## **BESAFE, Inc.**

## **Safe City, Texas**

## Case Study Information

You have been selected to participate as a team member for an approval evaluation being conducted at Brody Electronic Systems And Facility Equipment, Inc. (BESAFE), Safe City, Texas. The team consists of a Team Leader (OSHA staff), Back-up Team Leader (OSHA Staff), Safety Specialist (SGE), and an Industrial Hygienist (SGE). Your assignment will be as the Safety Specialist, or Industrial Hygienist depending on your expertise.

The Team Leader has given you several VPP requirements to review. In order to assess the effectiveness of each of the elements it was necessary for you to review several documents including the application, safety and health program documentation including training records, annual self-evaluation, in addition to interviewing employees and managers and conducting a walk-through tour of the worksite. The plant walk-through included all areas of the facility necessary to evaluate the VPP requirements you have been assigned.

**Employee Information** - There are 150 BESAFE, Inc. employees, and approximately 30 contract employees working at the site. Production employees work 12-hour rotating shifts. All other employees work five 8-hour days. The Team Leader and Backup Team Leader conducted formal interviews with 36 BESAFE employees, and 15 contractor employees from all shifts. All team members combined conducted 20 informal interviews with BESAFE employees, and 10 contractors.

**Hazards at the Site** - The hazards at this site include, but are not limited to: cuts, abrasions, possible amputations from various metal-working equipment, and a punch press; electrical hazards from maintenance operations conducted on 480V machinery; material handling hazards are as a result of the use of cranes, hoists, and powered industrial truck operations; industrial hygiene hazards including exposure to lead from solder, metal dust from grinding various metal parts, organic solvents, noise, and bloodborne pathogens.

**OSHA inspection activity** - There has been one OSHA inspection activity recently at this site. The company received a citation for three serious violations, and another citation for three other-than-serious (OTS) violations. The serious violations included one violation of lockout/tagout procedures, and two violations for unguarded machinery. The OTS violations included one violation of the respiratory protection program (employee was wearing an inorganic respirator for exposure to dust well below the OSHA permissible exposure limit), and two incidents of not recording an injury involving medical treatment on the OSHA 300. The company was very cooperative in settling the citations, and an agreement was reached with the Area Office. Both citations were upheld, and all penalties were paid. Management committed to pursuing the VPP during the informal conference.

**Injury Rate Information** -

It was determined during the review that the number of injuries and illnesses reported by the site in their application was misreported. A review of the first reports of injury showed a significantly lower number of injuries than those reported by the site. The following table reflects the actual injuries and illnesses that should have been reported:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **YEAR** | **HOURS** | **TOTAL CASES** | **TCIR** | **Days away and restricted cases** | **DARCIR** |
| **1** | 500,000 | 2 | 0.8 | 1 | 0.4 |
| **2** | 400,000 | 6 | 3.0 | 3 | 1.5 |
| **3** | 330,000 | 2 | 1.2 | 1 | 0.6 |
| **TOTAL** | 1,230,000 | 10 |  | 5 |  |
| Three-Year Rate  | 1.6 |  | 0.8 |
| BLS National Average for current BLS national average (NAICS XXX) | 4.2 |  | 1.8 |
| Current Year YTD | 141,360 | 2 | 2.8 | 1 | 1.4 |

This resulted in a 3-year TCIR that was 62 percent below the BLS national average, and a DART that was 55 percent below the BLS average.

The Safety Manager was interviewed regarding the recordkeeping at the site. He stated the problems with recordkeeping were mainly due to the company’s concern about under reporting injuries and illnesses as was cited during their company’s compliance inspection in Year 2. The logs were updated to reflect current recordable injuries and illnesses. It was clear after interviewing the safety manager that he understood the difference between recordable and non-recordable injuries and illnesses, but was purposely recording first aid cases as well as recordables to avoid any OSHA citations. The Safety Manager agreed to maintain first aid cases on a separate log from recordable injuries and illnesses.

Contractor companies were interviewed. Each contractor is required to maintain their own OSHA 300 log and report their totals and rates at the end of the year to the BESAFE safety manager. These rates were used by the company in conjunction with their contractor program to determine contractor suitability to continue working onsite.

The BESAFE safety manager informed the team that he records all temporary employee injuries and illnesses on the BESAFE OSHA 300 log when those employees are being directly supervised by BESAFE management.

**Safety and Health Program Observations** -

**Management Leadership and Employee Involvement**

*Management Commitment -* The BESAFE Manufacturing Manager and other personnel in the management structure have clearly accepted responsibility for the safety of their employees and the operations under their control by establishing Environmental Health and Safety (HES) policies and procedures. The Leadership Team sets goals annually to improve the safety and health of all employees, and the Central Environmental Health and Safety Council (CEHSC) reviews the goals and sets objectives and action plans to meet these goals. Management demonstrates their commitment to safety and health through active participation in the safety programs, participation on teams and councils, providing active leadership, and necessary resources and funding. Management’s goal is to prevent all accidents by identifying and controlling operational risks. Management is fully committed to providing a safe and healthy work environment to all employees, contractors, and neighbors.

*VPP Commitment -* Management has shown a clear commitment to meeting the requirements of the VPP by its active support of the VPP Team and employees. Management has allowed employees to participate in VPP conferences, and takes the time necessary to ensure all elements of the VPP are adequately in place. The manufacturing manager previously worked for a company that was very active in VPP, and has demonstrated his commitment to VPP and the health and safety of all employees at this facility. Management was helpful in setting up formal interviews by providing an employee list for random selection of employees and private rooms for conducting interviews.

*Planning -* Safety and Health are an integral part of the planning processes. Goals are established for the safety performance and objectives are set to accomplish these goals. Management is involved in the planning phase of meeting the established goals by providing the necessary resources including budgeting and training.

*Written Safety and Health Program -* All critical elements (Management Leadership and Employee Involvement, Worksite Analysis, Hazard Prevention and Control, Safety and Health Training) and sub-elements of a basic safety and health program are a part of the Plants’ written program. The safety and health programs are appropriate to the size of the worksites and the type of industry. The written safety and health policies were reviewed and were found to be thorough and more than adequate.

*Top Management Leadership -* Top management is committed to the implementation of a well-coordinated safety and health program including establishing a clear line of communication with employees. The Manufacturing Manager supports the Central Environmental Health and Safety Council and participates in quarterly business meetings with employees. He feels he can best affect safety and health by providing support and resources to the safety and health committees at this site. Several employees stated during interviews that the plant manager and other management officials often visit the work area to discuss safety and health issues and concerns with employees, although, one employee interviewed stated he felt the plant manager was “spying” on employees by spending so much time in the work area.

*Authority and Resources -* All employees at BESAFE are responsible for safety and performing their duties in a safe manner. Employees are given the authority and responsibility to stop any unsafe work activities until corrected. The Manufacturing Manager has the ultimate responsibility with the assistance of safety, health, and technical professionals. Adequate resources, including staff, equipment, and training have been committed to workplace safety and health. This is evident by the programs reviewed, employee involvement, and competence of the employees.

*Line Accountability -* All employees at BESAFE are held accountable for their performance in regards to safety and health. Each employee sets his/her “line of sight” goals which include safety and health responsibilities and which are evaluated annually and compared to the safety, health, and environmental goals and assigned roles, responsibilities, and expectations. Management is committed to providing the leadership, direction, goals, training, resources, and standards to ensure all employees may perform their duties in a safe and healthful workplace. Safety is a critical element in manager performance evaluations, and is reviewed during all managers’ evaluations. The review indicated the system utilized is working effectively. All site safety rules, safe work practices, and PPE requirements are adequate.

*Contract Workers -* BESAFE has a written contractor program which addresses the requirements a contractor must meet to perform work on this site. The written program states all contractor employees will receive the same high quality safety and health protection as any other employee working at BESAFE. The written program requires all contractors to follow all site health and safety rules as well as other federal regulations while performing work at this site. The written program states the safety manager is responsible for contractor oversight and ensuring the contractor complies with all rules spelled out in the contractor program. The written program states contractors conducting short term projects will be monitored on a daily basis by BESAFE, and those conducting long-term projects (Greater than 30 days) must have a safety representative onsite whenever the contractor employees are performing work. The contractor program states a contractor may be removed from the site for failing to follow any safety or health rule. When interviewing the site safety manager you learned that the business manager was responsible for obtaining the necessary documentation of all contractors safety and health programs and injury/illness information, but the process did not require the contractor safety information to be shared with the site safety manager. When reviewing contractor safety programs you find that an electrical contractor onsite re-wiring 480 Volt machines did not have a lockout/tagout program. The contractor safety coordinator stated they used the site’s program, but a copy was not available. Two other contractors who were brought onsite within the past 30 days provided OSHA 300s which indicated three-year injury/illness rates approximately 25 percent above the national average. Both contractors stated they were not asked for this information prior to arriving onsite.

*Employee Involvement* - Management was very accommodating in providing the team with offices for employee interviews. The formally interviewed employees were randomly selected based on jobs and locations throughout the various units. All employees interviewed were comfortable in talking with members of the OSHA VPP Evaluation Team. Employees indicated they understood their responsibilities in the safety and health program. The OSHA VPP Evaluation Team’s assessment confirmed BESAFE employees are knowledgeable regarding the facility’s safety and health program.

Employee involvement is encouraged and fostered through the use of six different safety committees and a program entitled the Proactive Safety Process. The committees are composed of both hourly and salaried volunteer employees ranging from the manufacturing manager to process and office workers. Each committee meets monthly, and a review of committee minutes indicated the committees have been in existence for more than a year. The committees range in size from 10 members on the Hazard Recognition team, and 10 representatives on the VPP Team. Other committees include the Central Environmental Health and Safety Council, Environmental Safety Culture Team, Job Safety Analysis Team, and Contractor Safety Committee.

Most employees interviewed were knowledgeable of VPP participation, including their right to request and receive reports of inspections, accident investigations, and their results. A couple of employees hired within the past two months were unfamiliar with some of the requirements of VPP and all of the rights that accompany participation, includingtheir right to access results of accident investigations. Employees are very supportive of the company’s participation in VPP.

*Safety and Health Program Evaluation -* The annual evaluation was conducted by BESAFE’s VPP Team and covered all VPP requirements. There is a narrative, written report which includes a description of the elements, evaluation of the effectiveness of each element, and recommendations. The annual evaluation didn’t include assigning a responsible party to ensure correction of the hazards, or setting action dates. The report covers the entire program with special emphasis on the critical elements addressed in the Federal Register. Written procedures have been developed for guidance in the performance of the annual evaluation.

## **Safety and Health Program Observations**

**Worksite Analysis**

*Management Understanding -* Management has a thorough understanding and knowledge of the hazards at this site. Methods used to determine uncontrolled hazards are Process Hazards Analyses (PHAs), Industrial Hygiene Surveys, Confined Space Surveys, Personal Protective Equipment Surveys, Self-Inspections, Routine Hazard Analysis, Employee Reports of Hazards, Accident Investigations, and Trend Analysis. All managers have extensive experience in the industry and are very familiar with the associated hazards and controls. This is evidenced by the extensive resources committed to safe operations at this site.

*Industrial Hygiene -* BESAFE has a comprehensive industrial hygiene survey system. A sampling strategy is developed yearly using baseline data and ongoing monitoring information. The safety department performs full shift monitoring for noise, lead, organic solvents, etc. All results were well below OSHA’s PELs. Industrial hygiene monitoring and analyses are conducted in accordance with nationally recognized industrial hygiene protocols.

While interviewing the safety manager, you learn most noise monitoring is done using a sound level meter. The industrial hygiene sampling strategy doesn’t discuss the use of sound level meters, but states all noise monitoring shall be done using dosimeters. The safety manager informs you he has found several areas of the facility with noise levels above 90dBA. All employees are required to wear hearing protection. A review of the audiograms indicated all employees were tested. One employee was found to have suffered a standard threshold shift and was recorded on the log, but was later lined out because the company doctor determined it was due to non-work related noise exposure.

*Pre-Use Planning -* BESAFE has a program requiring contractors and rental vendors to provide a verification of inspection of equipment prior to entering the site. The equipment is then provided a BESAFE sticker indicating this inspection. Once equipment is onsite it is subject to BESAFE audits. All new processes or chemicals are reviewed thoroughly prior to use in order to ensure control and prevention of hazards.

*Hazard Analysis -* BESAFE restructured their job task analysis program in Year 1 to form the Job Safety Analysis team (JSA), which identifies job steps, hazards, and protective measures to reduce the potential for incident or injury. The goal of the JSA team is to identify and mitigate hazards on non-routine and high risk tasks. The team is compromised of 12 representatives from various departments within the facility. The team believes this allows them a broader base of ideas to identify and mitigate hazards.

Once the JSA is completed for a task and the hazards, protective measures, and necessary PPE have been identified, the JSA will be reviewed and signed by the employees performing the job. The JSA will then be placed in the JSA notebook for documentation and attached to the BESAFE Maintenance and Contractor Safe Work Permit file for review. The team members continuously evaluate the program and any improvements will be communicated to employees.

*Routine Inspections -* Worksite safety and health inspections are conducted by BESAFE employees on a daily and monthly schedule, covering the entire worksite quarterly. A team made up of members of the VPP Team and volunteers from other work areas conduct the inspections. Action items are set and the report is entered into a computer software program titled “Dilbert”, where action items are tracked to completion. In March all employees were given a four-day training course for hazard recognition by the corporate office. Management participates on each quarterly inspection and written guidelines are used by the teams to conduct the inspections.

*Employee Hazard Reporting System* - A review of the written hazard reporting system indicated the system is working effectively. Several reporting mechanisms for safety and health concerns are used. Employees can report a hazard or unsafe condition to their supervisor, submit a work order, fill out an “Employee Safety Concern” form, contact a member of the Central Environmental Health and Safety Council, or call the safety department. Employees can report concerns anonymously report using the Employee Safety Concern form, make suggestions using the suggestion form located by the entrance gates. Responses to anonymous suggestions are posted at the gates, on employee bulletin boards, and in the monthly newsletter. Employees can access the Dilbert tracking system to determine the status of any action item or work order.

*Accident/Incident Investigations -* All injuries/incidents are reported using the Supervisors Immediate Report (SIR). Employees are required to report all injuries/incidents immediately. Once an incident is reported, the supervisor will complete and submit a SIR, and a determination will be made as to whether an investigation will be conducted. Accident investigations are always conducted for accidents resulting in a lost time injury, but seldom for an accident resulting in a recordable injury unless it required significant medical treatment. BESAFE uses the TapRoot Causal Tree Problem Solving Process to identify why the incident happened and what steps must be taken to prevent recurrence. Incident information is available to all personnel via the web-based safety information page. Supervisors are trained in the use of causal factor tools. A review of records indicated a pattern of thorough investigations and completed action items. A review of nine accident investigations did not reveal a tendency by the accident investigation team to routinely blame employees for the accident.

*Trend Analysis -* BESAFE conducts trend analysis by reviewing injury/illness history, using data collected in the hazard tracking system, and the tracking system used for accident investigations. Employees can easily access reports and graphs that reflect data computations. Formal reports are generated for each main business unit on a quarterly basis and reviewed with the responsible area manager. This report consists of an analysis of the following elements: non-recordable first aid cases, OSHA recordable injuries or illnesses, the number of near miss reports completed, body part injury data, type of exposure injury data, and commonly chosen behavior observation findings that need improvement. Frontline supervisors discuss areas that need improvement and areas that show good performance with the employees during one of the scheduled safety meetings. Specific data such as type of exposures, affected body parts, or “at risk behavior” can be identified and shared with employees via a safety stand-down meeting. This meeting is held to raise the awareness and re-focus attention to specific safety issues.

## **Safety and Health Program Observations**

**Hazard Prevention and Control**

*Certified Professional Resources -*The site has a Certified Industrial Hygienist (CIH) working at the site. A Certified Safety Professional (CSP) worked at the site until about a month ago, but has since changed companies. The CSP has not been replaced, but BESAFE is seeking a replacement. Another CSP is available through the corporate office. The site also has access to a CIH through the corporate office.

*Hazard Elimination or Control -*

*Engineering Controls -* Engineering controls are the preferred method for eliminating or minimizing employee exposure to hazards. These methods include the use of machine guarding, ventilation controls, mechanical lifting equipment, and chemical substitution.

*Administrative Controls -* Administrative controls are used at this facility. Computer programs suggesting stretch breaks have been installed on the computers of data processors, and employees working on the assembly line participate in a job rotation program with employees in the warehouse.

*Safety and Health Rules -* Written safety and health rules have been established and are made available to all employees after they have been instructed on their content. These rules include the appropriate selection of needed PPE.

*Personal Protective Equipment -* An adequate workplace assessment for appropriate personal protective equipment has been accomplished. Required equipment includes safety glasses with side shields, safety goggles, hearing protection, face shield, gloves, and respirators.

*Hazard Control Programs -* Among the effective hazard control programs are bloodborne pathogens, confined space entry, preventive maintenance, hazard communication, and respiratory protection. The lockout/tagout program ensures all employees involved in a covered activity are provided the protection of their own personal lock.

*Preventive Maintenance*- A computerized system is used to scheduled and track all preventive maintenance at the site. The “Dilbert” System includes all equipment and machinery requiring preventive maintenance to be performed, and schedules it at the appropriate intervals. The schedule is sent by E-mail to the maintenance manager on a daily basis so work assignments can be made. If the maintenance is not completed in the time allowed by Dilbert, another E-mail is sent to the maintenance manager and the plant manager. The plant manager then ensures the maintenance is conducted in a timely manner.

*Hazard Correction Tracking -* A tracking system developed by the VPP committee is used to track all hazards identified through accident/incident investigations, self inspections, the employee hazard reporting system, industrial hygiene surveys, etc. The system lists each of the hazards requiring correction, assigns a responsible party, notifies the responsible party by E-mail, and tracks when the hazards were corrected. The system also identifies when it has not been notified of a timely correction, and notifies the responsible party AND his supervisor. Employees are provided the opportunity to anonymously submit safety hazards for correction. The next notification notifies the two previous parties and the plant manager. A review of the hazard correction tracking form indicated approximately 50 percent of the items recorded in the last six months remained open for more than three months including several instances of missing machine guards, and exposed electrical wiring. When asked about the response time to these items the safety manager replied they correct the items as soon as they can, but maintenance is overwhelmed by their work and is having trouble keeping up In the interim, the machines were taken out of service and exposed electrical wiring was deenergized.

*Occupational Health Care Program -* The facility has a contract physician on site two days per week. On-site primary medical care services during the day shift are provided by an Occupational Health Nurse who is also the Corporate Medical Manager and a full time Registered Nurse (RN). The RN is on call 24 hours a day, seven days a week, but lives about five minutes from the facility. Several employees have been trained in first-aid and CPR, and are spread out through all work shifts. The guard service used to provide site security is also contracted to provide emergency medical services. All of the guards are certified paramedics and at least two guards are onsite at all times. Two full-service hospitals are located approximately 15 minutes away.

*Disciplinary System* - BESAFE has a written disciplinary system that specifies steps to be taken for violations of safety rules. The plant disciplinary policy is not specific to safety and health performance problems, but is used to address all forms of unacceptable conduct and/or performance problems. The program includes an oral warning, written reprimand, suspension, and finally termination; however, steps can be skipped, as appropriate. There is evidence that disciplinary actions have been taken to change the behaviors of at least one employee and one supervisor. Interviews indicated employees were aware of the disciplinary system. Employees stated during the interviews they have seen managers walk by employees not wearing PPE in the work area and did not take any action although they said this didn’t seem like a regular occurrence. Employees are aware that failure to follow safety rules could result in disciplinary action.

*Emergency Procedures -* The Emergency Response Plan is a written program that involves plans for handling unexpected operational incidents. Evacuation drills are conducted four times per year; twice for each shift. Employees with responsibilities other than evacuation respond to the incident, while all other employees evacuate and report to the rally point for a head count. The supervisor for the area uses an employee roster to track the employees that are present and those that were not there for the drill. The safety manager states that employees who are not present for the drill are brought in and walked through the evacuation procedures to make sure they understand what to do in an emergency. The headcount sheets for the last drill indicated no employees missed the last drill.

The written procedure covers all required elements and is adequate for potential emergency situations at the facility. Documentation such as rosters and reports indicates the program has been in place for more than one year.

## **Safety and Health Program Observations**

**Safety and Health Training**

*Program Description* - Formal safety and health training begins with a three-day employee orientation session which consists of eight core courses. Training includes hazard communication, mishap reporting, and PPE awareness. As many as 21 additional job-specific courses such as permitting, energy control, and confined space entry are taught to operational personnel. Successful course completion is determined by exam, and records are maintained by the training department. Refresher training on all company-required subjects is conducted annually. Training is conducted onsite and is mostly computer-based in nature.

*Supervisors -* Supervisors understand the hazards of the site and how to protect themselves from these hazards and understand their safety and health role. Employees interviewed indicated recognized hazards either were corrected by them if possible or would be reported to their supervisors who would ensure correction. Supervisors are responsible for ensuring employees under their control receive all training required and that it is documented on training records. In addition to job specific training, supervisors are required to take 80 hours of enhanced training relating to their safety, health, and training responsibilities every three years.

*Employees* - Employees at this site were very knowledgeable in their job duties as well as their responsibilities in respect to safety. Employees participate in annual training to maintain their proficiency in their required job skills as well as to increase their knowledge and general understanding of the hazards to which they may be exposed. Employee training is tracked on a yearly basis. Employees have until December 31 of each year to complete all training requirements. The safety training coordinator is responsible for tracking employee training and ensuring it is completed by December 31. She stated during her interview she is sometimes frustrated when trying to get employees in to complete their training because the supervisors are concerned about the employees being away from their job, so they keep putting it off.

*Personal Protective Equipment -*

Employees receive training on various types of PPE during their initial orientation including the use of hearing protectors, and safety glasses. Also, employees receive additional specific training on PPE when it is required for their job, such as using respirators, face shields, goggles, etc. The training includes the reasons why the PPE is necessary as well as the risks associated with wearing it improperly or not at all. The training also discusses the limitations of the PPE, and how to maintain it properly.

*Managers -* Managers receive the same training as the hourly personnel and additionally must complete 80 hours of enhanced training to their safety, health, and training responsibilities every three years.

*Emergencies -* All BESAFE employees receive safety and health training initially and annually, including training on emergency situations from fire, chemical releases, or natural disasters. All employees interviewed indicated they had participated in an evacuation drill within the last year. The team noted when they came onsite there was very limited information for them regarding the emergency procedures for the site. They were told by the guard that they would be escorted during their visit and the escort would make sure they know where to go in the event of an emergency.

**Walkaround Observations** –

Several observations were made by the team during the walkaround. For each of these items, consider whether they should be considered **recommendations**, **90-day contingency items**, **best practice**, or **Merit Goals**:

1. Three out of 12 emergency exits were found to be blocked by pieces of portable machinery and equipment.

2. You notice that the work area appears very clean for this type of industry. You wonder to yourself whether your floors at home are this clean! You interviewed several employees who all stated this was a normal condition. The site shuts down a half day every week to perform cleaning of the work area.

3. A few of the eyewashes were found to be dirty, with no caps over the faucets. The inspection tags used by the VPP team during their walkaround to note the eyewash was checked, and was dated within the past week.

4. You notice that all employees are wearing appropriate safety equipment including safety glasses and hearing protection. Two employees are grinding near the back wearing a face shield and goggles.

5. During your review of the lockout/tagout program you noted the program had not been reviewed for the past two years. Two punch presses, a new 16" grinder, and a boring machine were observed during the walk around that weren’t addressed in the program. Interviews with managers and employees indicated the equipment had been purchased within the past year.

6. You observe several oxygen and acetylene cylinders in the contractor’s work area that are capped, and stored properly. You also observe three cylinders each of oxygen and acetylene that are stored together and left uncapped.

7. During the walkaround, you observed two unguarded saws in the machine shop.

8. You have heard a presentation from one of the Regional VPP Managers and you now know that automatic electronic defibrilators (AED’s) can save people’s lives, but this site does not have one.