UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

BP Texas City Clean Air Act Settlement Information Sheet

Company

- BP Products North America Inc., headquartered in Warrenville IL, engages in the exploration, development, production and marketing of oil and natural gas, and additionally operates petroleum refineries in California, Indiana, Ohio, Texas and Washington. BP North America Inc. is a subsidiary of BP p.l.c., headquartered in London, England.

Background

- BP's Texas City refinery, with a refining capacity of more than 460,000 barrels per day, is the third largest petroleum refinery in the United States. On March 23, 2005, a series of fires and explosions at the refinery claimed the lives of 15 workers and injured more than 170 people. The cause of the explosion was traced to the startup of an "isomerization unit" (which increases the octane rating of gasoline). During the startup, the unit's associated "raffinate splitter tower" (which separates light from heavy gasoline components) was overfilled with flammable hydrocarbon liquids, which apparently exploded when ignited by a spark from an idling nearby truck. The incident was investigated by the United States Chemical Safety Board, and resulted in enforcement actions by the Occupational Health and Safety Administration (OSHA) and federal prosecutors for criminal violations of the Clean Air Act (see "Related Actions," below).

- Following the explosion and fire, EPA conducted a series of inspections to determine BP's compliance with the terms of a 2001 consent decree (PDF) (149 pp, 5M, About pdf) requiring the Texas City refinery, as well as BP's other U.S. refineries, to comply with various other Clean Air Act requirements. The current settlement addresses violations identified during those post-explosion inspections, relating to mis-management of benzene, asbestos, and hydrochlorofluorocarbons (HCFCs) at the refinery. While the compliance inspections were prompted by the 2005 incident, the injunctive relief required by this settlement is not directly related to the cause of the explosions.

Injunctive Relief

The settlement will require BP to spend nearly $170 million to install and implement the injunctive relief required by this settlement, with over $150 million dedicated to improving controls and management of benzene-containing wastes.

- **Benzene** - The settlement requires improved management controls to minimize benzene wastes, plus major facility upgrades and equipment, including enhanced benzene

monitoring measures to prevent and limit potential benzene leaks from refinery sewer lines and process units, tank covers to limit volatile organic emissions, and other major facility improvements.

- **HCFCs and Asbestos** - The settlement requires enhanced asbestos waste management systems, training, preventive maintenance, etc. to ensure proper identification, management and disposal of asbestos wastes from refinery construction and refurbishment activities. Similar measures are required for management of HCFCs used in industrial refrigeration and comfort cooling appliances at the refinery, as well as replacement with non-ozone-depleting cooling appliances.

Health Effects/Environmental Benefits

Benzene

- Benzene, a volatile organic compound (VOC) and a hazardous air pollutant, is a byproduct of the petroleum refining process. Benzene wastes are typically managed in a refinery's wastewater collection and treatment system, which is designed to prevent the benzene contained in the wastewater from volatilizing to the atmosphere before the wastes are safely treated.

- **Health Effects** - Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and anemia in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidences of leukemia have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A human carcinogen.

- **Environmental Benefits** - The settlement, when all controls are implemented, is estimated to result in the reduction of 6,000 pounds of benzene emitted from the Texas City refinery each year. For more information on benzene, please visit EPA's Air Toxics Web Site.

HCFCs

- HCFCs are used as refrigerants in industrial refrigeration processes, as well as in comfort cooling (air conditioning) systems. HCFCs, when released into the atmosphere, destroy the earth's protective stratospheric ozone layer.

    - **Health Effects** - Ozone in the upper atmosphere filters the sun's ultraviolet radiation that reaches the Earth's surface. HCFCs and other ozone-depleting substances (ODSs) diminish the amount of ozone, which increases the amount of ultraviolet radiation to which humans, plants and animals are exposed. Exposure to increased levels of ultraviolet radiation causes skin cancer and plays a major role in malignant melanoma development, and causes other harmful effects on plants, marine ecosystems among other impacts.

- **Environmental Benefits** - This settlement, when fully implemented, is estimated to eliminate 51,000 pounds of ozone-depleting HCFCs.

For more information on HCFCs and other ODSs, please visit EPA's Ozone Layer Depletion Web Site.

Asbestos

- Asbestos is commonly used as an acoustic insulator, and in thermal insulation, fire proofing and other building materials. Many products in use today contain asbestos. Proper management of asbestos-containing wastes during building renovation and demolition is necessary to prevent exposure by inhalation of asbestos fibers and through other pathways.

    - **Health Effects** - Exposure to airborne asbestos fibers may result in a potential health risk because persons breathing the air may breathe in asbestos fibers. Continued exposure can increase the amount of fibers that remain in the lung. Fibers embedded in lung tissue over time may cause serious lung diseases including: asbestosis, lung cancer, or mesothelioma.

    - **Environmental Benefits** - This settlement, when fully implemented, is estimated to prevent the future release of asbestos fibers to the atmosphere during building renovation and demolition activities.

For more information on asbestos, please visit EPA's Asbestos Web Site.

Penalty

- $12 million

Supplemental Environmental Project

- BP will perform a supplemental environmental project (SEP) valued at $6 million to retrofit at least 100 heavy-duty diesel vehicles (buses) and light-duty vehicles (trucks or cars) owned/operated by one or more local school districts in the Texas City area to run on liquefied or compressed natural gas. The SEP also requires BP to provide and/or construct four natural gas refueling stations and a service center, and to train local technicians in the maintenance and repair of natural gas vehicles. When fully implemented, the SEP is estimated to reduce emissions of CO, HC, PM and NO_x by over 77 tons per year.

For more information on Supplemental Environmental Projects, please visit EPA's SEP Web Site.

Comment Period

The proposed settlement, lodged in the U.S. District Court for the Northern District of Indiana, is subject to a 30-day public comment period and final court approval. Information on submitting comment is available at the Department of Justice website.

Related Actions

- EPA Criminal Enforcement Action.
- U.S. Chemical Safety Board Investigation Report.
- Occupational Health and Safety Administration Settlement Agreement.