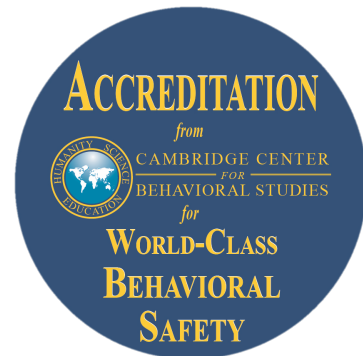


Cambridge Center for Behavioral Studies Accreditation Site Visit Report

To:
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December 16, 2019

Commission on Behavioral Safety Accreditation
Cambridge Center for Behavioral Studies (CCBS)
P.O. Box 7067
Cummings Center Suite 340F
Beverly, MA 01915

Review team: Sigurdur Oli Sigurdsson, Ph.D. (Review Chairperson)
Don Kernan (Commissioner)

Cambridge Center for Behavioral Studies (CCBS) Mission
To advance the scientific study of behavior and its humane application to the solution of practical problems, including the prevention and relief of human suffering.



CAMBRIDGE CENTER
FOR
BEHAVIORAL STUDIES

Accreditation Decision

The Cambridge Center for Behavioral Studies' Commission on Behavioral Safety Accreditation reviewed the Bay Industrial Safety Services' application for Re-Accreditation and performed a site visit on October 10, 2019. Based on data reflecting exemplary safety performance of Bay Industrial Safety Services, and supported by observations and interviews during our visit, Dr. Sigurdsson and Mr. Kernan found that Bay Industrial Safety Services' behavioral safety program meets the three basic accreditation criteria of the Commission on Behavioral Applications for Behavioral Safety Accreditation:

- 1) it is a behavioral process,
- 2) the process has had a visible positive impact on safety performance,
- 3) the process has produced sustained positive performance over 3 or more years.

The Commission site visitors recommended to the Commission that the Bay Behavioral Safety Process (as integrated into the Marathon Petroleum Company FUELS Behavioral Safety Process) be Re-Accredited at the Gold Level for a period of three years. This recommendation was unanimously approved on December 16, 2019. Recommendations for possible enhancements to the program are contained in the section on Standards, which starts on p. 7.

The Cambridge Center for Behavioral Studies accredits the Bay Industrial Safety Services Behavioral Safety program for 3 years (December 2019 to December 2022).

Sampling Methodology of Bay Industrial Safety Services Behavioral Safety Program Review

Bay Industrial Safety Services' behavioral safety process is part of the FUELS behavioral safety process in the Illinois Refining Division (IRD) of Marathon Petroleum Company LP, and Bay also uses its own checklist. This review is therefore based on the fact that Bay's Behavioral Safety program is integrated into the FUELS process, which was reviewed in the same visit (see report [here](#)). In the site visit, the Accreditation review team worked with Bay Industrial Safety Services' Behavioral Safety Coordinator and the FUELS Team in order to evaluate the behavioral integrity and ongoing impact of the Behavioral Safety program on safe performance and the reduction of injuries. This was accomplished through: a) review of the written application for accreditation, b) safety performance data review, c) interviews with accountable parties, and d) witnessing behavioral safety processes in action. The Application for Accreditation renewal was submitted to the CCBS on September 3, 2019 for purposes of reviewing the Bay Industrial Safety Services behavioral safety program. The current application updated safety performance data and provided examples of more recent behavioral safety implementations. The site visit itinerary allowed the reviewers to interview the Bay safety coordinator, front-line supervisors and employees, and to review the integration of Bay's workforce into the FUELS process at IRD.

Site Review Itinerary

October 10

10:30 am – 11:30 am: Interview with a small sample of employees

11:30 am - 12:30 pm: Interview with Behavioral Safety Coordinator

1:30 pm - 2:30 pm: Interview with a small sample of front-line supervisors

BEHAVIORAL SAFETY REVIEW AND RECOMMENDATIONS

Safety Performance

The visit supports the data and information in the Bay Industrial Safety Services application, including behavioral data, leading indicators and injury outcome data. Bay's OSHA Recordable Incident Rates continue at zero, which is of course well below industry standards. In the three years since the Re-Accreditation of Bay Industrial Safety Services in 2016, OSHA has released incident data for the following years: 2015-2017. For these three years, Bay Industrial Safety Services has been again at zero and under the industry average. Bay's data continue to be low in 2018 and 2019 YTD.

The graph below shows the OSHA Recordable rates for Bay workers (in blue), and comparable industry (red). Comparable industry is "All Other Specialty Trade Contractors" (NAISC Code 238990).

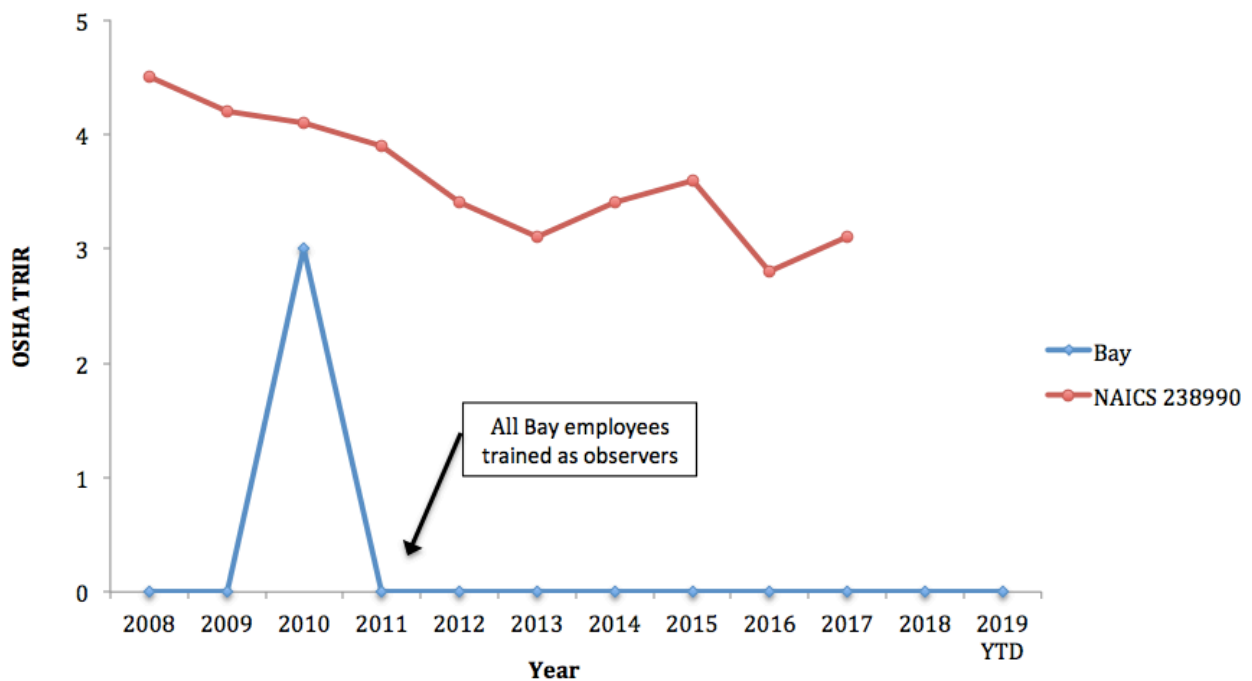


Figure 1. Bay Industrial Safety Services incident data and comparators

Follow-up on Suggestions from Last Reaccreditation

In the 2015 reaccreditation, there were specific recommendations for Bay's process. It was recommended that the linkages with the IRD process should continue, and it is clear that they have only strengthened since then. There was also a recommendation to develop at least one front-line supervisor, and Bay has entrusted that role to two of its employees.

About Bay Industrial Safety Services

Bay Industrial Safety Services, Inc. is a commercial and industrial electrical contractor that provides the construction industry with a contractor workforce to serve as confined space entry attendants, fire watch attendants and safety personnel. Bay currently employs 5 people full time, but may add up to as many as 160 additional employees during plant outages or turnarounds.

Safety Performance Achievements and Awards

Bay has the STAR status in the Voluntary Protection Program (VPP) by the Occupational Safety and Health Administration (OSHA).

Bay was the first contractor at IRD to become CCBS accredited. Bay's behavioral safety program at IRD has received multiple national, Marathon corporate, and IRD awards.

The Process

The Bay behavioral safety process has a history spanning 10 years. Bay's Behavioral safety processes at IRD has been accredited by the *CCBS Commission on Behavioral Safety Accreditation* since 2012, after successful re-accreditation in 2015. Some new initiatives since 2015 include a stretching program, making the use of spoggle goggles (goggles with wraparound foam around the edges) mandatory when on the job, and printing the positive comments conducted on Bay workers by workers from other companies. These are then given to Bay employees.

The Bay process is currently overseen by a committee comprised of 2 hourly full-time workers and one part-time. The committee meets once a month to review data, assess the process, discuss follow-up of fix-it items and discuss action plans and goals. During turnarounds, observation data are compiled and analyzed at least once per day.

The committee is chaired by Monica Piper, who is Bay's Safety and Industrial Hygiene Technician at IRD. The facilitator is charged with duties such as facilitating steering committee meetings; following up on fixes that come from observation; reviewing observation data in the FUELS electronic database; training observers and ensuring that communication about the process occurs with all employees. The Bay office managers attend meetings of the FUELS steering committee.

Currently the process has all of its employees that are permanently placed within IRD trained as observers by Monica Piper. All employees that are hired in by Bay for outages and turnarounds are also trained as BBS observers. Training is four hours, and covers the following topics: *Concepts of BBS and History, Importance of Effective Communication, Focus/Normalization of Deviance, Approach and Acceptance of Feedback, ABC Analysis and properly filling out of an observation and Facilitator Coaching Guides*. If Bay hires an employee during outage or turnaround that has been trained before, they will assess if re-training is needed. Coaching is also provided on a regular basis, using a Facilitator Coaching Guide. The Coaching Guide breaks the observation into 17 parts, and is focused on clearly defined observer behaviors. After the Coach has observed the observer interact with those observed, the Coach will first provide positive feedback and praise, which is followed by constructive feedback on behaviors that were not up to standard. Below are the steps involved in the coaching session:

1. Introduction: Yes or No
2. Observer asked permission to do observation.
3. Observer explained the process.

4. Observer set a good example (PPE Ext)
5. Observer discussed specific safe behaviors first.
6. Observer avoided using loaded words
7. Observer discussed specific At-risks seen.
8. Observer asked for commitment to working safe.
9. Observer kept discussion positive
10. Observer promoted discussion by asking questions.
11. Observer checked only the parts of the form that applied to the task.
12. Observer listened to answers, made sure employee understood.
 - If follow up is needed, observer explained
13. Observer gave proper feed back
14. Observer legibly filled out all applicable portions of the form
15. Observer filled out comment section of form with applicable barriers
16. Observer treated worker like the worker wanted to be treated
17. Upon completion observer showed employee finished form

The total number of observations conducted per month varies widely, which is to be expected. In a regular month, observations can range from 10-70. During turnarounds and outages, Bay hires dedicated behavioral safety observers. During those months, observations can range from 700-2,000, depending on the number of dedicated observers. IRD credits their low number of incidents during turnarounds and outages in big part to dedicated observers, many of whom are Bay employees.

Observations are conducted when the employee has 3 to 5 minutes to talk with a fellow worker. At the top of the checklist, the observer can choose to sign his or her name, but this is not a requirement. The primary benefit to signing the observation sheet is if follow-up action is needed. The checklists used by Bay contain behaviors and conditions related to the following categories: body use/position, driving, elevator use, ergonomics, excavations, eyes on task, fall protection, line of fire, material handling, parking lots, people, pinch points, PPE, procedures, stairwells, tools & equipment, trip hazards, and work environments. Observers mark both 'safe' and 'opportunity for improvement' by these categories. The observer talks with the employee(s) being observed after completing the checklist. Safe behaviors are praised first. Then there is a discussion of each checklist item that was scored as 'opportunity for improvement'.

Bay's workforce can also be observed by Marathon IRD employees or contractors. These observations feed into the FUELS process (see the FUELS accreditation report [here](#)). Under FUELS, Trained observers have the ability to observe any craft and anyone on site, regardless of employer. Observers are trained to receive permission from the subjects being observed before continuing with the observation. The observations are fed into a system that allows Bay Industrial Safety Services to obtain data that are specific to the company. In addition to the data fed to Bay employees via the FUELS process, the Bay steering committee generates data review on a monthly basis that are fed back to the employees at regularly scheduled safety meetings.

Goals and small incentives tied to participation in the program; Bay aims for 40% of employees conducting an observation each month, but no incentives or other consequences (positive or negative) are tied to that goal. Data submitted by Bay suggest that this goal is reached approximately 33% of the time. Observers that complete a particularly high-quality observation receive a “feedback recognition card” (see sample card on right). Bay will also occasionally enter those that complete a quality observation into a raffle, with the winner receiving a gas card.

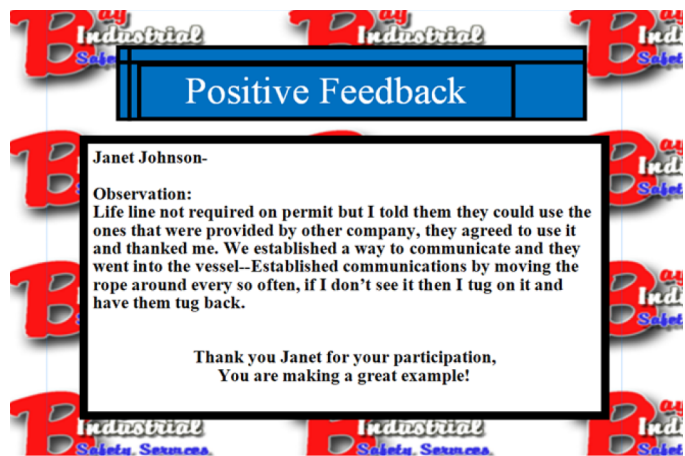


Figure 2. Sample feedback recognition card

The FUELS facilitator will review observations as they come in from contractors every day, including Bay Industrial Safety Services observers. These data are fed to the work force through multiple communication channels (see the FUELS accreditation report [here](#)), but weekly safety meetings are the primary venue for communicating safety and health information and providing feedback based on data from the behavioral safety process.

Management support for is evident and conversations with Bay workers confirmed that it receives financial support if needed. However, there is no continuous improvement plan in operation and no formal succession plan. Bay has engaged in some local outreach to disseminate behavioral safety, but has not mentored or provided consultation to other organizations in that respect.

Ten Accreditation Standards Applied to the Site’s Accreditation Review

The CCBS Commission on Behavioral Safety has ten standards that serve as criteria for accreditation reviews and decisions. The review team assesses and reports evidence of progress using each of these standards. It is important to note that the program is incorporated into the FUELS behavioral safety process. The review outcomes of the ten accreditation standards applied to the FUELS process are relevant to the review of the Bay program, but are not reproduced in full below (full accreditation report available [here](#)). Notes and recommendations that are specific to the Bay program are listed below.

1 Safety Team

- a. Size and human resources in safety team are fit for purpose
 - Safety Manager and Office Manager are energetic and highly motivated to support behavioral safety.
 - Safety Manager and Office Manager have the skills to manage the process, both during normal operations and during turnarounds.
- b. Facilitator functions transferable to other team members
 - Safety Manager and Office Manager can both lead the Steering Team.

Standard 1 Performance: The review team finds Bay Industrial Safety Services’ performance on this criterion to be consistent with the GOLD Level standard.

Standard 1 Recommendations: Progress can be demonstrated by:

- Members of the steering team seeking continuous learning opportunities in behavioral safety, and the science of behavior more broadly.

2 Management Support and Engagement

- Documented management support and engagement
 - The Bay Industrial Safety Services program is well-supported by supervisors.
- Key leaders are held accountable for features of the program
 - Key leaders at Bay Industrial Safety Services that are permanently at IRD are held accountable for features of the program. However, upper management of the larger organization are not held accountable for features of the program.
- Key leaders across the site have acquired education in behavioral sciences
 - Key leaders at Bay Industrial Safety Services have not acquired education in behavioral sciences

Standard 2 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of SILVER Level.

Standard 2 Recommendations: Progress can be demonstrated by:

- Key leaders at Bay Industrial Safety Services gaining basic education in behavioral sciences or behavioral safety.
- Key leaders at Bay Industrial Safety Services tracking their support behaviors of the program.

3 Worker Knowledge, Skills, and Involvement

- Widespread demonstration of working knowledge of the behavioral safety program
 - Bay Industrial Safety Services workers interviewed were very familiar with the program.
- Employees are engaged and willing to participate in the BBS program
 - The number of observations per month done by Bay Industrial Safety Services workers is variable but appropriate for the size of the workforce, which fluctuates considerably month-to-month.
 - All employees are trained as observers,
- Employees are empowered in the BBS program
 - All workers interviewed felt that they could stop work if they noticed at-risk practices with the full support of Bay management and Marathon.

Standard 3 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of GOLD Level.

Standard 3 Recommendations: Progress can be demonstrated by:

- Engaging with IRD's FUELS Steering Team to explore ways to increase the percentage of active observers.

4 Risk Analysis, Pinpointing, and Behavioral Observations

- Observation targets are re-assessed and prioritized
 - All near misses are handed in to Marathon, and can be factored into FUELS risk analyses and revisions of pinpoints.
 - A trend in eye injuries led to a revised definition of safe PPE.
- Data are checked for accuracy and quality
 - The observations are checked both the FUELS coordinator and the facilitator.
 - Observer coaching is done on a regular basis and is aided by a coaching checklist.
- Data compiled and analyzed frequently

- Observations are compiled at least monthly by the FUELS coordinator and the Bay facilitator.

Standard 4 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of PLATINUM Level.

Standard 4 Recommendations: Progress can be demonstrated by:

- Looking for ways to capture observations that may be occurring, but not recorded. The mobile checklist option, which is being created within the FUELS steering team, should help with that issue.

5 Goal Setting and Incentives

- Goals are set for safety process behaviors.
 - Goals are set around quality of behavioral observations.
- Goals are set for quality observations yielding at-risk behavior and comments
 - There is public recognition and modest incentives are provided on a raffle-bases related to the quality of the observations.
- Any incentives are evaluated and refined
 - There is no evidence of evaluation of the effectiveness of incentives.

Standard 5 Performance: The review team finds Bay Industrial Safety Services' performance in this criterion to be consistent with the standard of GOLD Level.

Standard 5 Recommendations: Progress can be demonstrated by:

- Continuing to evaluate possible small incentives or celebratory events that may motivate more workers to conduct high-quality observations so that the goal of 40% participation can be reached.

6 Effective Communication and Performance Feedback

- Performance results are communicated with employees
 - Bay Industrial Safety Services workers regularly receive performance feedback in multiple modes through both FUELS and the Bay team during normal operations.
 - The rates of observations and feedback increase dramatically during outages and turnarounds.
- Follow-up on safety concerns are communicated and documented
 - Bay Industrial Safety Services could give a specific example of an investment in new equipment related to eye protection that improved the safety of a certain work behavior.

Standard 6 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of GOLD Level.

Standard 6 Recommendations: Progress can be demonstrated by:

- Creating pertinent process charts/graphs and post them in the work areas. These should be updated weekly, and at least monthly. These data should be part of discussions, especially at toolbox and safety meetings. These graphs should have trends over time in percentage safe, number of observations, % participation and closed items from fix-it lists.

7 Evidence of Program Effectiveness

- Sustained impact on lagging indicators of injuries and other metrics is demonstrated for 3 or more years below industry standard

- Bay Industrial Safety Services has consistently demonstrated incident rates for the past three years that are below industry averages.
- Bay employees felt that IRD was the safest place they have worked at.

Standard 7 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of GOLD Level.

Standard 7 Recommendations: Progress can be demonstrated by:

- Continue with demonstrated activities that leads to low injury rates, which include, management support, strong steering team ownership of BBS process and improvements, various employee safety engagement activities such as BBS participation, quality comments, job hazard audits, etc., trending low % safe observational data and injury data, and consequence analyses.

8 Continuous Improvement (CI) and Succession Plans

a. CI plan is operational, examples of corrective actions are well documented, including succession planning for key program leaders and champions.

- There are no continuous improvement or succession plans for Bay's behavioral safety process, but that is understandable given the small size of the permanent workforce.
- Two senior members of staff can lead the process.

Standard 8 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of GOLD level.

Standard 8 Recommendations: Progress can be demonstrated by:

- Developing continuous improvement and succession plans for behavioral safety. This is particularly important as so many of the observations conducted during turnarounds are done by Bay employees, and their contributions so highly valued during those times.

9 Extended Applications of Behavioral Technologies

a. Evidence of behavior technologies applied to other organizational processes (e.g., process safety, quality, production, leadership)

- There is no evidence at Bay Industrial Safety Services of extended applications of behavioral technologies, or of any plans to develop these.

Standard 9 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of BRONZE Level.

Standard 9 Recommendations: Progress can be demonstrated by:

- Creating a plan for extending behavioral technologies to other operations of Bay Industrial Safety Services. One example would be the communication behaviors of employees on fire watches and confined space entry watches.

10 Corporate Responsibility and Outreach

a. BBS lessons learned and behavioral education is shared with company partners and contractors

- Bay has reached out to other organizations on matters related to behavioral safety. Given the size of Bay's workforce during normal operations, this is a reasonable amount of outreach activities.

Standard 10 Performance: The review team finds Bay Industrial Safety Services' performance on this criterion to be consistent with the standard of GOLD Level.

Standard 10 Recommendations: Progress can be demonstrated by:

- Continuing to disseminate behavioral safety with peers, and seek ways to engage with professional partners, and the local community.