

# *Texas City Site* *(TCS)*

*Texas City Refinery*  
*and*  
*Texas City Chemicals Site*

*gHSEr*

*2004 Assessment*

## **“TCS gHSEr Assessment 2004” Table of Contents**

Page 3	2004 gHSEr TCS Assessment Process Descriptions
Page 4	TCS significant gHSEr gaps
Page 7	2004 gHSEr Assessment Summary - TCS; Scoring description
Page 8	Element 1: Leadership and Accountability
Page 10	Element 2: Risk Assessment and Management
Page 11	Element 3: People, Training and Behaviors
Page 13	Element 4: Working with Contractors and Others
Page 15	Element 5: Facilities Design and Construction
Page 17	Element 6: Operations and Maintenance
Page 19	Element 7: Management of Change
Page 20	Element 8: Information and Documentation
Page 21	Element 9: Customers and Products
Page 22	Element 10: Community and Stakeholder Awareness
Page 23	Element 11: Crisis and Emergency Management
Page 24	Element 12: Incidents Analysis and Prevention
Page 26	Element 13: Assessment, Assurance and Improvement

## 2004 gHSEr TCS Assessment Process Description

A Team was convened from various areas of the Texas City Site. The team reviewed past gHSEr Assessment scores and existing work processes from both Texas City Refinery and Texas City Chemicals.


Significant gaps and best practices were identified where applicable and a score was determined.

Members included of the assessment Team included:

Name	Position
Rose M Villarreal	East Plant Env Representative
Kbee T Boyd	West Plant Env Representative
Jim Hearn	H&S Representative
Mark Garvin	Senior Safety Engineer
Johnny Washington	Site Maint Rep
Cliff Owens	A&A HSE Rep
Don Lane (facilitator)	Advisor Managements Systems and assurance

## TCS Significant gHSEr gaps

Note there were two expectations that fell into the "2" category, which is defined as "Poor (<60% compliant - well short of standards):

<b><i>Element 12: Incidents Analysis and Prevention</i></b>	
.Expectation	Team Comment
12.4 Information gathered from incident investigations is analyzed to identify and monitor trends and develop prevention programs	Trending and analysis is being done on ad-hoc basis; need to formalize. Prevention programs are not being generated (Numerous repeat near-miss incidents of mislabeled lab samples have created potentially severe safety issues. This should have triggered a more significant investigation
	
<b><i>Element 13: Assessment, Assurance and Improvement</i></b>	
.Expectation	Team Comment
13.2 The workforce is actively involved in periodic self-assessments of the effectiveness of processes and procedures to meet the HSE Expectations.	Need to ensure that the hourly workforce is engaged in periodic self-assessments and the preparation of processes and procedures.

Noted below are the gaps identified for each gHSEr Element during the 2004 gHSEr Assessment. "Significant" Gaps are identified in ***bold***. For further details as to which of the "expectations" the gaps address and additional comments, refer to the summary that follows gHSEr Summary below.

<b><i>Element 1: Leadership and Accountability</i></b>	
<i>People at all levels in the BP Amoco organization are responsible for leading and engaging the workforce in meeting our health, safety, technical integrity and environmental goals and objectives. Leaders will be held accountable for accomplishing this by demonstrating correct HSE behaviors, by clearly defining HSE roles and responsibilities, by providing needed resources, and by measuring, reviewing and continuously improving our HSE performance.</i>	
1.	Leadership involvement has improved but due to new superintendents in the tier 3 announcements environmental still lags safety.
2.	Local improvement noted. Consolidation of contractor will help communication.
3.	<b><i>HSE is imbedded in the business plans and not specific to HSE Action Plans as were done in the past - not sure that this is good or bad.. Potential for loss of focus on HSE??????</i></b>

4. Roles and responsibilities continue to be a challenge, especially environmental. TCS feels there is a need for additional "field/technical" HSE resources.
5. Safety is strong, the rest of the management systems; health, technical integrity, environmental, security are lagging in "strong" focus.

### **Element 2: Risk Assessment and Management**

*Management of risk is a continuous process and the cornerstone of all the HSE Elements. We will regularly identify the hazards and assess the risks associated with our activities. We will take appropriate action to manage the risks and hence prevent or reduce the impact of potential accidents or incidents.*

1. ***No formal system exists for identifying high level risks at the site level. JSAs are being done by both BP and contractors. They are not always being done but improvements are being seen.***
2. ***There is an opportunity for more formal risk assessments, especially during TAR planning and unscheduled outages.***
3. An opportunity exists to have more Health/Env risk assessments. Currently we mainly have a schedule for Safety risk assessments.

### **Element 3: People, Training and Behaviors**

*People's behaviour is critical to BP Amoco's success; therefore, our workforce will be carefully selected and trained, and their skills and competencies regularly assessed*

1. BP employees are good at encouraging but always not practicing, while contractors may be better at practicing and reluctant to encourage BP employees or other contractors. Environmental/health focus is lacking a bit.
2. HSE Councils are driving positive behaviors at the units. There is room for improvement for the HSE Councils to share details on what they are doing to address plant issues with people in the plant and other HSE Councils.
3. Contractor training, craft and HSE, should be evaluated for thoroughness and effectiveness.
4. Need to make sure all training (including craft training) considers health/environmental impacts, not just safety impacts.
5. Management of refresher training not always timely; effectiveness not evaluated.
6. Need to consider additional unit awareness on the Health Map and its purpose. (IH needs to drive this issue through/with the Health Map?) Need to find out the expectations for the use of the Health Map.
7. There has been a drop off in "promotion" of health and wellness at TCS.
8. Review of process safety overviews does not ensure the person understands the items/issues, especially for contractors.

### **Element 4: Working with Contractors and Others**

*Contractors, suppliers and others are key to our Group business performance and we will assess their capabilities and competencies to perform work on our behalf. We will work together with them to ensure our HSE Expectations are aligned. We will monitor contractors' and partners' performance and ensure our performance and ensure our procurement processes contain the rigor to deliver our Expectations.*

1. Criteria/contractor selection not communicated between Procurement and field; contractor evaluations inconsistently documented
2. Ensure new contractor evaluation process is fully implemented
3. Need to ensure that field activities/performance are monitored/ followed by the Job Reps
4. Contractor performance evaluations not consistently performed

### **Element 5: Facilities Design and Construction**

*New facilities and modifications to existing facilities will be designed, procured, constructed and commissioned to enable safe, secure, healthy and environmentally sound performance throughout their operational life, by using recognised standards, procedures and management systems.*

1. Still issues around multiple Engineering design standards.
2. No mechanisms in place for sharing learnings on projects.
3. Need more input from field operators knowledgeable in process.

### **Element 6: Operations and Maintenance**

*Facilities will be operated and maintained within the current design envelope to ensure safe, secure, healthy and environmentally sound performance.*

1. Inconsistent use of CVP for TAR and small projects; post start-up reviews not consistently performed.
2. Need increased discipline on disabling alarms and bypassing interlocks.
3. End-of-life/dismantling not considered or executed; decommissioning addressed in some cases.

**Element 7: Management of Change**

*All temporary and permanent changes to organization, personnel, systems, procedures, equipment, products, materials or substances will be evaluated and managed to ensure that health, safety and environmental risks arising from these changes remain at an acceptable level. We will comply with changes to laws and regulations and take account of new scientific evidence relating to HSE effects*

1. Small changes are not all being addressed by the MOC process. Issues may be due to lack of knowledge of what a "change" really is.
2. *Corrosion information is not always available for product changes and how those product changes effect equipment. Evidence of heavy corrosion was found at Pipestill 3B during a recent TAR. (sour crude???)*
3. Temporary changes sometimes not always identified, audited or reviewed

**Element 8: Information and Documentation**

*We will maintain accurate information on our operations and products. It will be held securely yet readily available.*

1. Gaps exist in records and P&ID management.
2. At times competing codes (ACEs, BP specs, OSHA) add confusion (Engr problem).
3. Some confidential medical records being faxed

**Element 9: Customers and Products**

*We will assess, manage and communicate the hazards associated with BP Amoco's products. We will communicate up to date information to help users and others handle our products in a safe and environmentally responsible manner.*

1. No significant gaps identified

**Element 10: Community and Stakeholder Awareness**

*We value the importance of community awareness and will actively engage in dialogue with various stakeholders to maintain public confidence in the integrity of our operations and products and our Commitment to HSE Performance.*

1. No significant gaps identified

**Element 11: Crisis and Emergency Management**


*Emergency management plans will be maintained to cover all of our facilities, locations and products. These plans will identify equipment, training and personnel necessary to protect the workforce, customers, public, environment and BP Amoco's reputation in the event of an incident.*

1. Emergency SPCC action plans may not be up-to-date, communicated and consistent between TCR and TOC.
2. Room for improvement in the frequency of unit and building evacuation drills
3. Lessons learned are shared in the ERT but not communicated site wide.

**Element 12: Incidents Analysis and Prevention**

*Incidents will be reported, investigated and analyzed to prevent recurrence and improve our performance. Our investigations will focus on root causes and / or system failures. Corrective actions and preventive measures will be utilized to reduce future injuries and losses*

1. *There is some concern that some units/areas may be understating incidents to make themselves look good/better.*
2. *There are concerns that some units/areas pick team leaders and investigation personnel from the area where the incident occurs which at times may bias the investigation".*
3. *Investigation action items not always closed out in a timely manner. They are getting better as focus has been shifted to management.*
4. *Trending and analysis is being done on ad-hoc basis; need to formalize. Prevention programs are not being generated (Numerous repeat near-miss incidents of mislabeled lab samples have created potentially severe safety issues. This should have triggered a more significant investigation)*

		
<b>Element 13:</b>		<b>Assessment, Assurance and</b>
<b>Improvement</b> <i>We will periodically assess the implementation of and compliance with these Expectations to assure ourselves and stakeholders that management processes are in place and working effectively. This will involve both internal self-assessments, and appropriate external assessments. We will use this information to improve our performance and processes</i>		
<ol style="list-style-type: none"> <li>1. KPIs need to be more effectively communicated throughout the site.</li> </ol>		
<ol style="list-style-type: none"> <li>2. KPIs need to be “engable and controllable” by the parties to whom the KPIs are assigned.</li> </ol>		
<ol style="list-style-type: none"> <li>3. <u><i>Need to ensure that the hourly workforce is engaged in periodic self-assessments and the preparation of processes and procedures.</i></u></li> </ol>		
<ol style="list-style-type: none"> <li>4. <u><i>There is no formal risk identification used by HSE to identify site risks at the site level. On the unit level the HSE Verification Team was created late 2004 to provide verification that we have good HSE policies and personnel know and follow these policies.</i></u></li> </ol>		
<ol style="list-style-type: none"> <li>5. <u><i>There is little review or use of the gHSEr audit/assessment results to drive goals. The gHSEr Assessment should be done very thoroughly and the results used to develop HSE action plans throughout the site.</i></u></li> </ol>		

2004 gHSER Assessment Summary - TCS

Element #	Exp #1	Exp #2	Exp #3	Exp #4	Exp #5	Exp #6	Exp #7	Exp #8	Exp #9	Exp #10	Exp #11	Average
1	3	3	4	3	3	4	3	3				3.3
2	3	4	3	4	3							3.4
3	3	3	3	3	3	3	4	3				3.1
4	3	3	3	3	4	3						3.2
5	4	4	3	3	4	4	4	4	4			3.8
6	3	3	4	4	4	3	4	3	3	3	4	3.5
7	4	4	4	4	3							3.4
8	3	4	3	4	4							3.6
9	4	3	3	3	4	5	4	4				3.9
10	4	4	4	4	5							4.0
11	3	4	4	3	3							3.4
12	3	4	4	4	3	3						3.2
13	3	4	3	3	3	3	3	3	4	4		3.2

Expectation Rating Matrix

Score	Systems Status	Awareness of employees	Compliance with process	Performance
3	Some informal systems/processes/procedures are in place. Requirements for expectation have been identified and defined, for example by gap analysis. A plan is in place to develop the required processes/procedures. Processes/procedures are largely in place and implemented. A plan to develop/implement the remaining processes/procedures required is in place.	Some awareness of requirements of procedures as they relate to meeting the requirements of the expectation. People directly involved with system development and implementation are aware of the requirements of the expectation. People's awareness of their roles and responsibilities with respect to the expectation is good.	Poor (<50%)	Well short of standards
4	Processes/procedures required to meet the expectation are in place. Plans for improvements have been developed and are being implemented.	People are fully aware of their roles and responsibilities with respect to the expectation.	Good (80-95%)	Does not meet the business/asset/facility standards.
5	Processes/procedures required to meet the expectation are in place. Plans for minor improvements are in place.	People are fully aware of their roles and responsibilities with respect to the expectation, and actively promote continuous improvement of performance throughout the business/asset/facility.	Good (90+%)	Almost meets the business/asset/facility standard. Some improvements are required. Meeting or exceeding targets. Minor improvement only is required.



### Element 1: Leadership and Accountability

*People at all levels in the BP Amoco organization are responsible for leading and engaging the workforce in meeting our health, safety, technical integrity and environmental goals and objectives. Leaders will be held accountable for accomplishing this by demonstrating correct HSE behaviors, by clearly defining HSE roles and responsibilities, by providing needed resources, and by measuring, reviewing and continuously improving our HSE performance.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	3	4	3	3	1.1 Leaders model positive HSE behaviors by personal example both on and off the job, and reinforce and reward positive behaviors. 1.2 Leaders engage in clear, two-way communication with employees, contractors and others on HSE issues.	Leadership involvement has improved but due to new superintendents in the tier 3 announcements environmental still lags safety. Local improvement noted. Consolidation of contractor will help communication.
TCS	3	3	3	3	1.3 Leaders integrate the HSE Expectations into business planning and decision making processes, ensuring that documented systems are in place to deliver these Expectations 1.4 Leaders establish clear HSE goals and objectives, roles and responsibilities, performance measures and allocate competent resources and, where necessary, specialist expertise	HSE is imbedded in the business plans and not specific to HSE Action Plans as were done in the past - not sure that this is good or bad.. Potential for loss of focus on HSE????? Roles and responsibilities continue to be a challenge, especially environmental. TCS feels there is a need for additional "field/technical" HSE resources.
TCS	3	3	3	3	1.5 HSE Management systems are developed, documented, implemented and supported throughout the organization. These address health, safety, technical integrity, environmental, security, product and operational risks in accordance with the appropriate Expectations 1.6 Leaders' HSE performance is assessed against their annual objectives, based on feedback from line management, peers and others in the Business Unit. 1.7 Leaders integrate Group HSE targets into their business activities.	Safety is strong, the rest of the management systems; health, technical integrity, environmental, security are lagging in "strong" focus.
TCS	4	4	4	3		

TCS	3	3	2	3	1.8 Leaders promote the sharing of HSE lessons learned inside and outside their business unit.	Traction has helped TCS in communication of incidents site wide. HSE Councils, Tool box talks and Shift Directors have also improved communication of lessons learned.
	Average	3.4	3.1	3.3		
<b>Significant Gaps</b>						
1. Leadership involvement has improved but due to new superintendents in the tier 3 announcements environmental still lags safety.						
2. Local improvement noted. Consolidation of contractor will help communication.						
3. <b>HSE is imbedded in the business plans and not specific to HSE Action Plans as were done in the past - not sure that this is good or bad., Potential for loss of focus on HSE?????</b>						
4. Roles and responsibilities continue to be a challenge, especially environmental. TCS feels there is a need for additional "field/ technical" HSE resources.						
5. Safety is strong, the rest of the management systems; health, technical integrity, environmental, security are lagging in "strong" focus.						

### Element 2: Risk Assessment and Management

*Management of risk is a continuous process and the cornerstone of all the HSE Elements. We will regularly identify the hazards and assess the risks associated with our activities. We will take appropriate action to manage the risks and hence prevent or reduce the impact of potential accidents or incidents.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	4	3	3	3	2.1 Leaders put into place and promote the use of processes to identify hazards associated with BP Amoco's activities, assess risks, control the hazards and manage the risks to acceptable levels. 2.2 Potential hazards and risks to personnel, facilities, the public, customers and the environment are assessed for existing operations, products, business developments, acquisitions, modifications, new projects, closures, divestments and decommissionings. 2.3 Assessed risks are addressed by levels of management appropriate to the nature and magnitude of the risk. Decisions are clearly documented and resulting actions implemented through local procedures.	No formal system exists for identifying high level risks at the site level. JSAs are being done by both BP and contractors. They are not always being done but improvements are being seen. Improvements have been seen in decommissioning of equipment at the site. Hazops and Phasers are done on new project.
TCS	3	3	4	4	2.4 Risk assessments and risk management/control measures are referenced in project approval documentation.	There is an opportunity for more formal risk assessments, especially during TAR planning and unscheduled outages.
TCS	4	4	4	4	2.5 Risk assessments are updated at specified intervals and as changes are planned.	Seen improvement in this area. Use of CVP continues to improve. TARs are being handled outside of CVP as they are being expensed. An opportunity exists to have more Health/Env risk assessments. Currently we mainly have a schedule for Safety risk assessments.
	<b>Average</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>		

#### Significant Gap

1. No formal system exists for identifying high level risks at the site level. JSAs are being done by both BP and contractors. They are not always being done but improvements are being seen.
2. There is an opportunity for more formal risk assessments, especially during TAR planning and unscheduled outages.
3. An opportunity exists to have more Health/Env risk assessments. Currently we mainly have a schedule for Safety risk assessments.

### Element 3: People, Training and Behaviors

<i>People's behaviour is critical to BP Amoco's success; therefore, our workforce will be carefully selected and trained, and their skills and competencies regularly assessed.</i>						
Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	3	3	2	3	3.1 Employees and contractors practice, encourage and reinforce safe, healthy and environmentally sound behaviors.	BP employees are good at encouraging but always not practicing, while contractors may be better at practicing and reluctant to encourage BP employees or other contractors. Environmental/health focus is lacking a bit.
TCS	3	3	3	3	3.2 HSE roles, responsibilities and accountabilities are developed and used to define individual performance targets. These are documented, and feedback on personal performance is provided.	<b>HSE Councils are driving positive behaviors at the units. There is room for improvement for the HSE Councils to share details on what they are doing to address plant issues with people in the plant and other HSE Councils.</b>
TCS	3	3	3	3	3.3 Recruitment, selection and placement processes ensure that personnel are qualified, competent and physically and mentally fit for their assigned tasks	Contractor training, craft and HSE, should be evaluated for thoroughness and effectiveness.
TCS	4	3	3	3	3.4 BP Amoco's workforce has the required skills and training to competently perform their tasks in a healthy, safe and environmentally sound manner. Training is evaluated to determine its effectiveness.	Need to make sure all training (including craft training) considers health/ environmental impacts, not just safety impacts. Management of refresher training not always timely; effectiveness not evaluated.
TCS	3	3	2	3	3.5 With employees' involvement, physical, chemical, biological, ergonomic and psychological health hazards are identified and the risks managed in the workplace.	ATW is applied in the field. And seems to be well implemented. Need to consider additional unit awareness on the Health Map and its purpose. (IH needs to drive this issue through/ with the Health Map?) Need to find out the expectations for the use of the Health Map.
TCS	3	3	3	3	3.6 Each worksite has access to an appropriate level of medical support and to resources / facilities that promote health and wellness.	There has been a drop off in "promotion" of health and wellness at TCS.

TCS	4	3	4	4	3.7 A program is in place to ensure that the performance of our workforce and others on our premises is not impaired by drugs or alcohol.	
TCS	3	3	3	3	3.8 New or transferred employees, contractors and other visiting personnel undergo appropriate site orientation / induction training which covers HSE rules and emergency procedures.	Review of process safety overviews does not ensure the person understands the items/issues, especially for contractors.
	<b>average</b>	<b>3</b>	<b>2.9</b>	<b>3.1</b>		

**Significant Gap**

1. BP employees are good at encouraging but always not practicing, while contractors may be better at practicing and reluctant to encourage BP employees or other contractors. Environmental/health focus is lacking a bit.
2. **HSE Councils are driving positive behaviors at the units. There is room for improvement for the HSE Councils to share details on what they are doing to address plant issues with people in the plant and other HSE Councils.**
3. Contractor training, craft and HSE, should be evaluated for thoroughness and effectiveness.
4. Need to make sure all training (including craft training) considers health/ environmental impacts, not just safety impacts.
5. Management of refresher training not always timely; effectiveness not evaluated.
6. Need to consider additional unit awareness on the Health Map and its purpose. (IH needs to drive this issue through/ with the Health Map?) *Need to find out the expectations for the use of the Health Map.*
7. There has been a drop off in "promotion" of health and wellness at TCS.
8. Review of process safety overviews does not ensure the person understands the items/issues, especially for contractors.

**Element 4: Working with Contractors and Others**

*Contractors, suppliers and others are key to our Group business performance and we will assess their capabilities and competencies to perform work on our behalf. We will work together with them to ensure our HSE Expectations are aligned. We will monitor contractors' and partners' performance and ensure our performance and ensure our procurement processes contain the rigor to deliver our Expectations.*

Site	2000 Score	2001 BPS H Score	2002 Score	2004 Score	Expectation	Comments
TCS	4	4	3	3	4.1 Pre-qualification, selection and retention criteria are established for work performed by contractors, suppliers and others, including a system for assuring their compliance.	The contractor pre-qualification process is being changed to ensure compliance. Criteria/ contractor selection not communicated between Procurement and field; contractor evaluations inconsistently documented Ensure new contractor evaluation process is fully implemented
TCS	4	3	3	3	4.2 Hazards and risks associated with contractor and procurement activities in our businesses are identified, managed and communicated.,	
TCS		2	3	3	4.3 Interfaces between BP Amoco and suppliers of services and products are identified and effectively managed.	Need to ensure that field activities/ performance are monitored/ followed by the Job Reps.
TCS	3	3	3	3	4.4 Clear deliverables and performance standards are agreed to and systems are put in place to assure HSE and technical compliance.	Contractor performance evaluations not consistently performed
TCS	4	4	4	4	4.5 Purchased products and services are, where possible, verified as meeting national / international health, safety and environmental standards.	

TCS	1	3	3	3	4.6 Joint venture and alliance partners have HSE management systems that are aligned with those of BP Amoco, meet legal compliance requirements and satisfy the Group's Expectations and targets.	
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	average	3.2	3.2	3.2		
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**Significant Gap**

1. Criteria/contractor selection not communicated between Procurement and field; contractor evaluations inconsistently documented
2. Ensure new contractor evaluation process is fully implemented
3. Need to ensure that field activities/ performance are monitored/ followed by the Job Reps
4. Contractor performance evaluations not consistently performed

### Element 5: Facilities Design and Construction

<i>New facilities and modifications to existing facilities will be designed, procured, constructed and commissioned to enable safe, secure, healthy and environmentally sound performance throughout their operational life, by using recognised standards, procedures and management systems.</i>						
Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	3	4	4	4	5.1 Baseline technical, environmental and health data are collected before the development of any new operation, facility or major modification.	
TCS	3	3	4	4	5.2 Facilities are designed and constructed using technology that balances commercial risks and financial benefits to manage technical risk and minimize or eliminate emissions, discharges, impacts on biodiversity and other environmental impacts.	All major projects are considering environmental issues.
TCS	4	3	3	3	5.3 Project management systems and procedures addressing technical integrity and HSE accountabilities are documented and well understood. Design, procurement and construction standards are formally approved by the designated technical / engineering authority. Formal design review, verification and validation studies are carried out based on risk assessment.	Still issues around multiple Engineering design standards.
TCS	3	3	3	3	5.4 Operational, maintenance and HSE expertise are integrated early in the project / design stage. Experience from previous projects and current operations is applied	No mechanisms in place for sharing learnings on projects. Need more input from field operators knowledgeable in process.
TCS	4	4	4	4	5.5 Potential hazards are identified and HSE risks assessed using appropriate risk assessment tools (e.g. quantified risk assessments, HAZOPS, and HSE reviews) at specific stages of a project from concept through to start-up, and risks are mitigated through risk management techniques.	
TCS	3	3	4	4	5.6 Deviations from design standards are identified and managed at an appropriate level, with the reasons documented and retained.	Deviations documented in the MOC process.
TCS	4	4	4	4	5.7 Local regulatory requirements are met or exceeded. Where these are absent or inadequate, standards are set that protect people and the environment.	



TCS	4	4	4	4	4	5.8 Quality assurance and inspection systems are in place to ensure that facilities meet design and procurement specifications and that construction is in accordance with approved standards.	
TCS	4	4	4	4	4	5.9 Documented pre-startup reviews are carried out for all newly installed or modified equipment to confirm that construction is in accordance with design, all required verification testing is complete and acceptable, and all recommendations/deviations are closed and approved by the designated technical authority.	
	<b>average</b>	<b>3.6</b>	<b>3.6</b>	<b>3.8</b>	<b>3.8</b>		

<b>Significant Gap</b>	
1.	Still issues around multiple Engineering design standards.
2.	No mechanisms in place for sharing learnings on projects.
3.	Need more input from field operators knowledgeable in process.

### **Element 6: Operations and Maintenance**

<i>Facilities will be operated and maintained within the current design envelope to ensure safe, secure, healthy and environmentally sound performance.</i>						
Site	2000 Score	2001 BPS H Score	2002 Score	2004 Score	Expectation	Comments
TCS	3	3	3	3	6.1 Post-startup reviews are carried out for all newly installed or modified equipment to confirm that construction is in accordance with design, all required verification testing is complete and acceptable, and all recommendations / deviations are closed and approved by the designated technical authority.	Inconsistent use of CVP for TAR and small projects; post start-up reviews not consistently performed.
TCS	3	3	4	3	6.2 Applicable regulatory requirements are met or exceeded and operational / technical / mechanical integrity is maintained by use of clearly defined and documented operational, maintenance, inspection and corrosion control systems.	Have increased CUI inspections at the site.
TCS	3	4	4	4	6.3 Key operating parameters are established and regularly monitored. The workforce understands their roles and responsibilities to maintain operations within these parameters	Implementation of the operating envelopes has helped a lot.
TCS	4	4	3	4	6.4 Clearly defined startup, operating, maintenance and shutdown procedures are in place with designated authorities identified (e.g. permit to work, hand-over, equipment and process isolation, etc).	Additional focus after the UU4 incident has helped areas see the importance of updated SOPs.
TCS	3	3	4	4	6.5 Equipment that has been out of service for maintenance or modification is subject to documented inspection and testing prior to use.	
TCS	3	3	3	3	6.6 Reliability and availability of protective systems are maintained by appropriate testing and maintenance programs, including management of temporary disarming or deactivation.	Need increased discipline on disabling alarms and bypassing interlocks.
TCS	4	4	4	4	6.7 Risks introduced by simultaneous operations are assessed and managed.	
TCS	3	3	2	4	6.8 HSE impacts associated with waste, emissions, noise, and energy use are monitored, and minimized.	
TCS	3	3	3	3	6.9 Comprehensive waste management programs are in place to ensure that wastes are minimized, re-used, recycled, or properly disposed of.	Improvements have been seen in waste minimization throughout the site.

TCS	2	3	3	3	6.10 Decommissioning, remediation and restoration plans are established using risk-based studies for end of life equipment / facilities	End-of-life/ dismantling, not considered or executed; decommissioning addressed in some cases.
TCS	3	4	4	4	6.11 A quality assurance program exists to ensure that equipment replacement or modification maintains operations integrity.	
		3.4	3.4	3.5		

**Significant Gap**

1. Inconsistent use of CVP for TAR and small projects; post start-up reviews not consistently performed.
2. Need increased discipline on disabling alarms and bypassing interlocks.
3. End-of-life/ dismantling not considered or executed; decommissioning addressed in some cases.

**Element 7: Management of Change**

*All temporary and permanent changes to organization, personnel, systems, procedures, equipment, products, materials or substances will be evaluated and managed to ensure that health, safety and environmental risks arising from these changes remain at an acceptable level. We will comply with changes to laws and regulations and take account of new scientific evidence relating to HSE effects.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	4	3	3	4	7.1 The health, safety, security, environmental, technical and other impacts of temporary and permanent changes are formally assessed, managed, documented and approved.	Small changes are not all being addressed by the MOC process. Issues may be due to lack of knowledge of what a "change" really is.
TCS	5	4	4	4	7.2 Changes in legal and regulatory requirements, technical codes, and knowledge of health and environmental effects, are tracked and appropriate changes implemented.	Knowledge of environmental awareness has shown improvement.
TCS	3	3	3	4	7.3 Effects of change on the workforce/organization, including training requirements, are assessed and managed.	
TCS		4	4		7.4 The impact on product quality of changes in manufacturing processes is assessed, associated hazards are evaluated and risks are controlled.	Corrosion information is not always available for product changes and how those product changes affect equipment. Evidence of heavy corrosion was found at Pipestill 3B during a recent IAR. (sour crude???)
TCS	4	3	3	2	7.5 The original scope and duration of temporary changes are not exceeded without review and approval.	Temporary changes sometimes not always identified, audited or reviewed
	4	3.4	3.4	3		
				3.4		

**Significant Gap**

1. Small changes are not all being addressed by the MOC process. Issues may be due to lack of knowledge of what a "change" really is.
2. Corrosion information is not always available for product changes and how those product changes affect equipment. Evidence of heavy corrosion was found at Pipestill 3B during a recent IAR. (sour crude???)
3. Temporary changes sometimes not always identified, audited or reviewed

**Element 8: Information and Documentation**

*We will maintain accurate information on our operations and products. It will be held securely yet readily available.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	3	3	3	3	8.1 A system is in place to securely manage drawings, design data and other documentation, including definition of responsibilities for maintaining this information.	Gaps exist in records and P&ID management.
TCS	4	4	4	4	8.2 Applicable regulations, permits, codes, standards and practices are identified. The resultant operating requirements are documented and communicated to the workforce.	At times competing codes (ACEs, BP specs, OSHA) add confusion (Engr problem).
TCS	3	3	3	3	8.3 Pertinent records are maintained, available and retained as necessary. Obsolete documentation is identified and removed from circulation.	
TCS	4	4	4	4	8.4 Scope and format of technical documentation will be agreed for each facility and will form part of the design input for new facilities and modifications.	Multiple specifications in use (Engr issue)
TCS	5	4	4	4	8.5 Employee health, medical and occupational exposure records are maintained with appropriate confidentiality and retained as necessary	Some confidential medical records being faxed
	average	3.6	3.6	3.6		

Significant Gap	
1.	Gaps exist in records and P&ID management.
2.	At times competing codes (ACEs, BP specs, OSHA) add confusion (Engr problem).
3.	Some confidential medical records being faxed

### Element 9: Customers and Products

*We will assess, manage and communicate the hazards associated with BP Amoco's products. We will communicate up to date information to help users and others handle our products in a safe and environmentally responsible manner.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	NA	4	4	4	9.1 Assessments are conducted for new products prior to marketing or distribution, to identify health, safety and environmental hazards and risks associated with normal use and foreseeable misuse.	Site works with PS&T to implement new products
TCS	NA	3	3	3	9.2 Periodic reassessments are conducted for all manufactured and re-branded products and intermediate streams. This includes a review of adverse effects reported or experienced by those handling these products.	
TCS	NA	3	3	3	9.3 New uses or markets for existing products are evaluated to ensure that health, safety and environmental hazards and risks are identified and addressed.	
TCS	NA	3	4	3	9.4 Records of assessment, background information and conclusions are kept up-to-date throughout the product's life and retained as necessary.	
TCS	4	4	4	4	9.5 Up to date information on health, safety and environmental hazards and risks relating to the use, storage, handling, transport and disposal of our products is available to the workforce, customers and others. Material Safety Data Sheets (MSDS), labels and other information are developed and issued to handlers and users in accordance with legislative and customer requirements, and as information changes.	
TCS	4	5	5	5	9.6 A system exists to collect and review adverse effects reported or experienced by those handling our products. Causes for concern are identified and actions are taken.	
TCS	NA	4	4	4	9.7 An effective recall system exists for products where a defect could give rise to health, safety or environmental hazards.	
TCS	4	4	4	4	9.8 A system is in place to respond on a 24-hour basis to emergency requests for product health, safety and environmental information.	
		3.8	3.9	3.8		

### Significant Gap

No significant gaps identified

**Element 10: Community and Stakeholder Awareness**

*We value the importance of community awareness and will actively engage in dialogue with various stakeholders to maintain public confidence in the integrity of our operations and products and our Commitment to HSE Performance.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	4	4	4	4	10.1 Open and proactive communications are established and maintained with employees, contractors, regulatory agencies, public organizations and communities regarding the HSE aspects of our business	Active participation in CAP organizations and meetings. Information on External BP
TCS	4	4	4	4	10.2 BP Amoco recognizes and responds to government and community HSE related E.xpectations and concerns about our operations and our products.	
TCS	5	4	4	4	10.3 HSE impacts of new business development on local communities are openly assessed, communicated, and integrated into the business case.	
TCS	4	3	3	4	10.4 HSE impacts of any divestment or decommissioning on existing operations, neighbors or local community (originally identified during the new business development stage) are reviewed, communicated and managed.	
TCS	4	3	5	4	10.5 Major business operations periodically issue and externally verified statement relating to HSE performance and programs.	BPSH externally verified environmental statement issued; health and safety statement.
		3.6	4.0	4.0		

**Significant Gap**

No significant gaps identified

**Element 11: Crisis and Emergency Management**

*Emergency management plans will be maintained to cover all of our facilities, locations and products. These plans will identify equipment, training and personnel necessary to protect the workforce, customers, public, environment and BP Amoco's reputation in the event of an incident.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS	4	4	3	3	11.1 Emergency management plans are based on the risks that potentially impact the business. These plans are documented, accessible, clearly communicated and align to the BP Amoco Group's emergency management system.	Emergency SPOC action plans may not be up-to-date, communicated and consistent between TCR and TOC.
TCS	5	4	4	4	11.2 Equipment, facilities and personnel needed for emergency response are identified, tested and available.	
TCS		3	3		11.3 Personnel are trained and understand emergency plans, their roles and responsibilities, and the use of crisis management tools and resources.	
TCS	3	3	3	4	11.4 Drills and exercises are conducted to assess and improve emergency response / crisis management capabilities, including liaison with and involvement of external organizations.	IMT drills have been conducted on a routine basis. Room for improvement in the frequency of unit and building evacuation drills
TCS	5	3	3	3	11.5 Periodic updates of plans and training are used to incorporate lessons learned from previous incidents and exercises.	Lessons learned are shared in the ERT but not communicated site wide.
		3.4	3.2	3.4		

**Significant Gap**

1. Emergency SPOC action plans may not be up-to-date, communicated and consistent between TCR and TOC.
2. Room for improvement in the frequency of unit and building evacuation drills
3. Lessons learned are shared in the ERT but not communicated site wide.



**Element 12: Incidents Analysis and Prevention**

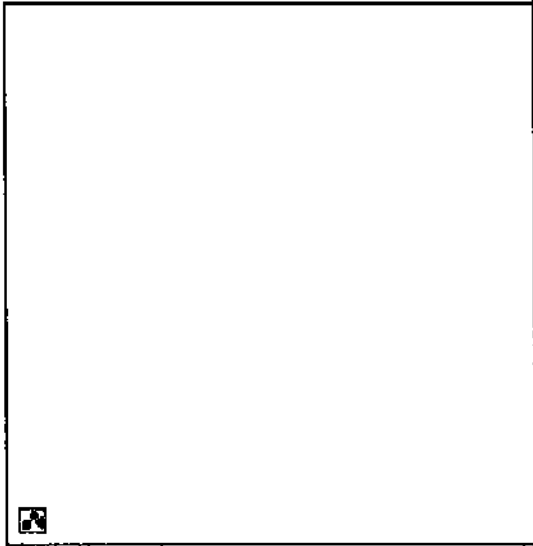
*Incidents will be reported, investigated and analyzed to prevent recurrence and improve our performance. Our investigations will focus on root causes and / or system failures. Corrective actions and preventive measures will be utilized to reduce future injuries and losses.*

Site	2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS		3	3		12.1 All health, safety, technical integrity, security and environmental incidents, including near misses, are openly reported, investigated, analyzed and documented.	There has been a lot of improvement in reporting safety and environmental issues in Traction. There are also concerns that some units/ areas pick team leaders and investigation personnel from the area where the incident occurs without management approval as required by policy. This poses a potential "conflict of interest".
TCS	3	5	4	3	12.2 Major incidents are investigated by a multi-function / level team with participation and leadership from outside the Business Unit.	
TCS	5	4	4	4	12.3 Incident investigations, including identification of root causes and preventive actions, are documented and closed-out.	Investigation action items not always closed out in a timely manner. They are getting better as focus has been shifted to management.
TCS	4	2	2	4	12.4 Information gathered from incident investigations is analyzed to identify and monitor trends and develop prevention programs.	Trending and analysis is being done on ad-hoc basis; need to formalize. Prevention programs are not being generated (Numerous repeat near-miss incidents of mislabeled lab samples have created potentially severe safety issues. This should have triggered a more significant investigation)
TCS	1	3	3	2	12.5 Lessons learned from investigations are shared across BP Amoco and personnel take appropriate action upon receipt of such information.	
TCS	3	3	3	3	12.6 Mutual sharing of lessons learned and good practice is encouraged within the wider energy and chemical industry.	
		3.3	3.2	3.2		

**Significant Gap**

1. There is some concern that some units/ areas may be understating incidents to make themselves look good/better.
2. There are also concerns that some units/ areas pick team leaders and investigation personnel from the area where the incident occurs without management

<p>approval. This poses a potential "conflict of interest".</p>
<p>3. Investigation action items not always closed out in timely manner.</p>
<p>4. <b>Trending and analysis is being done on ad-hoc basis; need to formalize. Prevention programs are not being generated (Numerous repeat near-miss incidents of mislabeled lab samples have created potentially severe safety issues. This should have triggered a more significant investigation)</b></p>



**Element 13: Assessment, Assurance and Improvement**

*We will periodically assess the implementation of and compliance with these Expectations to assure ourselves and stakeholders that management processes are in place and working effectively. This will involve both internal self-assessments, and appropriate external assessments. We will use this information to improve our performance and processes.*

Site		2000 Score	2001 BPSH Score	2002 Score	2004 Score	Expectation	Comments
TCS			3	3	3	13.1 HSE performance indicators (both inputs and outcomes) are established, communicated and understood throughout the organization.	KPIs need to be more effectively communicated throughout the site. KPIs need to be "engable and controllable" by the parties to whom the KPIs are assigned.
TCS		3	3	2	2	13.2 The workforce is actively involved in periodic self-assessments of the effectiveness of processes and procedures to meet the HSE Expectations.	Need to ensure that the hourly workforce is engaged in periodic self-assessments and the preparation of processes and procedures.

TCS	3	3	4	3	13.3 HSE performance indicators are regularly used to determine when and what management system changes are necessary. When changes occur in one HSE Element the impact on the entire management system is evaluated.	PULSE/CATS implemented at TCS.
TCS	3	4	3	3	13.4 A system exists to continually improve HSE behaviors through observation, recording and coaching.	There is no formal risk identification used by HSE to identify site risks at the site level. On the unit level the HSE Verification Team was created late 2004 to provide verification that we have good HSE policies and personnel know and follow these policies.
TCS		3	3	3	13.5 A documented, risk-based audit program exists to periodically evaluate progress towards HSE targets, regulatory compliance, and the effectiveness of the Business Unit management system(s).	
TCS	2	3	3	3	13.6 The Business Unit, in co-operation with the audit team, plans audits, which are objective and systematic. These are documented and conducted using expertise from inside and outside the unit.	
TCS	4	3	3	3	13.7 Findings from learning processes (e.g. audits, incident investigation, near misses, HAZOPS, etc.) are prioritized, tracked and used to systematically improve the HSE management system.	Action Tracking Data Base and Tracdon are used to follow up on all HSE action items.
TCS		3	3	3	13.8 The Business Unit leadership team reviews the management system to ensure it is continually delivering consistent, desired performance. Based on the review, new risk-based targets are considered and established wherever necessary.	There is little review or use of the gHSEr audit/assessment Assessment should be done very thoroughly and the results used to develop HSE action plans throughout the site.
TCS	2	4	4	4	13.9 Business Units report HSE performance data, as part of the Group's HSE Reporting Requirements.	
TCS	3	3	4	4	13.10 A process is in place whereby assurance is regularly provided to the Chief Executive Officer demonstrating effective implementation of the BP Amoco HSE Commitment and Expectations. Annual self-assessments against these Expectations are carried out by each Business Unit, along with external audits at least every three years.	
		3.2	3.2			

**Significant Gap**

1. KPIs need to be more effectively communicated throughout the site.
2. KPIs need to be "engable and controllable" by the parties to whom the KPIs are assigned.
3. Need to ensure that the hourly workforce is engaged in the preparation of processes and procedures.
4. There is no formal risk identification used by HSE to identify site risks at the site level. On the unit level the HSE Verification Team was created late 2004 to provide verification that we have good HSE policies and personnel know and follow these policies.
5. There is little review or use of the gHSEr audit/assessment results to drive goals. The gHSEr Assessment should be done very thoroughly and the results used to develop HSE action plans throughout the site.