nap.edu/openbook.php?isbn=030909156X>

2007

1. May: EPA removes all the Rocky Flats site except 1,309 acres in the center of the site from Superfund National Priorities List. <http://www.epa.gov/region8/superfund/co/rkyflatsplant/>
2. July: DOE Office of Legacy Management retains 1,309 acres (about 2 square miles), including the former industrial area, for long-term stewardship activities of ongoing maintenance and monitoring (see 2000) <http://www.epa.gov/region8/superfund/co/rkyflatsplant/>
3. DOE retains an additional 945 acres of land on the west side of the site where mineral rights are held by other parties; when the mineral rights expire DOE expects to cede this land to U.S. Fish & Wildlife.
4. July: DOE transfers 4,933 acres (7.7 square miles) of Rocky Flats site to U.S. Fish & Wildlife Service (FWS) to manage as the Rocky Flats National Wildlife Refuge; refuge remains closed to public due to lack of funding. <http://www.epa.gov/region8/superfund/co/rkyflatsplant/>
5. DOE retains an additional 945 acres of land on the west side of the site where mineral rights are held by other parties; when the mineral rights expire DOE expects to cede this land to U.S. Fish & Wildlife for the wildlife refuge.

2010

1. February 2: Wes McKinley, foreman of the Rocky Flats Grand Jury convened after the FBI raid, elected to the Colorado House of Representatives in 2004,

reintroduces a bill to require prominent signs at Rocky Flats National Wildlife Refuge informing potential visitors that they face risks in visiting the refuge; his several unsuccessful efforts since 2005 to get this bill passed have been opposed by various government officials <http://coloradostatesman.com/content/991583-mckinley-reintroduces-bill-rocky-flats-wildlife-refuge>

2. September 9: Verdict in Cook v Rockwell & Dow, now totaling \$926 million, is overturned; case is appealed to U.S. Supreme Court (see 2012) <http://environmentalappealscourt.blogspot.com/2010/09/cook-v-rockwell-international-corp.html>

## 2011

1. January: Rocky Flats Nuclear Guardianship project is initiated to deal long-term with the plutonium-contaminated Rocky Flats site (see 1990) <http://www.rockyflatsnuclearguardianship.org/>
2. **February 5: New START (Strategic Arms Reduction Treaty), signed by the U.S. and Russia in Prague on April 8, 2010, enters into force, replacing SORT (see 2003) <http://www.state.gov/t/avc/newstart/index.htm>**
3. May: Environmental Assessment issued by DOE Legacy Management concludes with a Finding of No Significant Impact, giving itself a green light to breach all holding-pond dams at Rocky Flats, despite the fact that all public comments objected to this decision. <http://energy.gov/nepa/downloads/ea-1747-final-environmental-assessment>

## 2012

1. June 25: U.S. Supreme Court declines to hear Cook v. Rockwell & Dow; the case is remanded back to Judge John Cane of the U.S. District Court in Denver (see Sept. 2010)
2. December 31: Section 16, a 640 acre plot at the southwest corner of the Rocky Flats National Wildlife Refuge, is added to the Refuge, while a 300-foot wide strip of land along the Refuge's eastern edge (Indiana St.) is transferred from the Refuge to the Jefferson Parkway Public Highway Authority.

## 2013

1. Michelle Gabrioloff-Parish, a mother of two children who lives in Superior, having learned about health effects from exposure to plutonium in the Rocky Flats environment, creates Candelas Glows, to inform people considering buying homes in the new Candelas development along the southern edge of the Rocky Flats site of the danger of living adjacent to Rocky Flats.
2. September 12 and 13: For an extended over these two days at the height of flooding, the surface water samplers on both Walnut Creek and Woman Creek on the Rocky Flats site were so overwhelmed with water that they recorded no contents of plutonium/americiuim in the midst of what is sometimes referred to as a 1,000-year flood.

## 2014

1. June 6-8: "Rocky Flats: Then and Now," a remembrance of the 25<sup>th</sup> anniversary of the 1989 FBI raid of the Rocky Flats plant draws large crowds to the Arvada Center.

2. October: It becomes publicly known that FWS intends in the spring of 2015 to do a “prescribed burn” on 701 acres in the southern portion of the Wildlife Refuge, on land adjacent to the Candelas residential development.

#### 2015

1. January 29: FWS cancels the prescribed burn at the Refuge, says it will do burns later.
2. April 6: Rocky Flats Stewardship Council packet reveals that DOE and FWS are planning a Visitors Center on Refuge land. Evidently DOE intends to pay for the Center, to be located at the Lindsay Ranch in the northwest portion of the Refuge. This is a step toward opening the Refuge to the public.
3. FWS reveals that it has conducted a “soft opening” of the Rocky Flats Wildlife Refuge, consisting of occasional three-mile hikes for up to ten people.
4. FWS announces that it will do no prescribed burns at the Refuge until 2017.