

Chronology of the Union Carbide Corporation

September 1999: Dow Chemical to buy Union Carbide

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1897. Major James T. Morehead and Guillaume de Chalmont produced America's first commercial high-carbon ferrochrome, and furnished ferrochrome for Spanish-American War armorplating. In 1898 the **Union Carbide Company was created in Virginia** to manufacture calcium carbide for acetylene lighting.

1899. National Carbon Company formed in New Jersey; it was succeeded by the National Carbon Company in New York in 1917; its stock eventually was acquired by the Union Carbide & Carbon Company.

1900. **Union Carbide was capitalized at \$6 million**; its calcium carbide plants operated in Sault Sainte Marie, Michigan and Niagara Falls, New York; its main office was in Chicago.

1917. **Union Carbide & Carbon Corporation incorporated in New York**. It acquired the stock of four companies: Linde Air Products (begun in Ohio in 1907), National Carbon Company (New Jersey, 1899 and New York, 1917), Prest-O-Lite (New York, 1913), and Union Carbide Company (Virginia, 1898). The name was changed to Union Carbide Corporation in May 1957.

1920. **Union Carbide's chemicals business (Carbide & Carbon Chemical Company) established**. New products included ethylene glycol (antifreeze), batteries, carbon for film, and ferroalloys for steel construction.

1930. **Several hundred Union Carbide workers died of acute silica poisoning while constructing a tunnel for hydroelectric power for Union Carbide near Hawk's Nest, West Virginia**. Almost 400 lawsuits resulted in an out-of-court settlement of \$130,000, after the victims' attorneys received secret payments to take no further legal action.

World War II. Union Carbide developed raw materials and by-products; resumed butadiene studies to synthesize rubber; acquired the Bakelite Corporation and developed plastics; **began operating Oak Ridge facilities**; Linde **perfected uranium refining**; Electro Metallurgical Company (later Union Carbide's Metals Division) created for **wartime metallurgical research and uranium manufacturing**; National Carbon (later Carbon Products) developed special carbon products; United States Vanadium (later part of Metals Division) **mined uranium and constructed three plants for treating uranium ores**; Union Carbide and Carbon research laboratories contributed **to atomic weapons research**.

1943 January 18. **Entered into contract with the Manhattan Engineer District to operate the Oak Ridge Gaseous Diffusion Plant in Tennessee.** Union Carbide ceased operating the U.S. DOE's Oak Ridge facilities in 1984.

1950s-1960s. **Mercury used for the separation of lithium-6 at Oak Ridge. A third of the world's mercury was brought to Oak Ridge.** Some 2.4 million pounds of mercury are unaccounted for; while most is probably underneath buildings, 475,000 pounds leaked into a creek, and 30,000 pounds are believed to have leaked into the air. In 1955, almost half of workers tested had mercury in their urine at levels above those considered safe.

1952. **Kanawha Industrial Emergency Planning Council** was founded by area chemical industries; later on government agencies joined the Council, and the word "Industrial" was dropped.

1955. **Union Carbide Nuclear Company created.**

1963. **Union Carbide began funding confidential research on the toxicity of methyl isocyanate (MIC)** at Carnegie Mellon University in Pittsburgh; more research was performed in 1970.

1972. **The corporation's long-term plan included "strengthening the assignment of individual responsibilities and accountabilities, strengthening business management methods, allocating resources selectively in strategic planning units, and practicing good corporate citizenship at home and abroad."**

1973. **Three employees killed at the Penuelas, Puerto Rico complex.**

1973. **Benzene gas leak at the Penuelas, Puerto Rico complex killed an employee.**

1973. **Employee at Institute, West Virginia killed by propane fumes.**

1975. **India granted Union Carbide a license to manufacture pesticides.** Union Carbide Corporation built a plant in Bhopal, Madhya Pradesh, with Union Carbide owning 51 percent and private Indian companies the other 49 percent.

1975 February 10. **An explosion at Union Carbide's Antwerp, Belgium polyethylene plant killed six employees.** The plant was later sold to BP Chemicals.

1976. **Union Carbide's Agricultural Products Division began producing Sevin insecticide and Temik pesticide.**

1977. **Strike at Union Carbide's MIC plant in France.**

1978. **Worker electrocuted at the Eveready battery plant in Jakarta, Indonesia.**

1980 July. **The U.S. Departments of Labor and Health & Human Services reported excessively high brain cancer rates at seven petrochemical plants.** The second-highest rate was at Union Carbide's Texas City facility, where 18 workers had died of brain cancer.

1980 December. **The Environmental Quality Board fined Union Carbide \$550,000 for air pollution violations dating back to 1972 at its Yabucoa, Puerto Rico graphite electrode plant.** See also the 1981 entry.

1981. **Fire at the graphite electrode plant at Yabucoa, Puerto Rico.**

1981. **"Pollution control and other facility obligations** [listed as \$142 million in 1980 and \$126 million in 1981] represent **state, commonwealth, and local governmental bond financing of pollution control** and other facilities and are treated for accounting and tax purposes as debt of Union Carbide Corporation. These **tax exempt bonds** mature at various dates from 1982 through 2009 and have an average annual effective interest rate of 6.93%. At December 31, 1981, the Corporation had a contingent obligation with respect to \$42 million of pollution control and other facility obligations assumed by purchasers of Union Carbide facilities."

1981. **Union Carbide fined \$50,000 for spilling 25,600 gallons of propylene oxide into the Kanawha River in 1978-1980.**

1981 December. **Newsday article on Union Carbide in Indonesia reported that more than half its Indonesian employees suffered from kidney disease due to exposure to mercury**, that mercury levels in an Indonesian factory's well water were twenty times higher than levels considered acceptable in the U.S, and that surrounding rice fields and groundwater were also contaminated.

1981-82. **Completed a Temik aldicarb pesticide plant in Brazil.**

1982. "By the end of the decade, we expect to add nine new insecticides to our roster, for a total of eleven. **Our intention is to have the broadest and strongest portfolio of insecticides in the industry**, with products that offer important protection for all the major agricultural crops of the world."

1982 May. **Union Carbide inspection team indicated that the plant at Bhopal, India was unsafe.**

1982 July. **Hydrogen chloride leaked from a tank car at Union Carbide's Massey yard at South Charleston, West Virginia; several hundred residents were evacuated, a some were treated at the hospital.**

1982 December 11. **Tank containing acrolein exploded at the Taft, Louisiana plant; windows a mile and a half from the plant were blown out, and 17,000 people were evacuated.**

1983. **Agreement reached to sell Indian chemicals and plastics business.**

1983. **Temik aldicarb pesticide reinstated for use in Florida** after being temporarily suspended for environmental impact evaluation.

1983. **An excess of cancer deaths is reported at Union Carbide's Seadrift, Texas plant.** Workers exposed to polyethylene showed a seven-fold greater risk of lymphoma than the general public.

1984. **West Virginia agencies fine Union Carbide \$105,000 for hazardous waste violations.**

1984 March. **Ceased operating the U.S. Department of Energy's Oak Ridge, Tennessee (begun in 1943) and Paducah, Kentucky facilities, and dissolved its Nuclear Division.**

1984 September 11. **An internal Union Carbide memo warned of a "runaway reaction that could cause a catastrophic failure of the storage tanks holding the poisonous [MIC] gas" at the Institute, West Virginia plant.** The memo was released in January 1985 by U.S. Representative Henry Waxman (D-CA), Chairman of the House Health and the Environment Subcommittee.

1984 December 2-3. Bhopal, India disaster killed thousands of people.

1984 **CORPORATE STATEMENT ON BHOPAL:** Company statements in its 1984 Annual Report included the following: "**Bhopal was a shocking tragedy, but Union Carbide was well served by our quick and compassionate response**, and by the way the situation was managed. We moved swiftly to provide emergency relief while concentrating management of the crisis among a small group of executives, so that unaffected businesses could proceed with their normal routines. **Many were shocked that the accident had happened to Union Carbide, a company with an excellent safety record.** Expressions of support for Carbide poured in from customers, suppliers, and friends around the world. Carbide was also sustained by the performance of our employees, who never faltered throughout the December crisis." "Numerous lawsuits have been brought... alleging, among other things, personal injuries or wrongful death from exposure to a release of gas... Some of these actions are purported class actions in **which plaintiffs claim to represent large numbers of claimants alleged to have been killed or injured as a result of such exposure...**"

In its 1984 Form 10-K (written in early 1985), the only mention of Bhopal was the following statement: "**In part because of the accident in Bhopal, India, chemical companies, including Union Carbide, have had difficulty renewing their public liability insurance for the same coverage that had been in effect.** In March 1985 Union Carbide renewed its personal injury and property damage insurance and now has substantially less of such insurance with broader exclusions and a substantially larger deductible than in 1984. Union Carbide is continuing to seek additional coverage."

1985. **CORPORATE STATEMENT ON BHOPAL:** "**A settlement for \$350 million has been proposed for the lawsuits seeking recovery for personal injuries, death, property damages and economic losses from the release of gas at Union Carbide India Limited's Bhopal, India plant in December 1984...** The tentative settlement agreement is supported by the U.S. attorneys for the individual plaintiffs, but is subject to the approval of Judge John Keenan and of the Corporation's Board of Directors, and in addition, the Union of India must either agree to the settlement or a portion of the settlement must be reasonably identified and allocated for the Union of India's claims for its expenses from the release. The Corporation does not intend to conclude a settlement unless all claims arising out of the Bhopal gas release can be resolved with finality or provided for in the settlement process."

1985. "Union Carbide and its affiliated companies operate[d] approximately 700 plants, factories, laboratories, mines, and mills around the world. **Some of the facilities will be divested under the announced restructuring program and the sale of the Consumer Products business** [batteries, lighting products, plastic wrap and bags, antifreeze, and automotive specialty products, in 1986]."

1985. The **National Institutes for Chemical Studies (NICS) was established**; see the 1992 entry for NICS' Kanawha cancer study, and the June 1994 entry for the "Safety Street" event sponsored by NICS. West Virginia donated \$150,000 of state money to fund the organization.

1985. **Fifth U.S. Circuit Court of Appeals (New Orleans) dismissed 28 suits by chemical manufacturers attempting to challenge EPA regulations on plastic and synthetic fiber wastewaters.**

1985. **When the price of Union Carbide stock dropped from \$48 per share to \$32, Texas investor Sid Bass bought over five percent of the total stock.**

1985. **\$42 million of pollution abatement facility obligations** was assumed by purchasers of Union Carbide facilities.

1985. **Lawsuit filed by the family of Joe Harding, an employee at the Union Carbide-run uranium enrichment plant in Paducah, Kentucky owned by the U.S. Department of Energy, charging that**

his fatal cancer was due to exposure to low-level radiation. Harding had claimed that exposure to uranium hexafluoride was routine, and that Union Carbide had encouraged workers to falsify radiation tests. The Kentucky Department of Workers' Claims was to decide in 1994 whether to award workers' compensation benefits to the family.

1985 January 15. The chemical industry announced the formation of a special committee of **the West Virginia Manufacturers Association to lobby the state legislature "so that those regulations [in response to the Bhopal disaster] are reasonable and do not unnecessarily harm the industry."**

1985 January 23. The U.S. EPA announced that Union Carbide records showed that there had been 28 leaks of MIC at the Institute, West Virginia plant in the years 1980 through 1984. **MIC production at the Institute plant was halted after the disaster at Bhopal until May 1985, but in the six weeks following the disaster, 1.4 million pounds of MIC at Institute were converted to pesticide, and shipments of MIC to France and Brazil were returned to the company's Woodbine, Georgia facility.** See also the February 1985, August 1985, and February 1990 entries.

1985 February. **Union Carbide notified the U.S. EPA that since 1980, 190 chemical leaks had occurred at its Institute, West Virginia plant, including 61 leaks of methyl isocyanate (MIC), 107 leaks of phosgene, and 22 leaks of both.**

1985 February. **Union Carbide employees in the United States had raised more than \$100,000 to help victims in Bhopal;** the money was distributed through the Missionaries of Charity (New York), the Lions Club International Foundation (Oak Brook, Illinois), and Share and Care Foundation for India (Ramsey, New Jersey).

1985 March 1. The U.S. EPA **filed a civil administrative complaint against Union Carbide under TSCA Section 8(e), seeking a civil penalty of \$3.9 million for delayed reporting of skin cancer tests involving diethyl sulfate.** The tests, which had been conducted at the Carnegie Mellon Institute of Research in 1976-1978, showed a high rate of skin cancer in mice treated with the chemical; Union Carbide did not notify the EPA until September 1983.

1985 March. **5,700 pounds of acetone and mesityl oxide leaked from a Union Carbide distillation column at its plant in South Charleston, West Virginia;** dozens of area residents became ill after breathing the fumes.

1985 June. The U.S. EPA fined six corporations (Union Carbide, BASF Wyandotte, Ciba-Geigy, BASF Systems, Dow Corning, and B.F. Goodrich's Tremco subsidiary) more than \$6.9 million dollars **for failing to notify the EPA before manufacturing new chemicals;** the names and uses of the chemicals were withheld by the EPA because the manufacturers claimed that was confidential business information protected by law. Union Carbide was fined \$212,500 for producing a new chemical at its Sistrerville, West Virginia plant.

1985 August 11. **The Institute, West Virginia facility leaked methylene chloride and aldicarb oxime, chemicals used to manufacture the pesticide Temik; six workers were injured, and more than a hundred residents were sent to the hospital.** Thirty people filed two lawsuits seeking \$88 million in damages, but hundreds of people marched in support of the company. OSHA proposed fines of \$32,100 for endangering workers, though later agreed to having Union Carbide pay \$4,400 if it bought an accident simulator for training workers. Union Carbide spent \$5 million to improve safety systems, but two more leaks occurred in February 1990. See also the January 23, 1985, February 1985, and February 1990 entries.

1985 November. **Union Carbide charged that employee sabotage caused the disaster at Bhopal,**

India.

1985 November. A U.S. EPA study lists 403 highly toxic chemicals, being used by at least 577 companies at thousands of locations, which pose serious health dangers to the public in the event of a chemical accident; only about twenty percent of the thousands of chemicals in commercial use had even been tested. The previous month, it was revealed that a draft **EPA report revealed that there had been 6,928 toxic chemical accidents since 1980, killing 135 people and injuring almost 1,500.**

1986. **Severance agreement between Union Carbide and former chairman Warren Anderson.**

1986. **In response to the Bhopal disaster, the U.S. Congress enacted the Emergency Planning & Community Right-to-Know Act.** EPCRA (or the Superfund Amendment & Reauthorization Act, SARA III) is a compromised and largely procedural law entailing no major reductions in toxic chemicals. EPCRA requires that inventories of hazardous chemicals be provided; the Toxic Release Inventory and Local Emergency Planning Committees are results of EPCRA.

1986 January. **Hostile takeover attempt by GAF Corporation;** GAF soon withdrew its bid, but profited \$81 million from sales of Union Carbide stock.

RECAPITALIZATION/BANK CREDIT AGREEMENT/DEBT TENDER OFFER: To defend itself against the takeover attempt, Union Carbide repurchased 116,400,000 shares [out of 128 million total shares?] of its common stock (38,800,000 shares, adjusted for the March 1986 stock split) for \$776 million in cash and \$2.521 billion in debt securities "under an indenture which contained covenants that imposed significant restrictions upon the Corporation", one of which was the agreement to sell the consumer products division by March 1986; see the June 1986 entry for the cost of failing to do so. Funds to finance the repurchase were obtained through: loans of \$2 billion and \$976 million; proceeds from the sale of the agricultural products business for \$800 million; sale and leaseback of the corporate headquarters in Connecticut for \$340 million; the December 1986 sale of 30 million shares of common stock for \$650 million; the 1987 sale of the electronic capacitor business to Kemet for \$150 million; the sale of \$249 million receivables to the new subsidiary, Union Carbide Finance Corporation; and other transactions.

1986. **The mayor of La Mesa, California asked Union Carbide to relocate its arsine-phosphine-ethylene oxide production facility. An attempt to locate it in Washougal, Washington failed. Amidst citizen protest in 1988-1989, the arsine-phosphine facility was relocated outside Kingman, Arizona. The plants were later transferred to Praxair, and one of them was sold to Allied Signal.**

1986 February. **Institute, West Virginia employee killed in coal crusher.**

1986 April. The U.S. **OSHA, after a September 1985 inspection of five of 18 plant units at Institute, West Virginia, alleged 221 violations of 55 health and safety laws, and proposed \$1.4 million in fines.** OSHA classified 72 of the 221 violations "serious," where there is substantial probability of death or substantial physical harm. OSHA had earlier given the Institute plant a "clean bill of health" after Union Carbide spent \$5 million in safety repairs after the disaster at Bhopal.

1986 May. **Federal district judge dismissed Bhopal suits in the United States.**

1986 May. **Union Carbide had finished spending \$700,000 on fencing, a guard tower, and electronic and photographic surveillance equipment to "increase security" at its Institute, West Virginia plant.**

1986 June. **Completed the sale of most of its worldwide battery operations, to Ralston Purina, for \$1.415 billion.** The consumer products division was to have been sold by March 1986, or shareholders

were to receive special cash distributions; since the sale did not occur by then (see also the July 1986 entry for the sale of home and automotive products), the corporation distributed \$951 million in July 1986 and \$102 million in October 1986, and in September 1988, a tentative settlement of class actions cost another \$31.7 million ("In re Union Carbide Corporation Consumer Products Business Securities Litigation").

1986 June. **Explosion injures employee at Institute, West Virginia.**

1986 July. In a highly-leveraged buy-out, Union Carbide sold its Home & Automotive Products to the newly-created **First Brands Corporation, completing the sale of its home and automotive products business.** For the penalty paid by Union Carbide for not divesting its consumer products division by March 1986, see the June 1986 entry.

1986 July. **Distributed \$951 million as partial payment in a class action lawsuit** ("In re Union Carbide Corporation Consumer Products Business Securities Litigation"), which was settled in September 1988; see the June 1986 entry.

1986 September. **The Indian government filed Bhopal suit against Union Carbide, seeking \$3 billion.**

1986 October. **Distributed \$102 million as partial payment in a class action lawsuit** ("In re Union Carbide Corporation Consumer Products Business Securities Litigation"), which was settled in September 1988; see the June 1986 entry.

1986 October 2. Agreement between Union Carbide Corporation, GAF Corporation, Jay & Company, Mayfair Instruments, and GAF chairman Samuel Heyman. See the January 1986 entry for the takeover attempt by GAF Corporation.

1986 December. **Completed the sale of its worldwide Agricultural Products business to the French chemical and pharmaceuticals company, Rhone Poulenc,** for \$585 million. The deal included Rhone-Poulenc's purchase of Union Carbide's chemical plant in Institute, West Virginia.

1987. **RESTRUCTURING:** "After a period of dramatic change, Union Carbide Corporation in 1987 completed a successful year as a restructured company, sharply refocused on three businesses in which we have leading positions: chemicals and plastics, industrial gases, and carbon products."

1987. **BHOPAL:** "... [M]anagement believes that adequate provisions have been made for probable losses with respect [to litigation]... **The Corporation is vigorously defending the pending litigation...** The Union of India alleged in [the November 17, 1986] proceeding [in Bhopal district court] that damages and losses arising from the Bhopal gas emission exceed \$3 billion, which the Corporation strongly denies... The Corporation has appealed to the High Court in Jabalpur to set the order aside [for \$270 million in interim compensation, of \$15,400 for each death and \$7,700 for each case of total disability]. The Corporation maintains that interim compensation for personal injuries cannot be allowed when the evidence as to liability is in dispute and the claimants' right to compensation has not been established. Given the Corporation's numerous defenses and the evidence that the tragedy was caused by employee sabotage, liability is in dispute... The Corporation believes that the [homicide] charges [against former Union Carbide chairman Warren Anderson] are without merit, and that Mr. Anderson, UCE [Union Carbide Eastern] and the Corporation are not subject to the jurisdiction of the courts of India in respect to criminal charges."

1987. "As for South Africa, **dividends so far totaling \$3.5 million from Union Carbide's investments there have been set aside to aid South African blacks.** The goal is a permanent fund earmarked for college scholarships for blacks at mixed-race universities, for legal aid, tutoring, and for training in business and civic affairs. Seventy-five students are currently participating in the scholarship program."

1987. Union Carbide Corporation operated a uranium mine in Uravan, Colorado from the 1930s to 1984. In 1987, UC signed an **agreement to pay \$40 million to clean up its Uravan uranium contamination**, and to pay the state \$2.8 million in legal costs. Yet UC subsidiary Umetco planned to transport low-level radioactive waste from other sites to Uravan.

1987 July 24. **Union Carbide Corporation agreed to pay \$408,500 to settle 556 alleged health and safety regulations violations at its Institute and South Charleston, West Virginia plants**; OSHA had originally proposed \$1.4 million in fines for 462 willful violations.

1988. More than 170 members of the Chemical Manufacturers Association, a tax-free lobbying organization, established their "**Responsible Care: a Public Commitment**" program of ten pledges to manufacture and use their products in a safe manner. Responsible Care "is an ongoing process, and a call for action, to achieve these primary goals: improved chemical processes; enhanced practices and procedures; reduction of every kind of waste, accident, incident and emission; reliable communication and dialogue; and heightened public scrutiny and input."

1988 April. **Union Carbide Corporation sued 115 insurance companies to recover the costs of cleaning up its hazardous waste sites.**

1988 April. **Indian court upheld order for Union Carbide to pay \$190 million in interim relief to Bhopal victims.**

1988 August 13. **Fire and explosion of 4,300 pounds of ethylene oxide at Institute, West Virginia; tetranaphthalene was spilled into the Kanawha River, killing 3,000 fish.**

1988 September. **Payment of \$31.7 million in tentative settlement of a class action lawsuit** ("In re Union Carbide Corporation Consumer Products Business Securities Litigation"); see the June 1986 entry.

1988 October. **Union Carbide's Texas City, Texas facility began a community outreach program**, including focus groups, plant tours, and a formal citizens advisory panel (CAP).

1988 November. **Bhopal district court issues arrest warrant for former Union Carbide chairman Warren Anderson after he failed to respond to a summons.** See also 1991 and April 1994 entries.

1989. **VOLUNTARY CORPORATION DISSOLVING & RESTRUCTURING:** A new holding company, UCC Holdings, was incorporated in New York, and then renamed Union Carbide Corporation (UCC). The former UCC became the Union Carbide Chemicals & Plastics Company (UCC&P), and a wholly-owned subsidiary of the new holding company. Union Carbide Industrial Gases and UCAR Carbon Company became wholly-owned subsidiaries of UCC&P. In July 1990, UCC&P distributed its shares in UCAR Carbon to the holding company. [So Union Carbide, the new holding company, owned Union Carbide Chemicals & Plastics (UCC&P), which had two segments: Chemicals & Plastics and Industrial Gases.] In 1991, Union Carbide sold half of UCAR, which thus became a joint venture with Mitsubishi. In 1992, Union Carbide Corporation spun off its industrial gases operations into a new corporation called Praxair (see June 1992 entry).

1989. **"The Corporation and its subsidiaries operate[d] approximately 483 plants, factories, and laboratories around the world."**

1989. **CORPORATE DEBT:** By the end of 1989, Union Carbide had reduced its debt-to-capital ratio from a high in 1986 of almost 80 percent to 47.8 percent.

1989. **Union Carbide, one of three defendants in an asbestos cancer lawsuit, settled for \$900,000.** See also December 1993 entry.

1989. CORPORATE STATEMENT: "During the year, some 30,000 of our neighbors at manufacturing locations attended plant open-house gatherings to hear about our safety and environmental programs from the people who run the plants. We have also been an active participant in the Community Awareness and Emergency Response program of the Chemical Manufacturers Association (CMA)."

1989-1990. **GAF-Boyd Jeffries-Union Carbide stock manipulation case.**

1989 January. **Incorporated its U.S. industrial gases and carbon products businesses as separate subsidiaries.** The carbon business became UCAR Carbon Company; the gases operations became Union Carbide Industrial Gases, which continued under the Linde trademark. See also the June 1992 entry for the spin-off of the Linde industrial gases operations into a new corporation, Praxair.

1989 BHOPAL: In February, the **Supreme Court of India ordered a full and final Bhopal settlement of \$470 million, and dismissed charges against Warren Anderson (the charges were revived in 1991).** UCC&P and Union Carbide India Limited (UCIL) paid the \$470 million in a "final settlement of all civil claims." "Our goal from the beginning has been to get fair compensation to the victims as rapidly as possible." **The Indian government, and the victims, contested the settlement.**

UNION CARBIDE CORPORATION STATEMENT ON BHOPAL: "On February 14, 1989, the Supreme Court of India ordered a \$470 million final settlement of all litigation with respect to the December 3, 1984 methyl isocyanate gas release at the Union Carbide India Limited ("UCIL") plant at Bhopal, India. The Corporation is a 50.9% shareholder of UCIL. The Union of India and Union Carbide Corporation accepted the Court's order. The Court stated that its order was just, equitable and reasonable based on the facts and circumstances of the case, including the pleadings, the data placed before the Court, the proceedings in the litigation in the United States, the settlement offers and counter-offers made by the parties, the complex issues of law and fact, the enormity of human suffering and the pressing urgency to provide immediate and substantial relief to the victims. The Court also quashed all criminal proceedings related to the gas release. Although the civil suit was filed by the Union of India against the Corporation alone, on February 15, 1989 the Supreme Court of India made UCIL party to the suit. The Court directed that the Corporation pay \$425 million of the settlement and that UCIL pay the Rupee equivalent of \$45 million. The \$5 million payment previously made by the Corporation to the Red Cross at the suggestion of U.S. Judge John F. Keenan was credited to the Corporation, leaving a balance due of \$420 million. The Court specified that the \$470 million total be paid by March 23, 1989 to the Union of India for the benefit of all the victims of the gas release under the Bhopal Gas Leak Disaster (Processing of Claims) Act. "Effective upon full payment of the settlement, the Court discharged the previous undertaking of the Corporation in the District Court at Bhopal to maintain unencumbered assets having a fair market value of \$3 billion. The Supreme Court proceedings also provide that the accused in the criminal proceedings are deemed acquitted. On February 24, 1989, the Corporation and UCIL delivered their respective payments to the Supreme Court of India, which payments were accepted by the Court." [On February 24, 1989, Union Carbide paid \$420 million, and UCIL paid \$45 million; "the payment was funded through proceeds from drawdowns of existing standby credit facilities. It is anticipated that these borrowings will be reduced during 1989 by application of insurance proceeds as well as internally generated funds."] "Various applications have been filed in the Supreme Court of India to set aside the settlement. The Corporation believes that those applications are without merit. At the time the settlement occurred, all of the suits that were brought in the United States with respect to the gas release had been dismissed, except a civil suit in the state court in Connecticut. The settlement will be placed before the Connecticut court. Also, plaintiffs in a civil suit in the state court in Texas that was dismissed have attempted to appeal the dismissal. If the appellate process proceeds, the settlement will be placed before the appellate court."

1989 April. **Shareholders at Union Carbide's annual meeting rejected a plan to increase compensation to victims of the Bhopal gas leak.**

1989 December. **U.S. EPA conditionally proposed a civil penalty of \$325,000** jointly against Union Carbide Corporation and Rhone-Poulenc Ag Company for violations of the Clean Water Act at the Institute, West Virginia facility.

1989 December 22. **Supreme Court of India upheld the Bhopal Act, under which India represented the victims.**

1990. UNION CARBIDE CORPORATE STATEMENT ON HAZARDOUS WASTE SITES: **"The Company has received requests for information, notices and/or claims with respect to approximately 150 waste sites** at which the Company has no ownership interest. At a substantial majority of these sites, it is our belief that the Company will incur no liability or a small liability, since, in general, final allocation of responsibility is made based on each PRP's relative contribution of hazardous waste to the site. Environmental investigatory and remediation projects are also being undertaken at waste sites located on property presently owned by the Company."

1990. BHOPAL: **Union Carbide recorded "a charge of \$58 million, representing litigation accruals principally related to resolution of the Bhopal litigation."**

1990. **Federal appeals court rejected a challenge by Union Carbide and the Chemical Manufacturers Association to overrule EPA regulations from 1989 on hazardous waste landfill liners and leak detection systems.**

1990 January 12. **The administration of the government of India announced it would support the victims' petitions to set aside the Bhopal settlement.** See also the 1991 Bhopal entry for the rejection of these petitions.

1990 February. **Union Carbide's Institute, West Virginia facility leaked methyl isocyanate (MIC) gas, injuring seven workers, and muriatic acid, after which 15,000 residents were ordered to remain indoors.** See also the January 23, 1985, February 1985, and August 1985 entries.

1990 August. **The Mexican environmental agency SEDUE took action against Union Carbide's Kemet subsidiary** and six other companies for illegally dumping hazardous waste from the Parqu Industrial de Norte maquiladora at Matamoros, Mexico, near Brownsville, Texas.

1990 September. Sold its urethane polyols (urethane foams) and propylene glycols (personal care products) to Arco Chemical for a gain of \$164 million; there were **anti-trust issues** in the deal, and it was challenged by the Federal Trade Commission.

1990 November. **Friends of the Earth Union Carbide report.**

1990 November. **National Toxics Campaign releases Present Dangers... Hidden Liabilities: A Profile of the Environmental Impact of the Union Carbide Corporation in the United States (1987-88)** by Robert Ginsburg.

1991. **Union Carbide opened "the first full-scale multiplastics recycling facility" in the U.S., in Piscataway, New Jersey.** The facility can process 4.5 million pounds per month of polyethylene bags, bottles, and containers.

1991. The **Canadian government cancelled the registration for personal insect repellants containing ethylhexanediol (EHX); the U.S. EPA issued a customer warning that the product posed a risk of birth defects to pregnant women;** and Union Carbide withdrew its registration to manufacture it.

1991. The **U.S. Department of Energy's Clean Coal Technology Program gave Union Carbide \$32.7 million** for its Cansolv process for reducing sulfur dioxide emissions from coal-burning power plants.

1991. BHOPAL: In January, the **Indian government again said the \$470 million Bhopal settlement was inadequate**, and said it would support the victims' petitions challenging it. By February, Union Carbide had collected \$200 million from its insurance companies to cover Bhopal claims. In October, the Supreme Court of India rejected the victims petitions, upheld \$470 million settlement, and lifted the company's immunity from criminal prosecution. A Bhopal court then revived culpable homicide charges against former chairman Warren Anderson (a warrant for him was originally issued in November 1988) and eight other Union Carbide officials. UCC&P and UCIL, at the request of the Supreme Court of India, announced that they would provide the government of India with up to \$16 million for a hospital to be built in Bhopal, but by May 1992, with Anderson still not appearing in court, the government ordered the confiscation of Union Carbide Corporation's 50.9 percent share in Union Carbide India Limited (UCIL).

1991 January. The U.S. EPA issued a complaint against McGhan Nusil (which UCC&P acquired in March 1991), alleging that McGhan had violated the Toxic Substances Control Act by manufacturing TSCA inventory chemicals without notifying EPA; the EPA proposed a penalty of \$384,000. See also the June 1992 entry.

1991 March 12. **An explosion at Union Carbide's No. 1 ethylene oxide and derivative production unit Seadrift plant near Port Lavaca, Texas killed John Resendez, a contract worker, and injured 26 others.** The plant shutdown cost Union Carbide \$50 million in net income. In September, the U.S. OSHA proposed a fine of \$2,803,500 for 112 willful violations of health and safety regulations; \$1.5 million was eventually paid. In March 1992, Union Carbide agreed to pay \$3.2 million to the widow and two children of Resendez.

1991 May. **Srinagar, India battery plant closed by citizen protest.**

1991 May 24. **380,000 gallons of chloroform spilled into Guayanilla Bay at Ponce, Puerto Rico.** U.S. EPA ERNS database, Aug. 16, 1994, record number 73245.

1991 November. U.S. EPA issued an enforcement order to eleven companies, including Union Carbide, for **the clean-up of the Middlefield-Ellis-Whisman groundwater contamination site in Mountain View-San Jose, California.**

1991 December. **Union Carbide and Rhone-Poulenc filed a consent decree for violations of the Clean Water Act at their Institute, West Virginia facility.** They agreed to a penalty of \$425,000 (\$188,398 from Union Carbide, \$236,602 from Rhone-Poulenc).

1991 December. UCC&P "**voluntarily disclosed**" "**certain potential violations**" of the **Toxic Substances Control Act**, which could result in penalties likely to exceed \$100,000. See also June 1992 entry.

1991 December 31. **Chemical tank explosion killed an employee at South Charleston, West Virginia plant.** An asbestos contractor reported the loss of asbestos in the explosion. Union Carbide was subsequently fined \$151,000 for 23 health and safety violations.

1992. Six corporations (Union Carbide, Amoco, Sterling Chemicals, Marathon Oil, Phibro Energy, and

I.S.P., formerly GAF Corporation) installed a **\$2.5 million system for monitoring air quality in Texas City, Texas.**

1992. **The National Institutes for Chemical Studies (NICS), established in 1985, released its five-year study of cancer rates in the Kanawha Valley, West Virginia.** The study was funded by Union Carbide and other chemical corporations, the U.S. EPA, and environmental groups. The study, which listed the top 23 polluters in West Virginia, showed a link between children's health and their proximity to chemical plants emitting volatile organic compounds. UC and other companies challenged the report's findings.

1992. **UCC&P pledged its shares in UCIL to an English charitable trust** established by UCIL and UCC&P to provide funding for the hospital; the magistrate in pending criminal proceedings ordered the attachment of the shares of UCIL held by UCC&P.

1992. Union Carbide and other companies agreed to pay **\$8.2 million to settle a suit by residents near the Brio Superfund site near Houston.**

1992. **Union Carbide rejected a shareholder resolution for the corporation to sign the CERES (Valdez) Principles of environmental conduct.** A similar resolution was rejected in 1993.

1992 January 2-3. The U.S. EPA served a complaint on UCC&P and Gulf Coast Waste Disposal Authority for **violations of the hazardous waste laws in connection with disposal of wastes from the Texas City, Texas** plant at a Gulf Coast Waste Disposal Authority landfill, and seeking a penalty of \$170,150. In 1993, UCC&P indemnified Gulf Coast for \$45,600 of the \$60,000 Gulf Coast paid to the EPA in April 1993, and in December 1993, UCC&P paid a penalty of \$95,000 to settle the complaint.

1992 March. **Indian court orders extradition of retired Union Carbide chairman Warren Anderson.**

1992 March. U.S. EPA issued a unilateral administrative order requiring Union Carbide and five other parties to clean up the **Warwick (New York) Landfill Superfund site.**

1992 April. CEO Robert Kennedy: **"If we make products that harm the environment, consumers will look for ways to do without them. If protecting the environment is not part of our business strategy, investors and analysts will shun our stock."**

1992 June 30. **The Praxair industrial gases subsidiary was spun off** to Union Carbide Corporation's stockholders after the Internal Revenue Service ruled that the split would be tax-free. "Union Carbide is now engaged almost exclusively in the chemicals and plastics business."

1993. For the second year, **Union Carbide rejected a shareholder resolution calling for the corporation to sign the CERES (Valdez) Principles of environmental conduct.** The corporation also rejected another resolution calling for it to disclose information on the risks of, and its procedures for, toxic chemical accidents.

1993. **Union Carbide Corporation's Responsible Care Progress Report** shows:

- (a) the number of fires and explosions per year (6 in 1988, 3 in 1989, 3 in 1990, 2 in 1991, and 2 in 1992);
- (b) the cancer rates of its employees compared to the U.S. average (less than average);
- (c) Union Carbide fatalities (2 in 1989, 2 in 1990, 3 in 1991);
- (d) Union Carbide carcinogens (dichloroethane, butadiene, dioxane, acetaldehyde, acrylonitrile, anthracene, benzene, chloromethane, chromium compounds, dichloromethane, diethyl sulfate, epichlorohydrin, ethyl acrylate, ethylene oxide, formaldehyde, nickel and compounds, propylene oxide, styrene, styrene oxide, tetrachloroethylene, vinyl acetate, and vinyl chloride);

(e) the 1987-1992 emissions at various Union Carbide plants.

1993 February 26. **An unspecified amount of benzene, 25,920 pounds of methane, 67,490 pounds of ethylene, and 40,000 pounds of "refinery by-product gases" were spilled in several incidents at Texas City, Texas.** U.S. EPA ERNS database, Aug. 16, 1994, record number F93-1635, F93-1641, F93-1642, F93-1643 and F93-1651.

1993 June. **World-scale petrochemical joint venture planned for Kuwait.**

1993 August 18. **An explosion at a former Union Carbide plant in Institute, West Virginia killed one employee and critically injured two others.** Rhone-Poulenc, the current owner, was charged with 27 safety violations at its Larvin pesticide plant, including failure to properly maintain, inspect, and test piping systems and other equipment. OSHA fined Rhone-Poulenc a record \$1.6 million.

1993 September 31. **President Clinton and Vice President Gore presented William Joyce of Union Carbide with a National Medal of Technology Award;** the awards are considered the nation's highest for science and commercialization of technology.

1993 October 27. **Union Carbide announced a restructuring** of divisions and decisionmaking.

1993 November 19. **The U.S. EPA issued a complaint to UCC&P alleging violations of the Clean Air Act at the Texas City, Texas plant,** seeking a civil penalty of \$194,550.

1993 December 5. **Attorneys sought litigants in a 20-year-old class-action suit involving 100,000 victims of occupational exposure to asbestos;** Union Carbide was one of twenty corporations named in the suit, for which a \$1 billion settlement was proposed January 1993.

1994 February. **UCC&P and UCIL agreed to increase the funding for the Bhopal hospital to \$19.3 million;** the Supreme Court of India ordered that the attachment be lifted to permit sales of the UCIL shares, together with blocked dividends and UCIL's contribution, to provide the agreed funding. The remainder of the proceeds from the sale of UCIL shares would be subject to the attachment.

1994 February 23. **The U.S. EPA issued a complaint and compliance order** to UCC&P, alleging violations of federal hazardous waste regulations at the South Charleston, West Virginia plant, and seeking a civil penalty of \$320,000. The EPA charged Union Carbide with failure to perform regular leak detection testing, and with failure to maintain records of boiler wastes such as mercury, lead, and beryllium; the charges stemmed from a December 1992 surprise inspection of the plant.

1994 March 16. **The U.S. EPA fined Union Carbide \$75,000** for not reporting a leak of ethylene oxide at its Institute, West Virginia plant.

1994 April. Union Carbide and a former subsidiary, McGhan Medical, **joined a tentative \$4.7 billion settlement of Dow Corning's silicone breast implant litigation.** Union Carbide was to pay \$138 million over two years, and McGhan \$25 million over 25 years.

1994 April 5. The Free Press reported that **India's Central Bureau of Investigation had taken steps to have former Union Carbide chairman Warren Anderson extradited to India** for his failure to appear in court in connection with the 1984 Bhopal disaster. See also November 1988 and 1991 entries.

1999 September. **Dow Chemical is buying Union Carbide for about \$11.6 billion.** The Dow-Carbide merger is a tax-free, stock-for-stock pooling of interests with the resulting corporation to be owned 75

percent by Dow shareholders and 25 percent by Union Carbide shareholders. Two Union Carbide directors will join the board of Dow. The new corporation expects to save \$500 million by consolidating.

1999 November. **Lawsuit Seeks Compensation For 1984 Disaster Victims.** A federal lawsuit filed Nov. 15 is seeking unspecified damages from Union Carbide Corp. for the "world's worst" industrial accident that killed at least 7,000 people in Bhopal, India, in 1984. The class-action suit accuses the company, which owned 50.9 percent of the plant, of "unlawful, reckless and depraved indifference to human life." The suit says the company and its former CEO, Warren Anderson, failed to comply with court orders in the United States and India after the accident. Union Carbide paid \$470 million in a 1989 out-of-court settlement that gave company executives immunity from prosecution, but India's supreme court later struck down the immunity clause while letting the settlement stand. Many victims and their relatives are still waiting for compensation. Union Carbide accepted "moral responsibility" for the disaster but blamed a "disgruntled" employee (Greenwire, Nov. 18, 1999, citing Larry Neumeister, AP/New Jersey online, Nov. 16, 1999).

March 2000. **Former Union Carbide Official Avoids Summons** "A top executive at Union Carbide Corp. during the 1984 chemical disaster at Bhopal, India, has apparently gone into seclusion to avoid a summons to appear in a Manhattan federal court for civil proceedings against him and the company. Warren M. Anderson, who was the company's chairman, has vacated his last known address in Florida and Union Carbide officials have declined to help track him down, said Kenneth F. McCallion, the lawyer who initiated the civil case. Union Carbide says the settlement it reached with the Indian government in 1989 exempts it and Anderson from further proceedings. Union Carbide spokesman Sean Clancy: "Based on that settlement, we see no reason to encourage any disturbance of Mr. Anderson, who retired as chairman 12 years ago." But the Indian Supreme Court and a federal judge have ruled that the company must "submit to the jurisdiction of the courts of India." The company and Anderson, in absentia, are facing criminal charges in India. And a lawsuit filed in New York charges Union Carbide and Anderson with violating international law." (Greenwire, March 6, 2000, citing Chris Hedges, *New York Times*, March 5).