Shell Oil to Spend Over $115 Million to Reduce Harmful Air Pollution at Houston Area Refinery and Chemical Plant

The Department of Justice and the U.S. Environmental Protection Agency (EPA) announced today that Shell Oil and affiliated partnerships (Shell) have agreed to resolve alleged violations of the Clean Air Act at a large refinery and chemical plant in Deer Park, Texas, by spending at least $115 million to control harmful air pollution from industrial flares and other processes, and by paying a $2.6 million civil penalty. Shell has agreed to spend $1 million on a state-of-the-art system to monitor benzene levels at the fenceline of the refinery and chemical plant near a residential neighborhood and school and to make the data available to the public through a website.

Shell will spend $100 million on innovative technology to reduce harmful air pollution from industrial flares, which are devices used to burn waste gases. Shell is required to take the following actions to improve flaring operations: minimize flaring by recovering and recycling waste gases (which may then be reused by Shell as a fuel or product); comply with limitations on how much waste gas can be burned in a flare (flare caps); and install and operate instruments and monitoring systems to ensure that gases that are sent to flares are burned with 98% efficiency. Shell's agreement to recover and recycle waste gases (flare gas recovery) at its chemical plant is a first of its kind. Once fully implemented, the pollution controls required by the settlement will reduce harmful air emissions of sulfur dioxide, volatile organic compounds (VOCs) including benzene, and other hazardous air pollutants by an estimated 4,550 tons or more per year. These controls will also reduce emissions of greenhouse gases by approximately 260,000 tons per year.

“This settlement will result in substantial reductions in toxic air pollution through state of the art technology and increased efficiencies at the Deer Park plant,” said Acting Assistant Attorney General Robert G. Dreher of the Justice Department’s Environment and Natural Resources Division. “This agreement will bring Shell Oil’s refinery and chemical plant in Deer Park into compliance with the nation’s Clean Air Act and result in cleaner, healthier air for residents in the local communities for many years to come.”

“The innovative emission controls required by today’s settlement will cut harmful air pollution in communities near Houston,” said Cynthia Giles, Assistant Administrator of EPA’s Office of Enforcement and Compliance Assurance. “This case is part of EPA’s nationwide enforcement effort to protect fenceline neighborhoods by significantly reducing toxic pollution from flares and making information about pollution quickly available to affected communities.”

The settlement was filed at the same time the Justice Department filed a complaint on behalf of EPA alleging, among other things, that the company improperly operated its 12 steam-assisted flaring devices in such a way that excess VOCs, including benzene and other hazardous air pollutants, were emitted.

In addition to reducing pollution from flares, Shell will significantly modify its wastewater treatment plant; replace and repair tanks as necessary; inspect tanks biweekly with an infrared camera to better identify potential integrity problems that may lead to leaks; and implement enhanced monitoring and repair practices at the benzene production unit. When fully implemented, these specific projects are estimated to cost between $15 and $60 million.

Also, in a second project to benefit the community, Shell has agreed to spend $200,000 on retrofit technology to reduce diesel emissions from government-owned vehicles which operate in the vicinity of the Deer Park complex.

These actions will cut emissions of pollutants that can cause significant harm to public health. Exposure to high concentrations of sulfur dioxide can affect breathing and aggravate existing respiratory and cardiovascular disease. VOCs are a key component in the formation of smog or ground-level ozone, a pollutant that irritates the lungs, exacerbates diseases such as asthma, and can increase susceptibility to respiratory illnesses, such as pneumonia and bronchitis. Chronic exposure to benzene, which EPA classifies as a carcinogen, can cause numerous health impacts, including leukemia and adverse reproductive effects in women.

Today’s settlement is part of EPA’s national effort to reduce emissions toxic air pollutants, with a...
particular focus on industrial flares. These requirements focus on reducing the amount of waste gas sent to flares and on improving flare operations, both of which work to reduce toxic emissions. Improper operation of an industrial flare can send hundreds of tons of hazardous air pollutants into the air. The more waste gas a company sends to a flare, the more pollution occurs. The less efficient a flare is in burning waste gas, the more pollution occurs. EPA wants companies to flare less, and when they do flare, to fully burn the harmful chemicals found in the waste gas.

Shell, which is headquartered in Houston, processes approximately 330,000 barrels per day of crude oil at its Deer Park facility, making it the 11th largest refinery in the United States. In addition, the Deer Park chemical plant produces approximately 8,000 tons per day of products that include ethylene, benzene, toluene, xylene, phenol, and acetone. Both the chemical plant and the refinery operate 24 hours a day, 365 days a year.

The consent decree, lodged in federal court in the Southern District of Texas, is subject to a 30-day public comment period and court approval. The consent decree will be available for viewing at www.justice.gov/enrd/Consent_Decrees.html.

More information about the settlement:
www.epa.gov/enforcement/air/cases/1pd.html

More information about EPA’s Air Toxics National Enforcement Initiative:
www.epa.gov/compliance/data/planning/initiatives/2011airtoxics.html

Prior enforcement settlements related to industrial flaring:
BP North America:
www.epa.gov/compliance/resources/cases/civil/cuu/bp-whiting.html

Marathon Petroleum Company:
yosemite.epa.gov/opa/admpress.nsf/2467feca60368729852573590040443d/e841a98b6c6d1082806e7d00d6e547?OpenDocument&Highlight=2,Marathon

CountryMark Refining and Logistics:

Enforcement Alert: EPA Enforcement Targets Flaring Efficiency Violations (August 2012):
www.epa.gov/enforcement/air/documents/newsletters/flaringviolations.pdf