

# Cambridge Center for Behavioral Studies Safety Accreditation Site Visit Report

**To:**  
**Monica Piper**  
**Safety Manager**  
**Bay Industrial Services**

**Marathon Petroleum Co. LLC**  
**Illinois Refining Division**  
**Robinson, IL**



**From:**  
**Accreditation Commission**  
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**Cambridge Center for Behavioral Studies  
Safety Accreditation Site Visit Report  
Bay Industrial Services**

Site: Marathon Petroleum Company, Illinois Refining Division  
100 Marathon Avenue  
Robinson, IL 62454

Date of Visit: July 28, 2015

Reviewers: Dwight Harshbarger, PhD (Chairperson of Team) & Don Kernan  
Commission on Behavioral Safety, Cambridge Center for Behavioral  
Studies

Overview: Bay Industrial Services, along with Marathon Petroleum Company, Illinois Refining Division, (hereafter IRD) uses a behavioral safety process as part of a comprehensive safety program at the Robinson IL refinery. The Marathon IRD workforce initiated this process in 1996 and it has earned accreditation and re-accreditation by the CCBS since 2005. The IRD program also extends to multiple contractors who have adopted the PBBS process with their workforces operating in the refinery. Bay Industrial Services is one of those contractors. During the week of 7/27/15 to 8/1/15 the CCBS review team examined eleven (11) PBBS processes within the IRD. These included the Marathon refinery PBBS system and Bay Industrial Services.

A critical feature of the IRD / contractors PBBS process is shared elements of the system used by all parties: all participating units seeking CCBS accreditation during this review use the same observation card format which flows into IRD reporting system. All observers are encouraged to make observations on any workers within the refinery (not just employees in their business unit), and all data stream to a central data-base allowing examination of interlocking elements of the IRD workforce and contractors. The CCBS review team interviewed managers and workers from units applying for re-accreditation or accreditation, including Bay Industrial Services.

The review team critically assessed the elements of the PBBS system and its coordination during six (6) days on site. The review team scheduled focused interviews with managers of each unit's PBBS team and randomly selected workers to assess implementation of the PBBS system. The CCBS team examined outcomes achieved by each unit applying for accreditation as presented in their application to the CCBS. In many cases additional analyses were generated during the site review and these are added to the applications. Since all units' behavioral observation data are streamed through a central data-base, Tim Meier, CAP Coordinator (CAP = Contractor Advisory Panel) was present during portions of all the interviews to query the data-base and provide reports as requested by the CCBS reviewers. These queries often revealed how the various contractors, such as Bay Industrial Services, and Marathon IRD personnel observed each other within the refinery operations. Thus input on each company seeking accreditation was gathered both during the focused interviews of each applicant's personnel and in the review of other applicant's observation data.

It is noteworthy that our reviews revealed the effective operation of the PBBS CAP (contractor advisory panel) that coordinates the PBBS program elements across 13 contractors (ten of which applied for CCBS accreditation during this review). The IRD system is essential for the continued development of the contractor workforce. Also noted was IRD's utilization of PEC Premier, a third-party safety auditor exclusive to the gas and petroleum industry. PEC reviews all current and potential contractors in order to maintain required quality standards.

### Schedule of Events

Day/Date/Time	Meeting group	Location
Monday 7/27/2015 7:00 - Noon	Marathon IRD PBBS system. Interview PBBS Coordinator Eric Nickless	Safety Building Conference room
Monday 7/27/2015 1:00 - 4:30	SESCO Construction Co PBBS system. Interview PBBS Coordinator Nick Martin Safety Manager & Co-Owner Michele Brown	Safety Building Conference room
Tuesday 7/28/2015 7:00 am-Noon	Bay Industrial Services Co. PBBS system. Interview John Marts, Safety Manager	Safety Building Conference room
Tuesday 7/28/2015 1:00 - 4:30	Brand Energy & Infrastructure Services, Inc. PBBS system. Interview Aaron Ikemire, Safety Manager	Safety Building Conference room
Wednesday 7/29/2015 7:00am – Noon	SDR Coatings, Co. PBBS program. Interview Tanner Holt Safety Mgr	Safety Building Conference room
Wednesday 7/29/2015 1:00- 4:30	Bay Industrial Services PBBS program. Interview John Marts Safety Manager	Safety Building Conference room
Thursday 7/29/2015 7:00am – Noon	Bay Industrial Safety Services PBBS System. Interview Monica Piper, BBS Coordinator, Lisa McCord Office	Safety Building Conference room
Thursday 7/29/2015 1:00 – 4:30	Morris Construction Company PBBS System Chad Tislow Safety Manager	Safety Building Conference room
Friday 7/30/2015 7:00am – Noon	Stewart Security Patrol Inc PBBS system. Interview Debbie Parker Coordinator	Safety Building Conference room
Friday 7/30/2015 1:00 – 4:30	Mistras Inspection Company PBBS System Eric Martinovich Coordinator	Safety Building Conference room
Saturday 7am to Noon	Lytle Electric PBBS Program Eric Biernbaum Safety Manager	Safety Building Conference room

## Summary

Bay Industrial Services Company, Inc.  
Marathon Petroleum Company, Illinois Refinery Division Reaccreditation

The CCBS review team reviewed on-site operations to validate data and confirm that program descriptions as reported in the application are accurate. We find that the program operates as described. Further, the program meets the 3 basic criteria of the Commission on Behavioral Applications for PBBS Accreditation: 1) it is a behavioral program, 2) the PBBS program has had a visible impact on safety performance, and 3) the program has produced sustained positive performance over 3 or more years.

History: 2008 – Marathon invited Bay Industrial Safety Services to join their Behavioral Based Safety Contractor Advisory Panel (BBSCAP) with the intent to get all in house contractors on board with what they had already established within the IRD (Illinois Refining Division). A facilitator for each company continues to attend a monthly meeting with the Marathon BBS Contractor Coordinator. Each group discussed where they were at within their own companies as far as Steering Committees and goals.

2008- Bay Industrial supplied an employee for Data entry during Outages and Turnaround activities. The selected employee entered a majority of the overall observations during the outage. The selected employee continues to provide data entry for all outages and Turnaround activities.

2009/2010 Bay attended the Behavioral Safety Now conference. Bay Industrial Safety Services trained all employees to be observers. Bay Industrial Safety Services started the VPP application process but because of a freeze on applications due to the government sequestration Bay had to postpone the process.

2010-2011 A Bay Industrial employee representative assisted Marathon with the MSAT extraction unit project. This employee coordinated all Behavioral Based Safety duties. These duties included leading a project Steering Committee weekly, Bay trained 1,717 employees in the Marathon Behavioral Based Safety process, supplied a BBS topic weekly for the entire worksite, and followed up with coaching guides as well as any outstanding concerns.

2011- Bay Industrial Safety Services trained all employees within Bay to be dedicated observers.

2012- Bay Industrial Safety Services applied for Accreditation through the Cambridge Center for Behavioral Studies and was granted Accreditation. Recommendations from the accreditation helped Bay focus on comments and generating useful information. Bay also put an emphasis on the importance of positive reinforcement and how to approach another employee when giving feedback; observers show concern for others and give constructive feedback in a positive manner.

2013- During Turnaround activities as well as any outages, Bay successfully continued efforts in raising awareness across all workgroups. Bay Industrial Safety employees strive to maintain our overall goal of at least 40% participation within the PBBS process. Bay Industrial Safety Services employees are trained on the life critical procedures within the IRD and are encouraged to stop any unsafe acts involving life critical at all times. Bay Industrial Safety Services observes constantly on the job and if a life critical is encountered it is handled appropriately.

2013-Bay Industrial Safety Services co-organized the Illinois Refining Divisions first Behavioral Based Safety Conference. IRD invited several different entities to the conference, including sister refineries, Marathon Pipeline, Contractor workgroups associated with Marathon and local Municipal businesses. The conference had 400 attendees.

2013- Bay Industrial Safety Services Coordinator along with the Marathon BBS Coordinator began to bring the BBS CAP group and the Marathon BBS Steering Committee together as one. In December of 2013 the first BBS Summit was held – a three day brainstorming session with the two groups discussing the path forward.

2014- Bay Industrial Safety was actively involved in two Turnarounds with the CAT/ALKY employing over 180 employees all trained as observers in the BBS process. Bay Industrial Safety not only enhanced individual awareness but was actively involved in heightening safety awareness of crews from outside of the company. During the Turnaround, Bay Safety employees and their dedication to the process led to the discovery of several permit issues, PPE issues and Fall Protection issues that were addressed in a positive productive manner.

2014- Contractor workgroups and the Marathon Steering Committee were trained by a Bay third-party on presentation skills and the new observation form. The training consisted of how to present the new information on the 2014 observation form to individual workgroups in Bay. It was an opportunity to work on presentation skills and gave more background information on Behavioral Science to committee members, building an understanding of the concepts behind Behavior Based Safety.

2014- Bay Industrial Safety Services provided a BBS Coordinator on the night shift to assist Marathons BBS process. The selected employee watched over Turnaround activities and was in charge of leading the night shift. The Coordinator corresponded with the plant Safety Department if issues needed additional resources.

2014- Bay Industrial Safety Services co-organized the second Illinois Refining Division Behavioral Based Safety Conference. The conference invited over 300 different entities to attend. The attendees included Marathon employees, contractor workgroups associated with Marathon, and local businesses. The conference attendance was close to 500 people.

2014- Bay continued to enhance the BBS training to create employees that are not afraid to speak up and address safety issues. Bay trains employees to focus on safe acts and recognizes other workgroups re what they are doing correctly. When conducting written observations, Bay observers are specific and give useful data that other workgroups can use in order to recognize their safe efforts and opportunities for improvement.

2015-Bay industrial Safety is applying for the VPP Star Status; now under review.

In addition to Monica Piper, the accreditation reviewers spoke with Paul Maxwell, a long-term Bay employee, as well as IRD personnel about the PBBS system in order to gauge the reach of the Bay PBBS program.

The following were notable:

- Bay is a very small organization, often with only 7 employees and occasionally dropping to none on-site at IRD. This number grows to over 100 during an IRD turnaround.
- Bay has delivered training to large numbers of employees at the IRD site, going well beyond the Bay organization.
- Bay employees are familiar with the PBBS system of observation and feedback and how it is implemented.
- The recruitment and training systems sustain worker participation in the PBBS system as turnover and sudden growth occurs within the workforce.
- The PBBS operations are coordinated in an effective manner via CAP.
  - Clear communications among the managers of Marathon's IRD safety program and contractors, including Bay, are evident as they share data and refinements during formal (PBBS CAP meetings) and informal channels.

The PBBS program is well supported by management systems and integrated with routine and turnaround operations. The program is a coherent and coordinated effort to sustain critical safety practices across a diverse workforce. IRD has an effective observation system tailored to track important behaviors.

Completed observations and timely feedback are delivered to those observed; at-risk behaviors are identified and actions taken to identify barriers to safety; safe behaviors are reinforced; the data are entered in a timely way into an excellent data-base, and generate useful and timely reports; summary feedback is provided to the workforce, including a weekly webcast by the IRD Division Manager.

At Bay, incidence rates of critical safety events indicate a safety system that demonstrates sustained effectiveness.

#### Strengths:

- Bay uses a well-established behavioral observation protocol to monitor safety practices. Observers consistently enter their data into the IRD data-base. Bay observers turn in their data cards for data entry. These data provide feedback to maintain safety and as needed correct at-risk behaviors. Observations focus on important risks in the refinery environment. Observations and feedback meetings are conducted. Bay employees are knowledgeable about the observation cards and their use.
- Observation data are examined systematically. Reports are distributed to key audiences.

- Employees are well-versed in conducting the process. Participation in the observation process is tracked. Innovative games about behavior problems are used in training.
- Because Bay employees often work alone in inaccessible site locations, they are trained in self-observations, noted in the 2012 accreditation review. These self-observations are consistently performed in a quality manner.
- We saw no evidence of incentives used in a way that might suppress reporting.
- Employees offer suggestions for improvements and control of hazards during feedback interactions. These suggestions are communicated to supervisors and management for corrective action.
- The observation data are entered in an excellent data-base for tracking progress. Data are entered in a timely fashion enabling rapid analysis and reporting.

#### Concerns:

##### LIFE CRITICAL SAFETY RULES

- Life Critical Safety Rules were instituted 8 years ago from a corporate initiative and focused on behaviors that could result in a fatality. We were pleased to learn that PBBS observations were exempt from the policy and today this is no longer a concern.

##### INCENTIVES

- In 2012 incentives appeared as a concern in the IRD accreditation report. In 2015 incidental prizes and/or gift cards at IRD are appropriately used as rewards for high frequency observers and excellent observations.
- Such incentives are no longer a concern at IRD or Bay.

##### OBSERVATION RATES OF 'AT-RISK' BEHAVIORS

- Observations are appropriate and at satisfactory levels at Bay.

##### SIGNIFICANT CHANGES SINCE 2012

- The PBBS observation checklist has been modified by IRD and some contractors in order to create more focused pinpoints. As observers discovered more potential at-risk behaviors, more detailed descriptions of safety practices have been added to the back of the card. Observation pinpoints of practices scored as 'safe' and thus no longer needed have been retired.
- On the observation cards, one barrier was listed as "personal choice" under "causes" on the checklist. This barrier has been removed.
- Economic challenges (5% pay reduction for all contractors in 2012) have impacted contractor morale.

## Specific Concerns for Bay Industrial Services

- The reviewers have no concerns about the Bay PBBS program. We commend Bay, a small organization, for taking on substantial training responsibilities with IRD

## General Recommendations:

- The PBBS program is a properly designed, well-run behavior-based safety system. Impressive improvements in safety behavior and corresponding decrease in injuries and illnesses are noted in comparison to pre-PBBS data. **It is highly recommended that the current operations be supported so that they continue. The contractor PBBS processes are integrated with the Marathon Petroleum Company IRD safety program and these linkages should continue.**
- Continue employee leadership of safety teams (e.g., Area Safety Coordinators) by having them routinely summarize and report PBBS observations and comments from their work team at tool-box meetings or other on-the-job meetings. **Develop at least one front-line PBBS champion. The champion(s) would assist CAP PBBS coordinator with increasing quality observations from within the work group and present data during toolbox and safety meetings.** This will further emphasize and reinforce employee ownership of the program and will help generate higher quality (more detail and constructive suggestions) during implementation of the PBBS process.
  - **The PBBS program at BAY has a champion in Monica Piper.**
- **Alterations to the Contractor PBBS systems (new target behaviors, extension to craft work) should continue to be done in consultation with the PBBS CAP team so that integration does not complicate existing behavioral data systems at the refinery.** Contractor employees can and do provide valuable input to the Marathon safety program and contribute in important ways to sustaining the safety of the entire Marathon IRD workforce. They serve as a source of innovation improving the current system.
  - **This is working well at Bay.**
- Recognized metrics now guide the Contractor PBBS systems. These include measures of workers' implementation (% of workers trained, % of workers observing, density of observation across work hours, etc.) and effectiveness (incidence rates, counts of recommendations for improvements, etc.). **In preparation for 2018 re-accreditation, insure that the following data are kept on a monthly basis and are included for the years 2015-2018:**
  - **Incident rates: onsite TRIR and DART for contractor-IRD and BLS**
  - **Observations: percent of employees making observations, number of observations**
  - **Number of employees**
  - **At-risk behaviors: number of ARBs identified by category**



- **Use small incentive programs to encourage individuals to conduct observations. Highlight the safety improvements prompted by the observations and feedback so that workers see the utility of their observations beyond their personal behavior change.**
- **Reduce the use of “right – wrong” terminology regarding behavioral observations, and replace those terms with “safe – unsafe” or “safe – at-risk” as used in observation forms.**
  - **The right-wrong terms are not used judgmentally; rather they refer to correct or incorrect, safe or unsafe behavior. Language is important and needs to be consistent with and grounded in a behavioral orientation.**
- The Bay team showed that PBBS observations may offer an additional organized method to detect variation in the refinery related to process safety management (PSM). Contractor eyes are on various features of the refinery especially during turnarounds. **We recommend consideration of adding a section to the PBBS SHORT SHOT form for employees to record any unusual variations (etc. leaks, spills, corrosion, vibration, etc.) as a way to collect such observations.** We temper this recommendation with the advice that this be done in collaboration of the BBS CAP team and the engineers responsible for PSM as the logistics for collecting and analyzing such data may complicate existent systems.

Conclusion:

It was a pleasure to review the performance of the PBBS program at Bay Industrial Services. Our observations confirm that the PBBS program is managing critical behaviors and helping sustain the outstanding safety record of this refinery. Our recommendation to the CCBS is for re-accreditation of the Bay Industrial Services PBBS program at the IRD site in Robinson, IL. This accreditation will be for a period of three (3) years, 2015 – 2018.

This recommendation was (approved unanimously on August 21, 2015.

Respectfully Submitted,

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