

Cambridge Center for Behavioral Studies Safety Accreditation Site Visit Report

To:
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Robinson, IL



From:
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Cambridge Center for Behavioral Studies Safety Accreditation Site Visit Report

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

Date of Visit: July 27 August 1, 2015

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

Overview: The 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. 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 its extension into ten (10) contractors. **The MPC IRD PBBS re-accreditation and Platinum Certification review were included in this comprehensive site review.**

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 all eleven units applying for accreditation.

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 unit's 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 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 program reviews revealed the 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 and Tim Meier; later, 2 employees	Safety Building Conference room
Monday 7/27/2015 1:00 - 4:30	SENCO Construction Co PBBS system. Interview PBBS Coordinator Nick Martin Safety Manager & Co-Owner Michele Brown; later 2 employees	Safety Building Conference room
Tuesday 7/28/2015 7:00 am-Noon	Gribbins Insulation Co. PBBS system. Interview Trevor Atherton, Safety Manager; later 2 employees	Safety Building Conference room
Tuesday 7/28/2015 1:00 - 4:30	Brand Energy & Infrastructure Services, Inc. PBBS system. Interview Aaron Ikemire, Safety Manager; later 2 employees	Safety Building Conference room
Wednesday 7/29/2015 7:00am – Noon	SDR Coatings, Co. PBBS program. Interview Tanner Holt Safety Mgr; later 2 employees; driving tour of the IRD site	Safety Building Conference room
Wednesday 7/29/2015 1:00- 4:30	Freitag & Weinhardt PBBS program. Interview John Marts Safety Manager; later 2 employees	Safety Building Conference room
Thursday 7/29/2015 7:00am – Noon	Bay Industrial Safety Services PBBS System. Interview Monica Piper, BBS Coordinator; later 2 employees	Safety Building Conference room
Thursday 7/29/2015 1:00 – 4:30	Morris Construction Company PBBS System Chad Tislow Safety Manager; later 2 employees	Safety Building Conference room
Friday 7/30/2015 7:00am – Noon	Stewart Security Patrol Inc PBBS system. Interview Debbie Parker Coordinator; later 2 employees; driving tour to and from security office	Safety Building Conference room
Friday 7/30/2015 1:00 – 4:30	Mistras Inspection Company PBBS System Eric Martinovich Coordinator; later 2 employees	Safety Building Conference room
Saturday 7am to Noon	Lytle Electric PBBS Program Eric Biernbaum Safety Manager; later 1 employee	Safety Building Conference room

Summary

Marathon Petroleum Company, Illinois Refinery Division Reccreditation

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: Marathon Petroleum Company, IRD LLC initiated a behavior-based safety process in 1996. Since then the PBBS program has developed in sophistication and reach. The refinery has demonstrated effective sustained safety management and earned numerous awards for safety achievements including OSHA VPP status, MPC Presidents' Awards and CCBS accreditation. The MPC IRD demonstrates leadership in assisting and supporting its contractors to similarly adopt comprehensive safety management including the PBBS programs. The Marathon IRD Behavioral Based Safety Contractor Advisory Panel (CAP) actively coordinates its PBBS process with that of the Marathon refinery workers and 13 contractors (ten applied for CCBS accreditation in 2015). The PBBS process elements found in the Marathon IRD PBBS process (e.g., the observation protocol, training materials, reports, etc.) are extended to contractors and adjustments have been made to customize the system to various contractors' operations. The MPC IRD demonstrates sustained commitment to the effective PBBS system even as key personnel change at the refinery. Four Division Managers have led the division since 2005. It is clear that the PBBS system is integrated with refinery operations and is an effective element of the entire safety system.

Evidence observed during the 2015 re-accreditation visit indicates that Marathon Petroleum Company, LLC IRD is continuing to execute the procedures described in their application for re-accreditation. Outcome data are extensive, verifiable and current and indicate a safety process that has resulted in sustained control of at risk behaviors and a low rate of incidents. The PBBS coordinators rotate from among the workforce. This is effective in maintaining the integrity of the well-documented and resourced operation; this helps engage workers in the process. The management systems (e.g., data collection, data entry, analysis, reporting) and training are responsive to the safety needs of the workforce and evidence of employee input into the system is abundant. The PBBS process is part of a comprehensive safety program that manages the safety of refinery employees and integrates well with the operations by other contractor workforces in the Robinson refinery. We did not examine Marathon Petroleum Company IRD operations on other job sites external to the 900 acre refinery site as this accreditation application extends only to their work at the IRD refinery.

The refinery is a large installation and employees work across the environment. Thus they may encounter numerous hazards and engage in numerous at risk behaviors in a far-ranging operation. In addition to Eric Nickless and Tim Meier, we spoke with several workers about the PBBS system to gauge its reach.

The following were notable:

- Employees are familiar with the PBBS system of observation and feedback and how it is implemented.
- The recruitment and training systems appear adequate to sustain worker participation in the PBBS system as turnover occurs within the workforce.
- The PBBS operations by Marathon employees and other contractors and their safety systems are coordinated in an effective manner via CAP.
 - Clear communications among the managers of Marathon's IRD safety program and contractors are evident as they share data and refinements during formal (BBS CAP meetings) and informal channels.
 - Supervisors view managers as clearly and consistently committed to the PBBS program
 - New: IRD-TV programming now includes the use of video coaching talks and PowerPoint presentations highlighting PBBS and updates.
- The PBBS program is promoted with a variety of insignias and slogans. Hats, for example, display an array of markings indicating commitment to the PBBS system.
- Fifty-four (54) BBS facilitators guide BBS programs throughout IRD.

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 and contractors have a effective observation system tailored to track important behaviors. The system includes completed observations and timely feedback 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 Division Manager.

The incidence rates of critical safety events indicate an effective safety system that demonstrates sustained effectiveness.

Strengths:

- MPC IRD employees and contractors use a well-established behavioral observation protocol to monitor safety practices. IRD observers consistently enter their data into the IRD data-base. Contractor 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. Evidence shows that observations and immediate feedback meetings are being conducted. There are specific measurable goals for employee participation and PBBS data are current across work units throughout IRD. Employees interviewed were knowledgeable of the observation cards.
- Observation data are examined systematically. Reports are distributed to key audiences.

- Employees interviewed were well-versed in conducting the process. Evidence of integration with other safety management systems was apparent. Training in the process is ongoing and extensive. Participation in the observation process is tracked and efforts are made to increase participation and improve the quality of observations. We saw no evidence of incentives used in a way that might suppress reporting.
- Marathon Petroleum Company IRD personnel first earned CCBS accreditation in 2005 (re-accredited in 2008, 2012) and have systematically refined and extended their process. They promote safety within the regional community and actively share and develop their PBBS process. Evidence is abundant that they demonstrate sustained commitment to maintaining the safe operation of the refinery. The behavioral safety culture at IRD is strong and resilient.
- According to statements in interviews, employees offer suggestions for improvements and control of hazards during feedback interactions. These suggestions are communicated to supervisors and management for corrective action. Examination of the comments on observation forms confirmed this.
- 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. Many times during our week long review Tim Meier and Eric Nickless answered our questions about PBBS implementation by querying the data-base. Their command of the system yielded timely and detailed reports revealing the capacity for a functional analysis of the complex data set.
- Eric Nickless is the current PBBS manager for Marathon employees (replacing Dan Dix who replaced Dawn Adams who replaced Kent Sandshafer) and coordinates efforts and shares data with Marathon safety personnel. Eric is fluent with procedures, reports, and the PBBS technology. It was evident that Eric is a visible and attentive manager and enjoys the support of employees and management.
- The safety (PBBS) oversight procedures seem planned and routine such that follow-up actions are coordinated within and across work units. Kevin Bogard, Division Manager, conducts a periodic webcast with statistics and updates on the process. He shows OSHA data, reviews safety initiatives, reviews BBS data and gives out special recognition to areas with high participation. Mr. Bogard attends monthly steering team meetings.
 - We talked with Mr. Bogard – he is a strong supporter of PBBS, as have been his predecessors. He has expanded the use of behavioral science beyond safety. The latter is occurring in process redesign (IRD Refined). This is a process through which behavioral science is used in training and in practice to better equip leaders with the skills to understand and use the contingencies that affect behavior and outcomes.

Concerns in the 2012 review and their current status

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 moreover; today this is no longer a concern.

INCENTIVES

- In 2012 incentives appeared as a concern. In 2015 incidental prizes and/or gift cards are appropriately used as rewards for high frequency observers and excellent observations.
- Newly designed hard-hat stickers have proved to be highly desired tokens or rewards for agreeing to be observed.
- Such incentives are no longer a concern.

CORPORATE BONUS PLAN

- Marathon Petroleum Corporation includes an OSHA rate factor within its corporate bonus program. This topic was discussed with senior IRD safety personnel. The MPC bonus program has been reviewed by OSHA and found acceptable due to an insignificant impact on bonus amounts.
- In addition, OSHA expressed no concerns about this because of MPC's rich history of incident reporting.
- Our independent observations during the accreditation review are consistent with those of OSHA.

OBSERVATION RATES OF 'AT-RISK' BEHAVIORS

- High rates of safe performance observations continue. The program demonstrates a robust observation environment. Observation rates are high and injury rates are low.

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.
- Process safety along with process equipment and odor have been taken into consideration and added to the PBBS checklist

Recommendations:

- During our visit Tim Meier (Contractor PBBS Coordinator) informed us that he plans to retire prior to the end of the next 3-year accreditation cycle. This is common knowledge within IRD. **We highly recommend that IRD management develop a succession plan that insures continuity and a smooth transition for the contractor PBBS program.**
- 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.** 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.
- **We recommend continuous monitoring of management incentive awards in order to insure their independence from the reporting of safety data and incidents.**
- **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.
- **Recognized metrics now guide the Contractor PBBS systems; these metrics 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.).**
- **Continue to use small incentives to encourage individuals to conduct observations coupled with visible oversight activities. Highlight the safety improvements prompted by the observations and feedback so that workers see the utility of their observations beyond their personal behavior change.**
For example, workers could earn incentives if:

- An employee earns a PRIDE point for each observation submitted up to a maximum of 10 per quarter. These PRIDE points may be spent in the PRIDE catalogue. Points are earned in many other non-PBBS initiatives.
- **Develop ways to 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.**
- **We recommend that Marathon Petroleum Company continue to extend the IRD PBBS system to their other operations outside the refinery as the program is clearly effective in improving safety practices.** The many effective elements of the Marathon IRD process provide a well-tested and working foundation for this extension.
- The Gribbins 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.
- IRD has submitted an application for Platinum Accreditation. **In recognition of IRD’s exemplary behavioral safety performance, and IRD’s outreach to external organizations and the professional safety community, we recommend that the Platinum level accreditation be awarded to IRD MPC for a period of four (4) years.**
 - IRD has demonstrated exceptional leadership in providing BBS training and education to outside organizations, including trade unions and other manufacturing organizations; IRD has made significant contributions to outside professional conferences, including Behavioral Safety Now, and has initiated Behavior Based Safety Conferences on-site that have been attended by up to 400 participants. IRD has also hosted independent safety research by behavioral scientists.
- **Further, we recommend that in future years the growing number of contractor accreditations at IRD be divided into two groups. In 2018, each of these groups should be reviewed for re-accreditation in non-sequential weeks in order to allow a full day and in-depth review in each contractor audit.**

Conclusion:

It was a pleasure to view the performance of the Marathon Petroleum Company Illinois Refinery Division team. Our observations confirm that the system is effectively managing critical behavior by refinery workers and contractors and helping sustain the outstanding safety record at this refinery. The site visit indicated that IRD is running an effective, exemplary and robust PBBS process. **Our recommendation to the CCBS is for Platinum level accreditation of the Marathon Petroleum Company IRD PBBS program in Robinson, IL. This accreditation will be for a period of four (4) years, 2015 – 2019.**

On August 18, 2015, the above recommendation was unanimously approved by the CCBS Commission on Accreditation.

Respectfully Submitted,

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