

February 1, 2002

Revision to 1/23/02 dated report which was electronically transmitted on 1/30/02 to A. A. Kozinski , Mike Hoffman, and Andrew Mackenzie from Tim T. Scruggs

With Copies to

Dennis Seith – Feedstocks Americas
Mike Graff – Polymers Americas
Rob Peabody – Aromatics Americas
Alvin Keith -Vice President, Downstream HSE
Jeanne Johns, Vice President, Chemicals HSE
Greg Williams – Feedstocks
Mike A. Todd – NAP
Pete Beronio – PTA Nap
Gregory P. Williams – Olefins
Jeff. J. Gaikema – Olefins
Rachel Clarke - Styrenics
Mark Finn - Downstream HSE Advisor
Lindsay Callard – Chemicals HSE Advisor
Stephen Morriss
Don Parus - BPSH
BPSH Extended Leadership Team
BPSH HSE Network

2001 BPSH ANNUAL HSE ASSURANCE REPORT

Following is the HSE Assurance Report for BP South Houston (BPSH) facilities. The report reviews operations at the Texas City Site refinery and chemical plant (TCS) and Chocolate Bayou Works (CBW), which includes the facilities at Chocolate Bayou, Cedar Bayou, Stratton Ridge, and Deer Park.

Delivery of the HSE policy, Expectations and Compliance with local/national Regulations

We are committed to implementation of the BP HSE policy and Getting HSE Right (GHSER) expectations including compliance with legal requirements. Annual self-assessments against the GHSER expectations are used to identify and align actions to drive HSE performance through improvements in HSE management systems and field practices. Results of the recent BPSH GHSER assessment are attached. Recently acquired Deer Park operations will be assessed in 2002, and their management systems incorporated into ongoing BPSH policy harmonization efforts.

Other site audit plans include internal and external audits of the Environmental Management System (EMS) to maintain certified ISO14001 standards, environmental media and topic specific external compliance review, external Process Safety Management (PSM) review, and line executed monthly field audits of HSE issues and practices. Site audit plans are pending harmonization between TCS and CBW, with plans to incorporate Deer Park into the audit system in 2003.

Risks to delivering the HSE Policy, Expectations and Compliance

BPSH has the potential for events which could result in multiple injuries, deaths, property damage, business interruptions, and damage to the BP brand reputation. Potential upset events include fires and explosions, and these events could result in flaring, spills to water or ground, and releases to air of hydrofluoric acid, hydrogen sulfide, benzene and other hydrocarbons. In addition to upset events, routine operations generate solid waste, wastewater, and greenhouse gas emissions such as carbon dioxide, all of which must be effectively managed.

Risks have been assessed through Process Safety Management (PSM) processes including internal and external audits, Process Hazard Analyses, Process Safety Committee reviews, and Process Safety Network participation. Environmental risks were further assessed in implementing ISO14001 certification requirements. Risks associated with routine operations, non-routine process upsets

including mechanical failures, and routine and non-routine maintenance activities were quantified based on potential impacts on public health, environment, legal, brand reputation, and economics.

Controls that are in place to manage these risks

Risks are managed and mitigated by sound implementation of PSM processes: Process Safety Committees, (including a new one initiated for CBW in 2001), Process Hazard Analyses, and Process Safety Networks which promote independent thought beyond structured checklists. Operational risks are managed by maintaining operating parameters within boundaries defined by operating envelopes. Emissions impacts are minimized by maintaining emissions control equipment through preventive maintenance. Emergency response resources are effectively maintained, including employee awareness and response training. Incidents are investigated to determine root causes, and corrective and preventive actions are identified and implemented.

Effectiveness of these controls is measured through the number of reportable incidents and quantities of reportable emissions.

Further controls that are needed and the plan to put them in place

Further controls, which have been identified, include the following:

- On emissions reduction, projects to reduce combustion emissions across the site have been identified for future implementation in accordance with NOx State Implementation Plan regulations. These projects are being coordinated regionally and sanctioned individually. Substantial capital has been committed for 2002, principally for the upgrade and replacement of process heaters at Texas City Refinery Pipestill 3-B.
- On benzene emissions at the Texas City refinery fence line, installation of additional controls is planned to reduce emissions from benzene storage tanks.
- On emissions from flaring, projects are underway across the site to evaluate options to minimize events
- Various projects are underway associated with Project Sunshine, the BP settlement with USEPA covering New Source Review issues. Projects include FCCU emissions controls and an enhanced fugitive leak detection and repair program.

Progress in implementing the Group Standards

BPSH has processes in place to ensure compliance with the Group Standard on Process Safety and Integrity Management. Regarding the Group Standard on Road Safety, existing policies include reporting of road incidents. BPSH implemented new safeguards in 2001 prohibiting cell phone usage while driving. Vehicle safety risk assessments have been conducted for operation of commercial vehicles and mobile equipment; operators of these vehicles have been identified and training has been conducted in accordance with the site safety training matrix. An implementation plan will be made in 2002 for providing defensive driver training to designated BP personnel by end of 2003.

Getting HSE Right External Audit

Chocolate Bayou Works (Chocolate Bayou, Cedar Bayou, Stratton Ridge) completed an external GHSER audit in 2000. The external GHSER audit targeted for the Texas City site in 2001 was deferred in recognition of the 80-90% overlap between GHSER, PSM, and ISO14001. This action was deemed prudent given the need to integrate all activities at BPSH under one management organization. We anticipate resolving this issue in 2002 and auditing in 2003 those specific GHSER expectations, which have not been included in PSM and ISO14001 external reviews.

Regulatory Notifications and Payment of Fines

The following actions were taken:

- The Texas Natural Resource Conservation Commission (TNRCC) issued a Notice of Enforcement (NOE) to the refinery for exceeding the Effects Screening Limit (ESL) for benzene at the fence line of the refinery. The ESL is a TNRCC guideline. The NOE includes a requirement to install fence line benzene monitors and pay a \$243,000 fine. Negotiations are underway with the TNRCC. The refinery has modeled the plant's benzene emissions and has determined 17 external floating roof tanks are the sources of the emissions. The tanks meet all regulatory and permit requirements, but the Refinery has offered to install covers on the 17 tanks and a project has been initiated to do so. The refinery has also agreed to install the benzene monitors, but plans to contest the fine since the ESL is only a guideline.
- The TNRCC issued an NOE and \$48,800 fine to the refinery for emissions associated with two upsets and for non-compliances identified during TNRCC inspections. The primary reason for the issuance of the NOE was because the TNRCC felt that the FCCU3 air emissions due to the line failure and a FCCU-1 opacity exceedence were preventable. The new upset/maintenance rules make it extremely difficult for any upset to be considered "not preventable" and therefore exempt from emission limits. The non-compliances identified during the audit were very minor. This issue is being negotiated along with the benzene issue above.
- The TNRCC has stated that they intend to issue CBW an NOE for flaring during the Olefins 2 startup. TNRCC has suggested that CBW has not done enough since the Olefins 2 shutdown in 2000 to reduce flaring. A meeting was held with the TNRCC to explain that a number of emission reduction steps have been completed in the short time since the last outage. The agency seemed satisfied but a formal response has not yet been received.
- The Texas General Land Office (GLO) fined the refinery \$32,000 for a 338 barrel crude spill to Galveston Bay from the Docks. The spill occurred when a loading arm broke during a storm after the ship, which was chartered to Valero, failed to properly tend mooring lines.
- The Environmental Protection Agency (EPA) fined CBW \$34,000 for two late reports of butadiene emissions from the Olefins unit. The issue is resolved.
- The GLO fined the refinery \$1,200 for a 25 gallon gasoline spill to Galveston Bay from the Docks. The spill occurred because of a hose leak. The issue is resolved.
- The TNRCC issued an NOV to CBW for not maintaining the temperature of a refrigerator storing wastewater samples at 4 degrees C. There was no penalty and the issue is resolved.
- The TNRCC issued a Notice of Violation (NOV) to CBW for failure to pass an Olefins No. 2 furnace Relative Accuracy Test Audit (RATA). The furnace RATA was performed again and the RATA passed. There was no penalty and the issue is resolved.
- Potential action is pending by TNRCC for three events when the refinery routed untreated wastewater to the bay via the emergency outfall. The events were due to excessive rainfall on 11/19/00 (13 inches in 3 days), 6/9-10/01 (Tropical Storm Allison) and 8/30-31/01 (13 inches in 5 days).
- TNRCC fence line monitoring in November 2001 identified excessive hydrogen sulfide emissions from Texas City industrial plants. BP has performed initial modeling in preparation for discussions with TNRCC. The modeling indicated that a number of sources both within and outside of BP facilities could be contributing to the emissions. Further discussions with TNRCC are anticipated.

US Compliance Assessment Project Key Findings

- Limited systematic incorporation of compliance requirements into management systems;
Legal compliance not embedded in ISO 14001 management systems; Due to increasing regulatory limitations and enforcement focus, we have placed compliance as our top HSE

priority. Compliance requirements are included in BPSH HSE management systems of policies, practices, and procedures, which are included by reference in our ISO14001 management systems. Policies are currently undergoing harmonization between TCS and CBW to drive consistent practices throughout BPSH.

- No assessment of resources needed to accomplish both legal compliance and Group objectives; Resources required to accomplish legal compliance objectives are identified and addressed in BPSH budgeting and capital planning as well as performance tracking. BPSH participated in the HSE Group Shared Resource project to develop a BP HSE Needs Assessment Tool.
- Learnings from Endicott (Alaska) case not clearly addressed. There has been significant interaction with BPXA. Learnings have been shared and emphasis incorporated into the BPSH EMS as appropriate.
- Contractor training and oversight related to environmental compliance not on par with safety oversight, and in some cases lacking completely; Contractor management issues are undergoing upgrades, driven in part by the transition to partnered Fluor Global Services management of contracted forces, and also to address specific ISO14001 audit findings.

Major and High Potential Incidents of 2001

The following events were previously reported and are posted on the MI and HP web pages:

- A major incident occurred 2/22/01 at No 2 Olefins unit when an external substation failure interrupted the power supply, resulting in damage to the unit furnace section.
- A high potential incident occurred 3/8/01 at FCCU3 when piping failure caused release of absorber off-gas vapors, which contained hydrogen sulfide. Eight fire fighters briefly lost consciousness in the course of responding to secure the unit.
- A high potential incident occurred 5/17/01 at Olefins No. 2 when an individual making a vendor delivery was injured when he became pinned between a light pole and the trailer that he was hand steering.
- A major incident occurred 8/8/01 at the DDU when a contractor was overcome with nitrogen, resulting in a fatality.
- A high potential incident occurred 11/11/01 at the Coker when foam over events caused coke drum relief valves to vent to atmosphere, resulting in community impact and potential drum damage.
- A high potential incident occurred 12/14/01 at the RHU when a BP instrument technician was exposed to an oxygen deficient environment.

Progress on meeting Group and Stream Targets

- ISO14001 Certification: TCS and CBW each achieved ISO14001 certification in 2001. Plans are in place to seek single certification as BPSH systems harmonization progresses. Strategies for integrating Deer Park operations into the BPSH ISO14001 certification process are being developed.
- Climate Change: Targets for monitoring of CO2 and reducing combustion emissions are on track.
- Environmental Reporting: The target to have an externally verified environmental performance report available on the Internet in 2001 was achieved. Further definition and standardization of expectations of content and approval of verifiers may drive a need for a 2002 update.

- Other: Progress on Group and Chemical Stream programs of water management and biodiversity remain in formative stages. A Biodiversity Action Plan is in place for CBW.

Implementing Getting HSE Right (GHSER)

The annual GHSER self-assessment for BPSH was completed in January 2002. Results of the assessment are attached. Previous annual assessments of CBW and TCS were reviewed. The rating scores reflect the status of the expectation across the current integrated BPSH site. The BPSH policy harmonization efforts are expected to strengthen many of the management systems reviewed. Additionally, HSE performance improvements are being driven through the newly established BPSH HSE Network, and are included in site Key Performance Indicators (KPIs) and employee gain sharing (VPP) targets and objectives.

Recently acquired Deer Park operations will be assessed in 2002, and their management systems incorporated into ongoing BPSH policy harmonization efforts.