



Deer Park Community Advisory Council

Summary of March 28, 2011 Meeting

DPCAC Tours Shell Deer Park Site

Deer Park Community Advisory Council (DPCAC) members and several students from Deer Park High School and University of Houston – Clear Lake took an extensive tour of the 1500-acre Shell Deer Park chemical plant and refinery in late March. Site manager Mark Byrd welcomed the group and accompanied them on a bus tour to see the refinery established in 1929 and the chemical plant built in the 1940s. Refinery Production manager Brett Woltjen provided an overview before the tour began and served as the guide for the hour-long trip.

Members learned that Shell Deer Park refinery is the 11th largest out of 152 refineries in the United States and a joint venture with Mexico's Pemex. They saw equipment that removes sulfur from crude oil before it becomes gasoline and from kerosene before it is refined into jet fuel. They saw distillation towers that boil oil to separate it into different products and the "cat cracker" that uses a catalyst to break crude oil molecules into components such as gasoline blend stock and fuel gas. In the chemical plant, gas and liquid hydrocarbons are cracked to make olefins, which are further processed to become ethylene and propylene, which are building blocks for plastics. The plant also produces phenol, which is made into things like adhesives and plastic used for eyeglass lenses. The connections between the refinery and the chemical plant were clear as members saw benzene, 1, 3-butadiene, and toluene units in the chemical plant that begin as heavy gas oils or off gas streams from the refinery.

Members saw new storage tanks under construction with a roof style to minimize evaporation. Tanks are also being painted. They drove next to the coker visible on the skyline and under the conveyor belt that takes chunks of petroleum coke to a pile where Kinder Morgan loads it onto barges for shipment to a customer. In the distance, members could see the boat slip built in 1929 which now has 5 berths where 300 transfers are made each year by ship and barge. All crude oil arrives by marine vessel and 30% of Shell's products leave that way.

Responding to a request to see "smart technology," Shell's Barb Bessettehenderson brought an infrared camera and provided videos of leaks at non-Shell locations to show how the camera can detect hydrocarbon emissions. Though it cannot identify a specific chemical or its concentration, the camera has proven valuable for looking for leaks invisible to the naked eye, allowing leaks to be found more quickly and repairs to be made sooner. The camera has found leaks under insulation, at tank roofs flanges, and during maintenance and start-up activities.

As the bus drove around the facility, members saw few workers on duty until they toured the Refinery Operations Control Center and saw teams of operators running the plant by computer and a group of shift workers in a team meeting. They heard that reliability of operations improved when most refinery control rooms were centralized into the new high-tech center a few years ago. They were also relieved to know that, despite sophisticated computerization, operators still go into the field to check on things.

The evening ended with a review of emergency response capability and procedures for notifying the city during emergencies such as a fire or gas release and informing the community about noticeable events via a CAER Line (281-476-2237) message. Emergency Services Supervisor Angie Stack described the organization, which includes both paid staff and dozens of Shell volunteers who serve as firefighters, medical, rescue, marine oil spill responders, and so on.

At the Monday, April 25 meeting, DPCAC student members will share their observations on environmental issues, starting at 6:00 p.m. For details, contact Carl Bronold at 281-476-2941.