

**Cambridge Center for Behavior Studies
Safety Accreditation Site Visit Report**

**Site: Lytle Electric Company, Inc.
1400 S. Eaton Street
Robinson, IL 62454**

For workforce performing work at:

**Marathon Petroleum Company LLC
Illinois Refinery Division
100 Marathon Avenue
Robinson, IL 62454**

Date of Visit: June 25, 2009 (8am – 4:00pm)

Auditors: Mark Alavosius, Ph.D., (Chairperson of Team), Tim Ludwig, Ph.D.
Commission on Behavioral Safety, Cambridge Center for Behavioral Studies

Schedule of Events:

8:00 am - 11:30 am	Audit programs, review statistics, view operations, site observations,
11:30 am - 12:30 pm	Working lunch with Eric Biernbaum
12:30 pm - 2:00 pm	Audit programs, field observations, discussions with employees on site,
2:00 pm - 2:15 pm	Auditor conference
2:15 pm - 2:45 pm	Close-out meeting with Eric Biernbaum
3:00 pm - 3:30 pm	Meeting with Tracy Case, Manager of IRD refinery

Summary:

CCBS commissioners toured the Robinson refinery and spent some time looking at management procedures for the BBS process and assessing employees' knowledge and use of the system. We have reviewed on-site operations to validate data and program descriptions in the application, and find that the program operates as described. Further, the program meets the 3 basic criteria of the Commission on Behavioral Applications for BBS Accreditation: 1) it is a behavioral program, 2) the BBS program has had a visible impact on safety performance, and 3) the program has produced sustained positive performance over 3 or more years.

Lytle Electric Company, Inc. adopted the behavior-based safety process used by the IRD Marathon refinery and incorporated it within its management of its workforce working at the Robinson Marathon refinery. The Lytle BBS program began in 2005 and underwent an extensive rollout in 2006. In 2006 Lytle Electric Company placed a field electrician on the Marathon IRD Behavioral Based Safety Contractor Advisory Panel and actively coordinates its BBS process with that of the Marathon refinery and other contractors. Lytle's BBS process uses elements found in the Marathon IRD BBS process (e.g., the observation protocol is similar) but adjustments have been made to customize the system to Lytle's operations. Perhaps the most notable alteration is that Lytle incorporated a 'Don't ask, just shoot

me' policies where in employees allow observations of their work at any time. In contrast, Marathon observers ask their employees to permit observation before any are made. This is a useful change and indicates the willingness of Lytle employees to receive feedback on their safety practices.

The evidence observed during the visit indicates that Lytle Electric Company, Inc. is executing the procedures described in their application for accreditation. Data are verifiable and current and indicate a safety process that has resulted in sustained control of at risk behaviors and a low rate of incidents. Eric Biernbaum impressed us as a hands-on safety manager with a command of his BBS process. The management systems (e.g., data collection, data entry, analysis, reporting) and training are responsive to the safety needs of the workforce. The BBS process is part of a comprehensive safety program that manages the safety of Lytle employees and integrates well with the operations by other workforces occurring in the Robinson refinery. We did not examine Lytle's operations on other job sites as this accreditation extends only to their work on the IRD refinery.

The refinery is a large, 900 acre installation and Lytle's employees work across the environment. Thus they may encounter numerous hazards and engage in numerous at risk behaviors in a far-ranging operation. We viewed various projects in which Lytle employees worked and spoke with several about the BBS system. The following were notable:

- Eric Biernbaum observed some at risk behaviors by his workers (e.g., one was not wearing a hard hat when working on the periphery of the refinery). Eric immediately provided constructive feedback and the worker responded appropriately.
- The Lytle employees appeared equipped with high quality PPE and tools appropriate to their jobs. Eric purchased suitable PPE for us (the commissioners) before escorting us into work zones.
- All Lytle employees that we spoke with were familiar with the BBS system of observation and feedback. Some produced the observation cards as evidence that the program is implemented. One person offered that he personally does not conduct observations and declines to participate. Interestingly, when questioned, this worker readily agreed that he would coach workers if he viewed unsafe practices but chose to do this separate from the formal observation process.
 - The Lytle work force at the Marathon refinery has been reduced in recent months and the employees we encountered may be unusual in that they were retained during the downturn. It could be that these workers are more experienced and therefore are more fluent with the BBS procedures.
- The Lytle employees work alongside Marathon employees and other contractors and it appears that their safety systems are coordinated in an effective manner.
 - Eric Biernbaum enjoys clear communications with the managers of Marathon's safety program and shares data and refinements.
- The Lytle BBS program is promoted with a variety of insignias and slogans. Hard hats, for example, display an array of markings indicating commitment to the BBS system.
- Lytle uses an incentive campaign ('biscuits & gravy') where in employees are provided breakfast if no recordable injuries are incurred during a set time period.

The Lytle BBS process is modeled after the effective, and CCBS accredited, Marathon IRD BBS system. Lytle's program is well supported by management systems and integrated with routine operations. All in all...it looks like a coherent and coordinated effort. They have a good observation system, they take

lots of observations, the data are entered in a timely way into an excellent data-base, and they generate useful and timely reports.

Strengths:

- Lytle employees use a behavioral observation protocol to monitor safety practices. With this they provide feedback to one another to maintain safety and correct at-risk variability. Observations focus on important risks in the refinery environment. Physical and graphic evidence shows that observations and feedback are being conducted frequently. Many of the employees interviewed were carrying observation cards.
- The BBS process is well designed and managed. Employees interviewed were well versed in how to do the process. Evidence of integration with other safety management systems was apparent.
- Lytle Electric Company, Inc. joins with other contractors to share the BBS system with Marathon Oil personnel. They have assumed a leadership role in actively promoting and developing their BBS process and demonstrate commitment to maintaining the safe operation of the refinery. This was confirmed during our conversation with Tracy Case, Manager of the refinery.
- 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.
- The observation data are entered in an excellent data-base for tracking progress. Data seemed to be entered in a timely fashion enabling rapid analysis and reporting.
- Eric Biernbaum is the BBS manager for Lytle employees and coordinates efforts and shares data with Marathon safety personnel. Eric is fluent with procedures, reports, the BBS technology, and his craft. It was evident that Eric is a visible and attentive manager and enjoys the support of employees and management.
- The safety (BBS) oversight procedures seem planned and routine such that follow-up actions are coordinated within and across work units.
- There is a variety of promotional items (caps, t-shirts, logos, etc.) that promote the BBS process and appear to be effective in maintaining enthusiasm for the program.

Concern:

- Small incentives (breakfast) are awarded to employees when no recordable injuries are incurred for some time period. While this is a small incentive, the potential exists that this contingency may lead to under-reporting of injuries and/or adjustments to care provided to injured workers (e.g., employees may choose 'first-aid' rather than medical treatment) in an effort by the injured employee not to be the one to cause the incentive to be lost.

Future Challenges:

- The Lytle worker force is currently reduced from previous levels and may grow as demand increases and the economy improve. While the written manuals and SOP's may be sufficient for conveying all the critical information and procedures to returning workers, training new personnel may tax the current resources. Eric maintains a contact list ('book') to organize the re-hire of employees. More experienced and veteran employees can be brought back before less experienced. This system is useful and will enable planned growth of the workforce when needed. We recommend inclusion of data on their safety training (and use of the BBS process) as a consideration.
- The Lytle BBS observation checklist has rather general response definitions (as does the Marathon checklist). An example of this is the "personal choice" label under "causes" on the checklist. This label is the one that is most frequently used to attribute cause to the at-risk behavior. However, such a label may be too easy to choose as a cause, does not help identify environmental changes that should occur to reduce the at-risk behaviors (e.g., decreasing response costs, peer pressure, or confusing procedures). As observations discover more potential at risk behaviors, more detailed descriptions of safety practices may be warranted. This would be particularly useful in the workforce increases and new employees lack familiarity with the Marathon operation.
- The physical plant is on 900 acres and includes both older and newer equipment and facilities. Some parts of the installation exhibit poor ergonomic design and workers must fit to awkward situations to accomplish work tasks. This is being corrected when possible but hazardous configurations of valves, lighting, ladders, etc. will likely remain until extensive re-engineering is done.
- The continued engagement of the entire Lytle workforce in the BBS program will come up against the resistance of some who still decline participation in the BBS observation system.
- Economic challenges appear mounting to threaten sustaining BBS operation as profits are very thin (or absent) in the gasoline refining industry and this may filter to the contractors.

Recommendations:

- The Lytle Electric Company, Inc. BBS program appears to be a properly designed, well-run behavior-based safety system. It has produced impressive improvements in safety behavior and corresponding decrease in injuries and illnesses. It is highly recommended that the current operations be supported so that they continue. The Lytle BBS process is integrated with the Marathon Petroleum Company IRD safety program and these linkages should continue. Lytle 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.
- Options for incorporating the process throughout the Lytle workforce should be further examined. One possibility would be to replace the current use of incentives (biscuits & gravy for no recordable injuries) with breakfast for completing observations or otherwise maintaining safety efforts. The most important consequence to increase observations is the feedback by the observer. This is immediate and powerful. The delayed consequence of a breakfast incentive will also maintain observation levels. Using the incentives to promote individuals to conduct a quota of observations

coupled with visible oversight activities that highlight the safety improvements prompted by the observations and feedback is recommended. For example, workers would earn the biscuits and gravy if:

- The workforce completed the set number of observations (peer or self) **and**
- The work unit supervisor (foreman) conducted tail-gate meetings to review observations and coordinate hazard control, re-training, etc.

Incentive systems are perhaps best used as a short-term mechanism to promote 'buy-in' and establish new behaviors. Set the criteria for the award at the level now occurring and gradually set higher performance goals. Once a level of adherence is achieved (e.g., all are participating), change the focus of the incentives to solving current issues (e.g., observations while working on scaffolding). This is recommended as a way to continuously improve performance and set the stage for the fading of the incentive system.

- Monitor first aid and medical-only injuries (those requiring more than first aid) to evaluate the extent of these incidents. Coordinate with local medical providers (e.g., occupational health clinics) to establish knowledge by these providers of the exposures encountered by Lytle employees if this is not already in place. Incurring a small cost for medical evaluation of a minor injury may prevent some of those injuries developing into more serious cases.
- The Lytle BBS observation checklist is somewhat general in terms of behavioral detail for targeted at-risk behaviors. Addition of new workers might require more elaborate behavioral definitions to help them learn the subtle aspects of refinery operations. Consider the checklist as a tool that can be adjusted to fit current needs and conditions.
- BBS operations are challenging to develop, implement, and manage. Eric and the Lytle workers impressed us with their expertise, enthusiasm, and effectiveness. We recommend that Lytle extend the BBS system to their other operations (those not performed at the Marathon refinery) as the program is clearly effective in improving safety practices.

Conclusion:

It was a pleasure to tour this facility and view the performance of the Lytle team. Our impression was that people were open to showing all of what they do. The site visit suggests that they are indeed running an effective BBS process. Our recommendation to the CCBS is for accreditation of the Lytle Electric Company, Inc. BBS program provided in the context of work performed at the Marathon gasoline refinery in Robinson, IL. This recommendation was approved unanimously on July 15, 2009. Lytle Electric Company Inc. BBS program for work performed at the Marathon IRD refinery in Robinson, IL is accredited for three years (July 2009 – August 2012).

Respectfully Submitted,

Mark Alavosius, Ph.D.
Trustee
Cambridge Center for Behavioral Studies
Chair of Accreditation Team

Contact information:

Mark Alavosius marka@unr.edu

Tim Ludwig ludwigtd@appstate.edu

Dwight Harshbarger dwight.harshbarger@gmail.com

CCBS

Phil Chase pncase@gmail.com

For CCBS flag & decal information kasey@behavior.org