

Cambridge Center for Behavioral Studies Accreditation Site Visit Report

To:
ERIC BIERNBAUM
SAFETY DIRECTOR
BBS COORDINATOR
LYTLE ELECTRIC COMPANY
202 N. JEFFERSON
ROBINSON, IL 62454

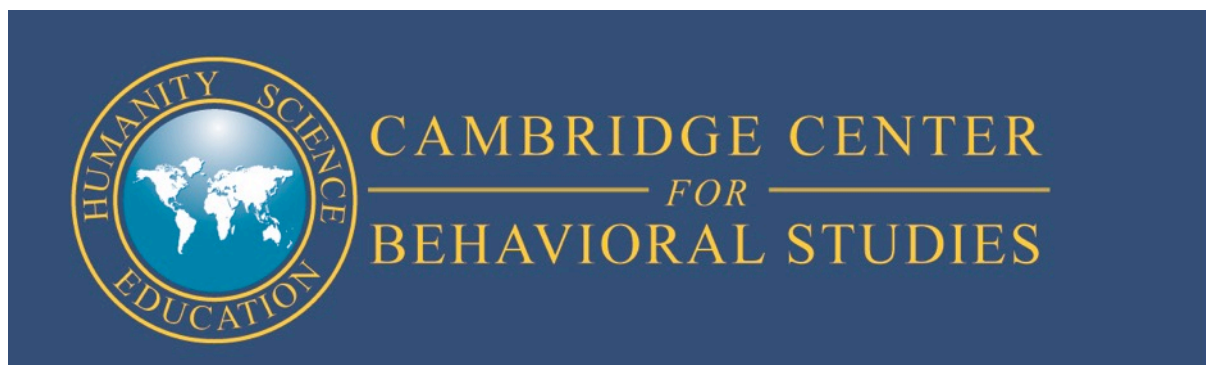


December 16, 2019

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.



Accreditation Decision

The Cambridge Center for Behavioral Studies' Commission on Behavioral Safety Accreditation reviewed the Lytle Electric Company's application for Re-Accreditation and performed a site visit on October 10, 2019. Based on data reflecting exemplary safety performance of Lytle Electric, and supported by observations and interview during our visit, Dr. Sigurdsson and Mr. Kernan found that Lytle Electric's S.P.A.R.K.Y.S. 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 S.P.A.R.K.Y.S 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. 9.

The Cambridge Center for Behavioral Studies accredits the Lytle Electric Company Behavioral Safety program for 3 years (November 2019 to December 2022).

Sampling Methodology of Lytle Electric Company Behavioral Safety Program Review

Lytle Electric Company's behavioral safety process is part of the FUELS behavioral safety process in the Illinois Refining Division (IRD) of Marathon Petroleum Company LP, but uses its own checklist. This review is therefore based on the fact that Lytle'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 Lytle Electric's 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 Lytle Electric 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 Lytle safety coordinator, front-line supervisors and employees, and to review S.P.A.R.K.Y.S's integration into the FUELS process.

Site Review Itinerary

October 10

7:30 am - 8:30 am: Interview with Behavioral Safety Coordinator

8:30 am - 9:30 am: Interview with a small sample of employees

9:30 am - 10:30 am: 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 Lytle Electric application, including behavioral data, leading indicators and injury outcome data. Lytle's OSHA Recordable Incident Rates continue below industry standards. In the three years since the Re-Accreditation of IRD in 2016, OSHA has released incident data for the following years: 2015-2017. For these three years, IRD has been well under the industry average. OSHA data have not been released for 2018, but Lytle's data continue to be low in 2018 and 2019 YTD.

The graph below shows the OSHA Recordable rates for Lytle workers (in red), and comparable industry (blue). Comparable industry is "Electrical Contractors and Other Wiring Installation Contractors" (NAICS code 238210).

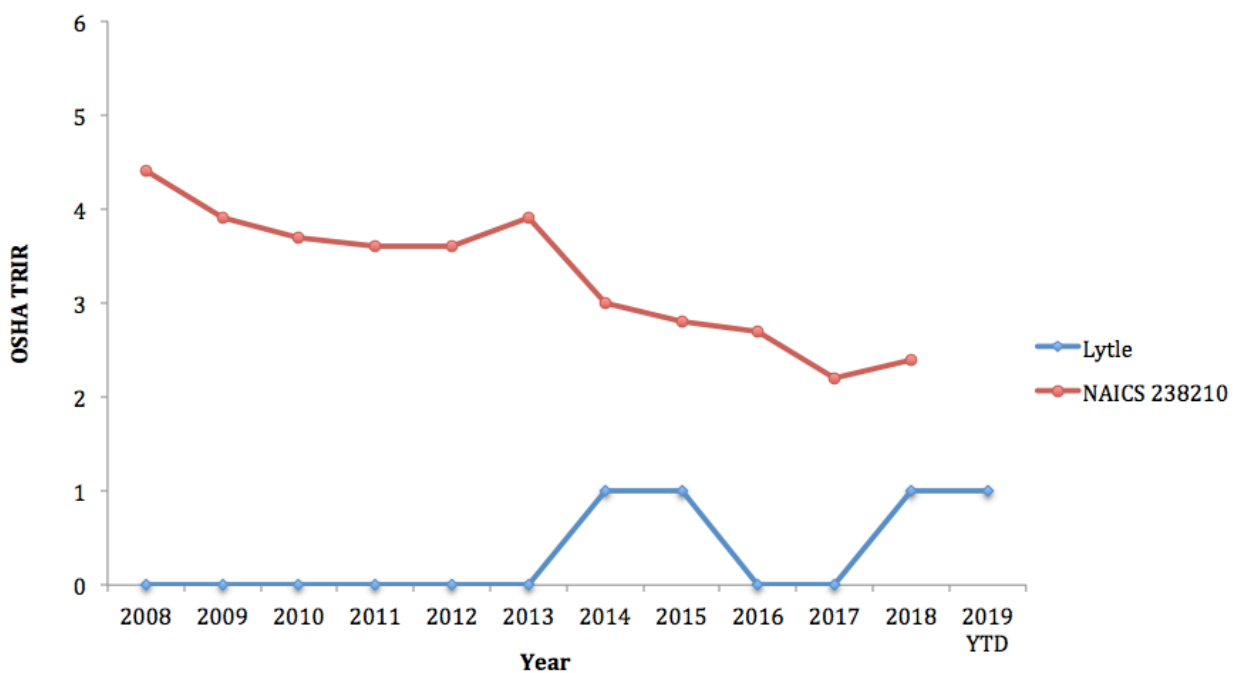


Figure 1. Lytle Electric incident data and comparators

Lytle has experienced one recordable injury in each of years 2018 and 2019. The injury in 2018 was an employee with a worn left elbow socket that allowed the ulnar bone to float from the joint. There was no real treatment for this other than to immobilize the joint in a cast for a short period. The 2019 injury was a knife incident combined with poor body positioning resulting in a laceration that required 4 stitches to the left forearm. There have been no days away or written restriction with either injury.

The graph below shows the OSHA DART (Days Away, Restricted or Transferred) rates for Lytle workers (in red), and comparable industry (blue). Comparable industry is "Electrical Contractors and Other Wiring Installation Contractors" (NAICS code 238210).

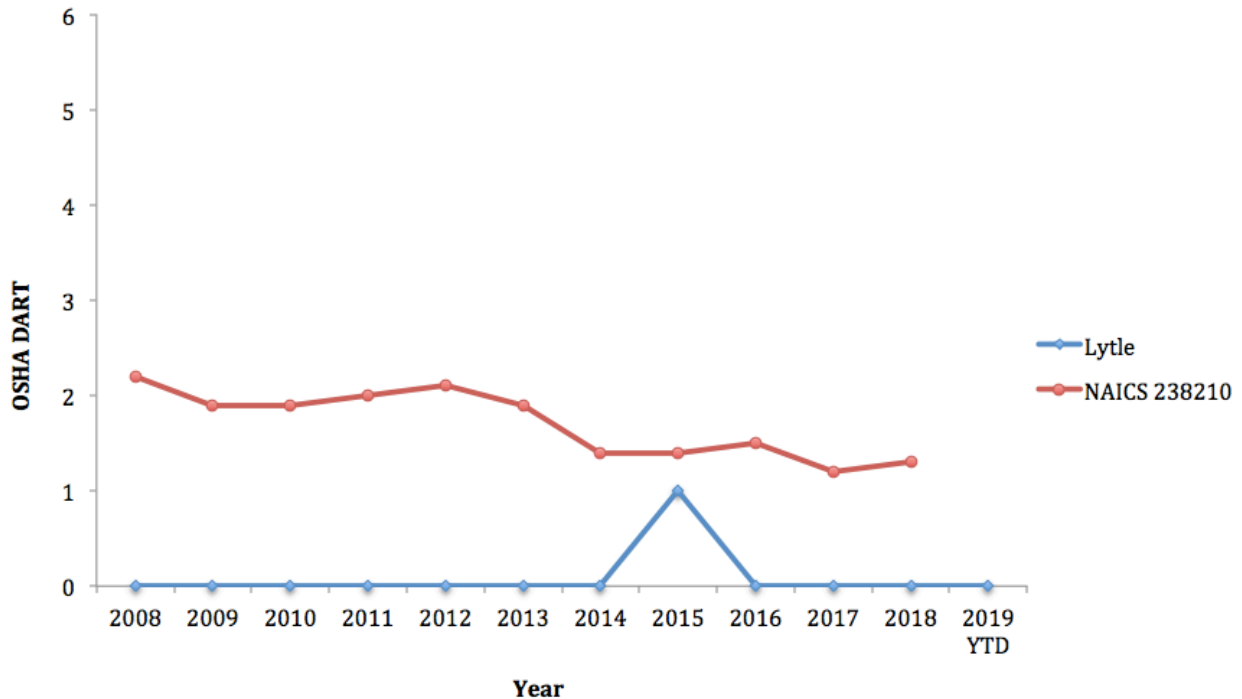


Figure 2. Lytle Electric DART data and comparators

About Lytle Electric Company

Lytle Electric Company, Inc. is a commercial and industrial electrical contractor that installs electrical raceways of all varieties, switchboards, panel boards, overcurrent protection devices, feeders and all conductors of distribution. All components are installed using modular style hangers and fasteners (strut, straps, all thread etc.) or assembled utilizing welding for field fabrication. The conductors are installed in raceways in accordance with NFPA70 using mechanical means for larger conductors or manually for smaller conductors. Lytle currently employs 105 people. There is a high rate of turnover due to the instability in construction work.

Safety Performance Achievements and Awards

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

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

The S.P.A.R.K.Y.S. Process

The Lytle behavioral safety process has a history spanning 13 years. The process is called S.P.A.R.K.Y.S. which stands for *Self Policing At Risks Keeping You Safe*. Lytle’s Behavioral safety processes at IRD has been accredited by the *CCBS Commission on Behavioral Safety Accreditation* since 2009, after successful re-accreditations in 2012 and 2015

The S.P.A.R.K.Y.S process is currently overseen by a committee comprised of 6 hourly full-time workers. There is not much turnover in the committee, and there is an attempt to have representation of apprentices, journeymen, and foremen. Supervisors and senior managers also

attend meetings regularly. 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. The committee is chaired by Eric Biernbaum, the S.P.A.R.K.Y.S Facilitator. The S.P.A.R.K.Y.S 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 S.P.A.R.K.Y.S facilitator is also taking an active role in an IRD-wide effort to bring behavioral safety checklists to mobile devices. However, the S.P.A.R.K.Y.S facilitator does not regularly attend meetings of the FUELS steering committee.

Observer training consists of 5 hours of in-class instruction, followed by practice and mastery sessions in the field with a trainer. There is also a 45-minute annual refresher course for observers that is mandatory. The effectiveness of the training has not been evaluated to date.

Currently the process has 32 of 105 employees (30%) that are trained as observers, and approximately 15 of those conduct one observation or more per month on a regular basis. It should be noted that the process is entirely voluntary. The total number of S.P.A.R.K.Y.S. observations per month has ranged between 40-60 since the 2015 re-accreditation. It is noteworthy that observations and participation reduced significantly in and around the first quarter of 2015, and have not recovered since. Lytle employees have conducted 285 observations in 2019 YTD. In interviews, Lytle Electric workers said that more observations with safety feedback are likely occurring, but that they do not get recorded.

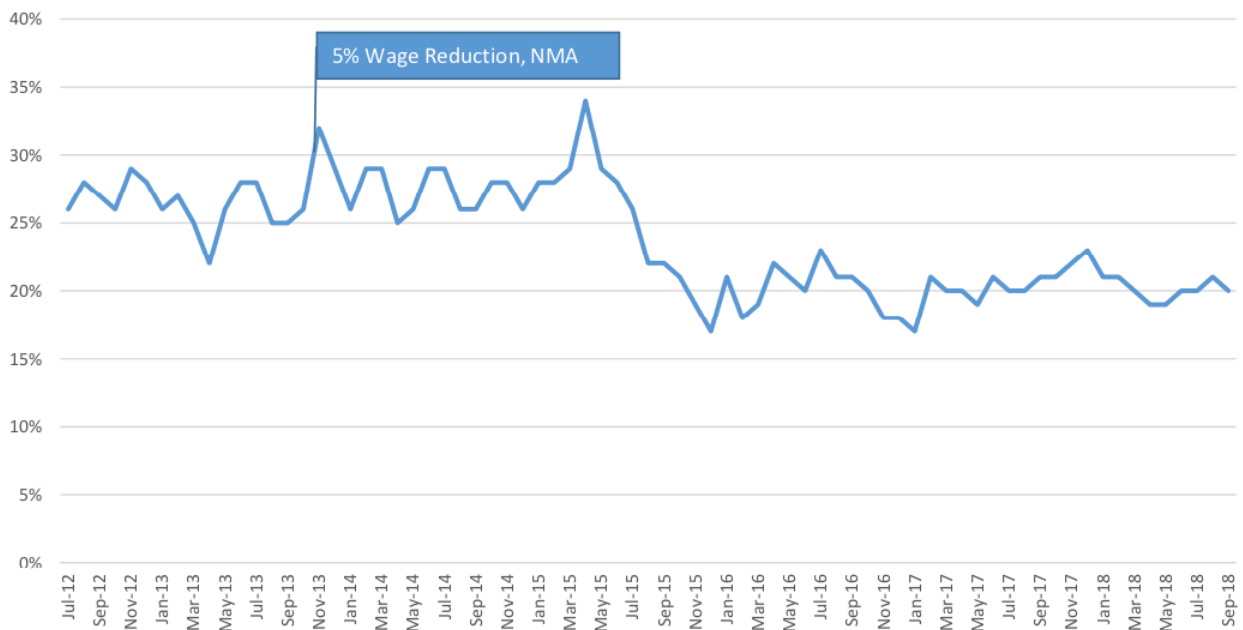


Figure 3. Percentage of workforce conducting observations (July 2012 – September 2018)



Figure 4. Number of observations (July 2012 - July 2018)

The S.P.A.R.K.Y.S. checklist contains five primary behaviors, and five secondary behaviors (see checklist on right), as well as room for comments. According to Lytle’s application, checklist items are changed out if there are no “At-Risk” instances recorded three weeks in a row. However, no behaviors have been changed out since 2015.

The image shows two versions of the S.P.A.R.K.Y.S. checklist form. The left form includes a signature line for the observer, a date field, and a unit/area field. Below these is a table titled 'Top 5' with columns for Behavior, S, and A. The right form includes a table titled 'Secondary Behaviors' with columns for Behavior, S, and A, and a comments section below it.

Behavior	S	A
Body Mechanics		
Electrical PPE		
Eye Protection		
Fall Protection		
Seatbelt		

Secondary Behaviors	S	A
Gloves		
Housekeeping		
Line of fire		
Material handling		
Spotter usage		

Comments:

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. A signature also means that the observer is eligible in the Lytle

Electric BBS incentive program. If a checklist behavior is marked “At-Risk”, it immediately triggers a conversation with the individual working at-risk. The conversation should ascertain a barrier associated with the area marked at-risk. If an at-risk is identified, a barrier must be associated with a concern. Once identified, the barrier is to be listed beside the comments section. In any event, if an at risk is identified or if the entire observation was deemed safe, feedback should be given in a soon, certain, and positive manner to the employees observed on the areas viewed as safe. The observer should then express concern about the at-risk section and encourage change. On the back of the checklists are areas where additional action and comments are located. If follow-up is needed, it can be requested by either the person observed or the observer.

Lytle’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. However, Lytle designed a hardhat sticker specifically for the employees. The sticker says simply, “Don’t ask, just shoot me”. When the sticker is displayed on the hardhat, it is worn as a commitment from the employee, to give observers the right to initiate an observation without asking permission. If no sticker is present, then permission is asked. The observations are fed into a system that allows Lytle Electric to obtain data that are specific to the company. In addition to the data fed to Lytle employees via the FUELS process, the Lytle S.P.A.R.K.Y.S. steering committee generates data review on a monthly basis that are fed back to the employees at regularly scheduled safety meetings.

There are goals and small incentives tied to participation in the S.P.A.R.K.Y.S. program. An annual goal example would be no electrical PPE at risks for a calendar year. There are participation goals in place for a group meal on a monthly basis, for example if the previous month’s participation rate is exceeded. There are also individual meal tickets or small hand tools available in raffles for those who conduct observations. Lytle used to have big-ticket incentives, such as a \$50 monthly prize for the most productive observer, but this was discontinued as it likely contributed to pencil-whipping of observations.

The FUELS facilitator will review observations as they come in from contractors every day, including Lytle Electric 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. There are sometimes special occasions that require a “stand-down” to voice concerns over recent safety findings . There are also times when conditions warrant a celebration and/or positive feedback. There is currently no evaluation of the quality of the feedback provided as part of the behavioral safety process.

Management support for S.P.A.R.K.Y.S. is evident and conversations with Lytle workers confirmed that S.P.A.R.K.Y.S. receives financial support if needed. However, there is no continuous improvement plan in operation and no formal succession plan. The S.P.A.R.K.Y.S process has been extended to workers outside the IRD refinery, but they do not have representatives on the steering committee. Lytle has engaged in industry outreach, and used behavioral safety as the model vehicle for employee involvement for another electric company in the process of applying for VPP status. S.P.A.R.K.Y.S. steering committee members have advised a contractor advisory council at another Marathon refinery, and presented at safety events and conferences.

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 S.P.A.R.K.Y.S. 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 S.P.A.R.K.Y.S. program, but are not reproduced in full below (full accreditation report available [here](#)). Notes and recommendations that are specific to the S.P.A.R.K.Y.S. program are listed below.

1 Safety Team

- a. Learning opportunities in behavioral sciences and behavioral safety
 - The S.P.A.R.K.Y.S facilitator actively seeks opportunities in behavioral sciences.
- b. Facilitator functions transferable to other team members
 - The S.P.A.R.K.Y.S facilitator does not engage with the FUELS steering committee.
- c. Team members serve as trainers and educators in behavioral safety
 - The S.P.A.R.K.Y.S facilitator and steering team have advised other organizations on matters related to behavioral safety and presented at professional safety events.

Standard 1 Performance: The review team finds Lytle Electric’s performance on this criterion to be consistent with the GOLD Level standard.

Standard 1 Recommendations: Progress can be demonstrated by:

- The S.P.A.R.K.Y.S facilitator consider re-engaging with the FUELS steering committee.

2 Management Support and Engagement

- a. Documented management support and engagement
 - The S.P.A.R.K.Y.S program is well-supported by supervisors and the owner of the company.
- b. Key leaders are held accountable for features of the program
 - Key leaders do not attend meetings
 - Key leaders at Lytle Electric are not held accountable for features of the program
- c. Key leaders across the site have acquired education in behavioral sciences
 - Key leaders at Lytle Electric have not acquired education in behavioral sciences

Standard 2 Performance: The review team finds Lytle Electric’s performance on this criterion to be consistent with the standard of SILVER Level.

Standard 2 Recommendations: Progress can be demonstrated by:

- Key leaders at Lytle Electric gaining basic education in behavioral sciences or behavioral safety.
- Key leaders at Lytle Electric tracking their support behaviors of the S.P.A.R.K.Y.S program.

3 Worker Knowledge, Skills, and Involvement

a. Widespread demonstration of working knowledge of the behavioral safety program

- Lytle Electric workers interviewed were very familiar with the program.

b. Employees are engaged and willing to participate in the BBS program

- The number of observations per month done by Lytle Electric workers is fairly low.

c. Employees suggestions are implemented

- Lytle Electric could give a clear example of an investment in new equipment that improved the safety of a certain work behavior.

Standard 3 Performance: The review team finds Lytle Electric’s 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 number of observations conducted by Lytle employees.

4 Risk Analysis, Pinpointing, and Behavioral Observations

a. Observation targets are re-assessed and prioritized

- Although there is a stated desire to remove from the Lytle Electric checklist the behaviors that are consistently recorded as “Safe,” this has not happened since 2015.

b. Data are checked for accuracy and quality

- The S.P.A.R.K.Y.S. observations are checked both the FUELS coordinator and the S.P.A.R.K.Y.S. facilitator.

c. Data compiled and analyzed frequently

- S.P.A.R.K.Y.S. observations are compiled at least monthly by the FUELS coordinator and the S.P.A.R.K.Y.S. facilitator.

Standard 4 Performance: The review team finds Lytle Electric’s performance on this criterion to be consistent with the standard of GOLD Level.

Standard 4 Recommendations: Progress can be demonstrated by:

- Further integrating the S.P.A.R.K.Y.S. observation process into the FUELS process, for example through creation of a revised checklist for Lytle Electric. The revision of the S.P.A.R.K.Y.S. checklist should include a look at the IRD “Electric Shop” checklist.
- Looking for ways to capture observations that are occurring, but not recorded. The mobile checklist option should help with that issue.

5 Goal Setting and Incentives

a. Goals are set for safety process behaviors.

- S.P.A.R.K.Y.S. goals and incentives are around outcomes of behavioral observations, as well as conducting observations.

b. Goals are set for quality observations yielding at-risk behavior and comments

- There are no S.P.A.R.K.Y.S. goals and incentives related to the quality of the observations.

c. Any incentives are evaluated and refined

- High-value incentives in the S.P.A.R.K.Y.S. program have been removed, as they likely led to pencil whipping.

Standard 5 Performance: The review team finds Lytle Electric's performance in this criterion to be consistent with the standard of GOLD Level.

Standard 5 Recommendations: Progress can be demonstrated by:

- Continuing to evaluate the goals and incentives that lead to a steady rate of high-quality observations by Lytle Electric workers.

6 Effective Communication and Performance Feedback

a. Performance results are communicated with employees

- Lytle Electric workers receive performance feedback regularly through both FUELS and S.P.A.R.K.Y.S.

b. Follow-up on safety concerns are communicated and documented

- Lytle Electric could give a specific example of an investment in new equipment that improved the safety of a certain work behavior.

Standard 6 Performance: The review team finds Lytle Electric's performance on this criterion to be consistent with the standard of GOLD Level.

Standard 6 Recommendations: Progress can be demonstrated by:

- Creating pertinent S.P.A.R.K.Y.S. 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 S.P.A.R.K.Y.S. 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

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

- Lytle Electric has consistently demonstrated incident rates for the past three years that are below industry averages.

Standard 7 Performance: The review team finds Lytle Electric's 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 S.P.A.R.K.Y.S, and no plans to develop those.

Standard 8 Performance: The review team finds IRD performance on this criterion to be consistent with the standard of BRONZE level.

Standard 8 Recommendations: Progress can be demonstrated by:

- Developing continuous improvement and succession plans for S.P.A.R.K.Y.S. This is particularly important as so much of the operation and success of the behavioral safety program depends on one person (S.P.A.R.K.Y.S. facilitator)

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 Lytle Electric of extended applications of behavioral technologies, nor plans to develop them.

Standard 9 Performance: The review team finds Lytle Electric's 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 Lytle Electric.

10 Corporate Responsibility and Outreach

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

- The S.P.A.R.K.Y.S facilitator and steering team have advised other organizations on matters related to behavioral safety and presented at professional safety events.

b. Program supports or collaborates with safety researchers to help advance the science.

- Lytle Electric has collaborated and shared experiences with the National Safety Council and through the VPP.

Standard 10 Performance: The review team finds Lytle Electric's 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, professional partners, and the local community.