Application For Accreditation Of Safety Programs Based On The Principles Of Behavior

Marathon Petroleum Company LLC
Illinois Refining Division

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A. Identifying information:

Name of the organization: Marathon Petroleum Company LLC/ Illinois Refining Division

Location of corporate office: Findlay, Ohio

Name of company representatives in charge of the application: Kathleen Isom and Bruce Cummins

Phone number(s) of the company representative: 618-544-2121

Address of the representatives: 100 Marathon Avenue
Robinson, IL 62454

E-mail addresses of the representatives: keisom@marathonpetroleum.com and bacummins@marathonpetroleum.com

B. The background conditions in your company:

The divisions of the company involved in the PBBS program: Illinois Refining Division

Their geographic locations: Robinson, Illinois

Good/services provided at each site: Petroleum refining, i.e., gasoline, diesel, etc.

Kinds of jobs in which worker are involved: Petroleum manufacturing operations, maintenance of operations, laboratory operations, technical operations support, clerical and management functions.

Recent non-safety initiatives and company changes:
2006 – Classroom diversity training for employees

2005 – Marathon Oil Company acquired the 38% interest owned by Ashland Inc. in Marathon Ashland Petroleum LLC and as of September 1, 2005, the company name was changed to Marathon Petroleum Company LLC (MPC). As of September 1, 2005, the company is named Marathon Petroleum Company LLC

2005 – Operations shift change from 8 hour shifts to 12 hour shifts

Recent non-PBBS safety initiatives:
2006 - Approximately $26 million was dedicated to safety equipment upgrades, fire system upgrades, the purchase of new safety equipment and security improvements.

2004 - Extensive Fall Protection safety procedure developed and class-room training held for applicable employees

2004 - Heat Stress Prevention Best Practice developed and implemented

2002 - OSHA VPP Star re-certification; Initial certification in 1999

2001 - STEPS (Systems to Ensure Participation in Safety) implemented, which is a structured safety program emphasizing direct involvement and accountability of every employee, at every level of the organization. Contractors are also included in the STEPS safety meetings. Please see additional information regarding STEPS under 'General Safety Methods' below.

General Safety Methods:
Dates in parentheses indicate when the particular safety methods were begun.

- STEPS (Systems To Ensure Participation in Safety) (2001) – The STEPS process has become an essential part of the overall safety program to reduce, and ultimately eliminate, injuries at the refinery. The process was implemented with the following Safety Mission Statement signed by the Division Manager, *'We will conduct all of our work in a manner that protects all employees and our community, while establishing a culture which values safety equally with the other aspects of our business.'*

  The STEPS process was implemented after STEPS training was conducted by a recognized safety consultant for all employees and lead contractor representatives. STEPS is a structured safety program emphasizing direct involvement and accountability of every employee, at every level of the organization. STEPS was meticulously tailored to meet the needs at our refinery and strengthens our existing safety processes. A few key points from the STEPS process are explained below:

  - All levels of management manage, lead and champion the STEPS process throughout his or her area of responsibility in order to achieve an accident-free work environment. A matrix has been designed for each level of management to track their responsibilities.

  - Each employee and lead contractor representative is trained, learning his or her specific safety responsibilities, such as area inspection and 'What-If' drill frequencies. (See Appendix A for Area Inspection form and Appendix B 'What-If' Drill form) Each employee is held accountable for the quality execution of these assigned responsibilities.

  - Sequential structures of safety meetings are implemented (i.e., Department, Area, Work Group). Every employee and routine contractor in the refinery participates in these safety meetings and is held accountable for participation by the Division Manager, who audits the program monthly. (See Appendix C for an example of a STEPS meeting agenda.)

  - In addition to sequential safety meetings, the STEPS program tracks the completion of the following:

    - SHORT (Surveying to Help Observe Risk Today) shot observations (See Appendix D for SHORT shot observation form and described in Section G),

- ACTS (Areas Communicating Trust in Safety) BBS (Behavioral Based Safety) observation videos (See Appendix E for ACTS BBS video observation form and description in Section G),
- Area inspections,
- Job hazard analysis (JHA) reviews (See Appendix F for JHA form),
- What-if drills, which are drills conducted by employees to test how they would respond to emergency situations such as a fire on a process unit,
- Individual tool-box meetings, which are a brief discussion regarding a safety topic by a supervior with his or her subordinate, and
- Annual safety performance reviews (See Appendix G for the Annual safety performance review forms for both supervisory and non-supervisory personnel.).

This tracking is completed by all levels of supervision. Each supervisor has a custom-designed matrix to record the required safety activities performed in their areas.

- Maintenance of safe work conditions through engineering controls, inspections, etc., is structured and stringently audited for completion.

- All Work Groups are audited annually to evaluate compliance with the STEPS process. (See Appendix H for example of a STEPS Safety Process Audit form)

- Responsible Care® (2000) - The Responsible Care® initiative is one of the frameworks that Marathon Petroleum Company (MPC) has chosen to demonstrate its commitment to the public and our employees. All members have one common vision of no accidents, no injuries and no harm to the environment. MPC was among the first companies in our industry to sign up for this volunteer initiative, which focuses on improvement through implementation of key environmental, health, and safety procedures, called the "Codes of Management Practices ."

  Responsible Care emphasizes the following:

  - Community Awareness & Emergency Response
  - Pollution Prevention
  - Process Safety
  - Distribution
  - Employee Health & Safety
  - Product Stewardship
  - Security

  For 2002 and 2005, the refinery was named the MPC President's Award for Responsible Care®. This award is given to recognize exemplary implementation of the Responsible Care® program within the company. This marks the fifth consecutive year that IRD has achieved either nomination for the award or the award itself, a record unmatched within MPC. IRD has not only shown sustained excellence, but has taken it to a new level in many areas. As the finalist for 2005, IRD received a $10,000 community outreach grant from the Marathon Oil Corporation Foundation to be donated to a qualifying local non-profit organization(s) chosen by our employees.

In July, 2007 an independent third-party auditor of IRD's Health, Environment, Safety and Security (HES&S) Management System conducted an audit. IRD achieved certification of our HES&S Management System as meeting the requirements of a Responsible Care Management System® (RCMS).

- Safety Training**:** IRD safety training meets all OSHA regulatory compliance topics, as well as site specific safety training, such as Voluntary Protection Program Awareness. Typical safety training includes the following topics:

    - Portable Fire Extinguishers
    - Emergency Response Awareness
    - Anhydrous Ammonia Awareness
    - Benzene Awareness
    - Hearing Conservation
    - PPE Awareness
    - Self-Contained Breathing Apparatus (SCBA) hands on
    - Asbestos Awareness
    - Industrial Ergonomics
    - Respirators
    - Confined Space Entry
    - HF Acid Orientation and HF Acid First-Aid
    - Work Clearance Permits
    - Hazards of Nitrogen
    - Voluntary Protection Program (VPP)
    - Responsible Care® Awareness
    - Environmental Awareness
    - Electrical Safety Non-Electrical Worker
    - Hazwoper Awareness Level
    - Access to Medical Records
    - Hazard Communication

  All hourly, management and support personnel who work in the refinery receive training, at a minimum, as required by the OSHA standards. A Training Matrix has been developed to identify the safety training requirements for each job description. For example, training includes topics such as Respiratory Protection, Hazard Communication, Hearing Conservation, Emergency Response Awareness, Asbestos, Confined Space Entry, and Benzene. Most of this training is conducted through computer-based training modules, with the exception of training that requires hands-on instruction, such as for Self-Contained Breathing Apparatus and Fire Extinguishers. The hands-on training is developed by safety professionals.

  The Training Department manages the documentation of mandatory safety training by utilizing the VTA "Virtual Training Assistant". Each employee's progress can be monitored by the individual and by his or her Supervisors. A reminder notification is sent via e-mail to the individual within thirty days of the required completion date. Monthly status updates of completed training for all areas are presented during the STEPS sequential safety meetings.

  The IRD training programs utilizes classroom, hands-on, and computer based training to meet the requirements set by OSHA standards. Web delivery ensures that the trainee receives their

training in a timely manner and may be completed at a self-paced style. To insure that the necessary individuals have received information, an electronic tracking program, "OTIS", records the training progress of individuals. Due dates are established at one, two, and three year intervals with a separate grouping for one time courses. All regulated safety training is verified as complete each December 31.

The Operator Training manual provides instruction to assist operators in the safe and efficient performance of tasks, and to provide them with a sequential learning path preparing them for their respective unit operator progression. The manual was developed through the efforts of process specialists and unit training coordinators, with the assistance of the training department. Safety and organizational training remains a priority and are completed prior to allowing employees in the field.

The Craftsman Training and Qualifications manual outlines a learning curriculum for new employees in the Maintenance Department. The manual also provides a personalized training plan for the following craft progressions: General Maintenance Craftsmen, Electricians, HVAC Technicians, Instrument Technician, Mobile Equipment Operators, Mechanics and Welders.

- Safety records: A variety of safety records are kept throughout the Illinois Refining Division (IRD). The following are a few examples:

    - Injury/Illness Records
      All employees have access to an electronic database to input first-aid reports. These reports are followed-up by the Company Nurse and by the Safety Department. Also, OSHA forms are completed if the severity of the injury is beyond a first-aid. The Safety Department initiates the OSHA forms and tracks them to completion. Near miss and incidents/injuries (other than first-aid injuries) are input into an Incident Report database. These reports are discussed each morning at the daily Refinery Management Team (RMT) Staff meetings. Using our Safety Standard Operating Procedure for Incident Investigations, the incident/injury is designated by the RMT by category and follow-up action is assigned according to the following procedures:

        - Injury/Illness records are recorded by body part and type of injury. They are tracked monthly, quarterly and annually. They are reviewed in the monthly STEPS safety meetings.
        - BBS Top Eight At-Risk Behaviors are tracked monthly, quarterly and annually. They are reviewed in the monthly STEPS safety meetings.
        - Knowledge Management System (KMS) Incident Reports are completed per the Process Safety Management (PSM) standard. (See Appendix I for Incident Report form)
        - Safety Opportunities Shared (SOS) near miss reports are published in the weekly refinery newsletter, The Mainstream. (See Appendix J for SOS form)

    - Exposure Assessment Records
      Exposures to benzene, noise, welding fumes, asbestos and lead are kept as exposure assessment records.

- Job Hazard Analysis
  Each area develops JHA's with emphasis on potentially high risk jobs. JHA's are reviewed as scheduled for each work group, and routinely updated. JHA's are scheduled and conducted as outlined in each supervisor's STEPS matrix.

- Annual Safety Performance Reviews
  These forms are conducted with the end-of-year performance review, to rate the employee's safety performance during the year.

- 180 Degree Feedback Review
  This form is conducted anonymously and is a semi-annual review of all supervision. Part of the form is to gage the safety performance of the supervisor. Feedback is given to the supervisor.

- Area Inspections
  Each area completes these safety inspections monthly, and for the entire refinery quarterly. The inspections review housekeeping items, proper storage of chemicals, labeling, etc. The results are reviewed by the owning department foreman and any deficiencies are corrected.

- Fixed and Portable Safety Equipment Inspections
  These inspections are conducted by each owning department as required, i.e., weekly, monthly, etc., for equipment such as safety showers, fire extinguisher and first-aid kits. The Safety Department audits these inspections quarterly to ensure they are being conducted. Results are discussed with the owning department and then sent to the Safety Supervisor.

- Process and Maintenance Shop Audits
  These audits are conducted by the Safety Department, covering the entire facility annually. They include topics such as electrical compliance, exit and egress, labeling, etc. Results are discussed with the owning department, and then sent to the Safety Supervisor for review. Any deficiencies are corrected.

- OSHA Regulatory Compliance Audits
  These audits, developed per OSHA standards, are conducted by the Safety Department at least annually for topics such as benzene, confined space entry and lockout/tagout. Any deficiencies are corrected and the results are reviewed by the Safety Supervisor.

- Contractor Field Audits
  These audits are conducted by the Safety Department, any deficiencies are corrected and the audit results are sent to the Safety Supervisor. Twelve field audits are conducted each quarter and cover topics such as confined space entry, excavation, and fall protection.

- Contractor Compliance Audits
  Four contractors are randomly chosen annually for a comprehensive audit by the Safety Department. This audit spot checks safety programs such as safety procedures required by the contractor, training conducted by the contractor, records of safety meetings, etc.

Any deficiencies are corrected by the contractor, and the audits are reviewed by the Safety Supervisor.

- STEPS Matrix Audits
  These audits are conducted by each level of Management and the Safety Department for the completion of safety programs such as:

  - Required safety meetings,
  - JHA reviews,
  - Area inspections, and
  - Tool-box meetings.

  Each level of Management reviews the matrices of their subordinates on periodic intervals. Then the Safety Department audits these matrices quarterly, reviewing all levels of management annually. These audits ensure that the above listed topics are being completed.

C. Descriptions of IRD workers:

Their ages: Median age is 46. Range of ages is 21 – 63.

Experience: Median years of experience is 19 years. Range of experience is 0 - 38 years.

Training: Operators receive approximately 480 hours each of technical training and on-the-job training. Maintenance personnel receive approximately 80 hours of technical training, and various amounts of on-the-job training depending on the job title. Annual refresher training is delivered on selected health, safety and environment topics for all refinery employees.

Education: All operators and maintenance employees have a minimum of a high school diploma, with several having college degrees. Employees such as safety professionals and engineers have a minimum of a four-year college degree.

Health: Employees are encouraged to participate in the company's wellness program and are eligible for health care insurance as an employee benefit. A full-time nurse is on staff and available during the day shift. Employees trained in first-aid are available during evening hours and weekends. An on-site rescue team is always available for emergencies.

Contractors: The refinery hires an average of 200 contractors a day, during normal working operations, to complete a variety of job tasks. These tasks include concrete and foundation work, pipefitting, insulation removal and installation, and storage tank cleaning. Each contractor is responsible to ensure that each of their employees is educated for their specific task prior to working in the refinery. Contractors must follow all OSHA regulations, as well as IRD safety procedures. An independent third-party contract firm reviews contractor safety programs before they will be hired by IRD. The safety data of contractors is monitored by IRD. However, these data are not included herein in the data reported for IRD.

D. Safety concerns:

In 1995, the total OSHA recordable rate was 3.63 for refinery employees. This rate was unacceptable. The Division Manager set a goal in 1996 to implement an hourly-employee-run principles of behavioral-based (PBBS) safety team. The trust and communication between management and the hourly workforce was generally viewed to be low. The new team was formed in 1996, implemented the program in 1997, and called themselves the Areas Communicating Trust in Safety (ACTS) Team.

E. The PBBS data:

- Injury/Illness Records - All employees have access to an electronic database to input first-aid reports. These reports are followed-up by the Company Nurse and by the Safety Department. Also, OSHA forms are completed if the severity of the injury is beyond a first-aid. The Safety Department initiates the OSHA forms and tracks them to completion. Injury/Illness records are trended by body part and type of injury. They are tracked monthly, quarterly and annually, being reviewed in the monthly STEPS safety meetings.

- PBBS Data – These data are pro-active not reactive information. PBBS data are collected by trained observers performing peer-to-peer job observations. These data include safe behavior as well as at-risk behavior, and the barriers that drive these actions. The data are entered into an in-house-developed database that has several trending options. Safe behaviors are reinforced (for example by approving comments by the observer), and at-risk behaviors are addressed at the time of the observation (for example by constructive feedback by the observer). Safety concerns are addressed through a follow-up system designed in the program and administrated by the ACTS Coordinator.

- Incident Reports – These reports include all incidents (other than first-aid injuries) from near misses to a lost time injury. They are recorded initially in the Knowledge Management System (KMS). These reports are discussed each morning at the daily Refinery Management Team (RMT) Staff meetings. Using our Safety Standard Operating Procedure for Incident Investigations, the incident/injury is designated by the RMT by category and follow-up action is assigned according to procedure. (See Appendix I)

- Safety Opportunities Shared (SOS) reports – These near miss reports are submitted by employee using the Safety Opportunities Shared form. The forms are sent through channels as indicated by flow chart in Appendix J. The near miss reports are then published in the weekly refinery newsletter, *The Mainstream*.

1. Why are these data important?

All safety data are trended with the objective to use the data to eliminate injuries. Ultimately the trends in lagging indicators, such as the overall OSHA recordable rates and lost time rates, indicate that the BBS program is making a positive impact on the safety at IRD (See graphs in Section H). The behavioral safety and injury data are reviewed in detail monthly, quarterly and annually during the STEPS safety meetings. Peaks in data

indicating an increase in the number of injuries for a particular body part or type of injury are highlighted, discussed, and acted on.

The at-risk behaviors observed during SHORT Shots are one of the leading indicators of potential developing problems at the refinery. The top at-risk behaviors are reviewed in detail during monthly STEPS safety meetings. This review heightens awareness of these behaviors and drives the ACTS committee to develop new programs to attack these trouble areas. The results are used to implement safety awareness activities through STEPS safety meeting topics, toolbox topics, and newsletter articles.

In addition to reviews during safety meetings, special teams have been formed to focus on the type of injury or body part affected in efforts to reduce the injuries. For example, an eye protection focus group was formed to review the types of safety glasses IRD provides. With employee input, changes were made to offer glasses that fit closer to the face, which offered better protection. Also, a hand safety focus group was formed when hand and finger injuries increased, as well as the at-risk behavior category of pinchpoints. Glove choices were modified with input from employees. This team developed a poster to educate employees and contractors on the type of glove best suited for specific jobs and management enforced the new glove usage. Finally, sprains and strains were noticed to be a leading type of injury at IRD in 2004. Therefore a plant-wide voluntary stretching program was rolled out in 2005 in which well over 50% of the employees participate.

2. How do you ensure that the data are accurate?

The Safety Supervisor determines injury classification, with assistance from MPC Corporate Safety as needed. OSHA reviewed IRD's injury data during VPP on-site evaluations in both 1999 and 2002, with no changes requested. In addition, MPC Corporate E&S Auditing conducts a comprehensive audit every three years, which includes a review of injury data. Finally, MPC hires an independent third party to conduct comprehensive E&S audits every two years at IRD, which includes a review of injury data.

BBS data are monitored by the ACTS Coordinator for consistency. Additional BBS Awareness training was conducted for all observers in 2004 to assist in consistent interpretations of at-risk and safe behaviors. Observers are given refresher training tri-annually which includes hazard recognition, correct completion of observation forms and other similar activities and techniques.

F. Description of your PBBS program:

ACTS is the refinery's BBS team. In this section, the effort of the ACTS team is provided in detail. The following are brief explanations the ACTS primary initiatives:

- SHORT Shot Observations - A field safety survey of an on-going task that are designed to increase hazard recognition skills and raise awareness. (See Appendix D)
- ACTS observation video - A planned taping of a job or task that provides reinforcement of safe behaviors or work practices. It can be used to evaluate task for at risk and safe procedures, behaviors or work practices (See Appendix E)

- ACTS Safety Action Process (ASAP) - A form used when appropriate avenues of communication have been exhausted, and the originating employee or group is not satisfied with the resolution. The completion of this form alerts management to focus on an identified hazard/problem. (See Appendix K)
- Safety Opportunities Shared (SOS) - This form informs others of an incident or occurrence that could have resulted in an accident or injury by communicating the near-miss. After making the SOS anonymous, the incident is communicated thru the weekly refinery newsletter, The Mainstream, and is evaluated during HAZOP reviews. (See Appendix J)
- Weekly Mainstream Articles - A short article or story used to try to influence the reader to behave safely.
- ACTS presentation for the STEPS safety meeting - A presentation given each month to inform and influence the behaviors of the workers in a group. ASAP up-dates and at-risk behaviors from the previous month's observations are included.
- ACTS Tool-Box Meetings at the Gates - A brief peer-to-peer awareness discussion conducted at the main gates and office doors. Often these talks are accompanied by the handing out of inexpensive topic related incentives.

G. Chronology of the PBBS Program

Pre-1996:

Before 1996, the safety process was management driven. The Illinois Refining Division (IRD) had a goal of zero lost time injuries. There was very little hourly employee involvement. Compared to the industry standards, IRD was generally performing better than average, but the OSHA recordable rate was still unacceptable. Several different safety programs were used trying to get more employee involvement. Due to lack of communication and trust, the programs failed. Then IRD had a change in Division Management in 1994.

1996-1999:

The new Division Manager was very concerned about the OSHA recordable rate. He decided to create a safety team made up of hourly employees and safety representatives, focusing on developing a Behavior-Based Safety (BBS) program. An outside BBS vendor was hired to help set up a program at the refinery. The vendor identified a lack of trust between management and hourly employees. However, the employees who were chosen to start the BBS program decided that the vendor's program was too structured for the mind-set of the refinery, at that time. The nine hourly employees and two safety employees decided to build their own program. They named the program ACTS (Areas Communicating Trust in Safety). Their mission statement was, '*To develop and implement, by hourly employees, a process to promote a safer working environment for individual areas.'* This endeavor was not without risks to both management and the chosen hourly personnel. Management allowed the committee developmental freedom and protection from disciplinary actions by their direct supervisors, and ACTS now had the challenge of promoting the evolving BBS program to their peers.

The ACTS program was officially implemented in 1997. The ASAP (ACTS Safety Action Process) was soon rolled out, and the program still remains today. If an employee brings up a safety concern to their supervisor which goes unanswered, then they can use this process to obtain

an answer. ASAP guarantees communication of safety concerns through the proper chain of command, with responses assured to the originator. No repercussions follow the use of this form. Trust was now beginning to develop at IRD.

The second program rolled out was the BBS Video Observation Program. These videos were filmed and viewed by the individual work group, where the at-risk and safe behaviors were pointed out and discussed. The tapes were then erased after the work group was finished viewing it. Again, no repercussions were seen by employees, and the lines of communication were opened further. Trust in the process continued to build, and ACTS continued to grow. Hourly employees were elected or appointed from each area or complex, and were trained to conduct safety meetings and promote the BBS process. These facilitators conducted monthly safety meetings with their individual work groups. As the success of the process grew, other programs developed. SOS (Safety Opportunities Shared) was started. This form was a way to anonymously publish near misses in the refinery's weekly newsletter, *The Mainstream*.

The injury rate was decreasing, and IRD set a goal to apply for VPP Star status in 1997, achieving it in 1999. Part of the VPP accreditation process included more formalized programs for JHA's, area inspections and tool-box meetings. Also, a peer-to-peer observation program had to be implemented. ACTS was asked to develop and facilitate these programs at that time. Area Inspection forms were designed and inspections were conducted. Tool-box meetings were conducted on-shift for Operations employees, and Maintenance started conducting tool box meeting every workday morning. An observation program was started with about twenty SHORT (Surveying to Help Observe Risk Today) Shot observers trained to perform peer-to-peer observations. In 1999, the first full-time ACTS Coordinator position was developed and has continued with annual terms. The ACTS Coordinator reports to the Safety Supervisor.

<u>2000-2004</u>:

In 2000, the need for management's involvement to support and enforce these added safety programs was recognized. Up to this point, management had very little involvement in the ACTS programs. In 2000, management appointed a cross-sectional committee of nine employees both salaried and hourly to address a recommendation from the OSHA VPP accreditation process, to develop a program to organize all of the IRD safety efforts.

In 2001, STEPS was implemented. STEPS included every employee from the Division Manager to Operators and Clerical Staff. ACTS became a segment of STEPS. This change allowed ACTS to focus on its main goal, which is Behavior Based Safety. The philosophy of ACTS used to be that, 'a worker should have the right to go home uninjured.' Now ACTS is trying to personalize safety and to encourage each individual employee to get involved. Their overall mission is to challenge each person to examine their choices involving safety at home and at work. The philosophy is now, 'You have the Right and the Responsibility to go home uninjured.'

To accomplish this mission, ACTS utilizes all of its safety programs and activities as tools to achieve this philosophy. These activities include developing and conducting a safety topic presentation at monthly STEPS safety meetings. ACTS representatives deliver the BBS portion of the STEPS safety meeting to all employees, from the Division Manager's meeting to the hourly Work Group meetings on a monthly basis, with the Office employees meeting quarterly. The

result is that ACTS team members directly interact with management and hourly employees on a regular basis, to educate and challenge them about BBS topics and data.

Other ACTS safety programs and activities include near miss recording and publishing, peer to peer observations, observation videos, BBS tool-box talks at the gates into the refinery for employees and contractors coming to work, writing articles for *The Mainstream* regarding BBS topics, tracking and analyzing observation data for trends, and tracking ASAP forms.

A major role of the ACTS Coordinator is to train facilitators to present the monthly/quarterly STEPS BBS safety topics. These facilitators bring employee feedback from these meetings to the ACTS Steering Committee members or ACTS coordinator for discussion. Other responsibilities of the ACTS Coordinator include organizing the agendas for monthly meetings with the Steering Committee and quarterly meetings with both the Steering Committee and the facilitators.

In 2004, due to the realization of inconsistent observation training, the ACTS team conducted refresher training for every employee that had been involved in the ACTS process. This training benchmarked our BBS concepts and goals. We now conduct refresher training every three years. In 2004, the ACTS team also trained contractor safety representatives, all maintenance employees, and all IRD leadership on BBS 'awareness' training.

2005:

In 2005, IRD implemented a new twelve-hour shift schedule for operations, products control operators, and some laboratory workers. With this new schedule, ACTS increased the number of facilitators trained so that each work group has their own representative. Facilitators rotate and are trained annually.

IRD employee awareness and observer training increased in 2005. For example, ACTS trained 104 maintenance employees to an awareness level with 43 of those becoming observers, several of which were foremen. This awareness training was a requirement of the IRD maintenance manager. This action has prompted other Departments to request awareness training in 2006.

The format of the ACTS data presentations for the STEPS meetings were improved in 2005. It was simplified to identify leading indicators separately, rather than showing them as cumulative data. This change has helped to identify trends of at-risk behavior for discussion during the meetings.

IRD continues to also set goals to improve contractor safety records. Safety meetings were already being conducted in the contractor's own areas, and their coordinators/safety representatives attend a STEPS meeting monthly. In 2005, contract companies were invited to send their workers to IRD's BBS 'awareness' and SHORT Shot training. They were encouraged to use IRD's forms to be included in the ACTS observation data base.

2006:

The ACTS team followed the Cambridge Center's recommendation, which was made during their on-site visit in 2005, and is training supervision in the Awareness/Observation BBS programs. All Maintenance Foremen and Supervisors were trained in 2005. ACTS has also trained Operations

and PDU Foremen in 2006. As of December 31, 2006, a total of 303 employees and 374 contractors are trained observers.

During both awareness and observer training for IRD employees, the Operations Manager (or a replacement) presents the topic of "Zero Tolerance". He reinforces the following: first, don't accept taking risks yourself, and second, don't accept your co-workers taking risks. He emphasizes to be assertive to talk with co-workers if they are starting to take a risk. IRD's goal is to one day have a culture that co-workers will thank the person correcting them. Finally, the Operation's Manager reinforces to employees to bring up any unsafe conditions in the work areas by going through the proper chain of command. The classes are generally 5-10 employees. The small group environment gives everyone a chance to speak to Management personally and to ask questions if they wish. It also shows Management's commitment to the BBS programs.

In 2006, a full-time hourly IRD employee was dedicated to coordinate and expand the contractor behavioral-based safety program. IRD views this addition as an opportunity to further enhance the safety within each contractor company, as well as the overall safety of the refinery. ACTS presented observer training to Craft Union officials to encourage them to add BBS training in their Apprenticeship Programs. Also, the IRD "Contractor BBS Program" was formally implemented in 2006 with two main components that are explained below.

- A written "BBS Commitment Pledge" to implement the contractor's own BBS program was developed with IRD's support and assistance. It is signed by the contractor company and IRD.

- The BBS "Contractor Advisory Panel" (BBS CAP) was developed to help facilitate and foster the spread and impact of contractor BBS programs. BBS CAP is comprised of representatives of the contractor companies (one per company) who have signed the BBS commitment pledge. To date, IRD has eleven contractor companies who participate in the BBS CAP. Each company is in various stages of building their own steering committees. These committees are set up in various ways with some that have hourly employees only, some with salary only, and some with a mix of hourly and salaried employees.

Training is conducted with all of the companies involved. IRD encourages that the individuals who will execute BBS training within their respective company attend and assist with refinery BBS training. The last class was conducted by BBS CAP member Freitag Weinhardt, who trained the new local #157 pipe fitter apprentices. Since 2004, 578 contract employees have been trained in the observation process.

During the Spring Turnaround in March and April, 2006, a "SHORT Shot Blitz" was conducted by four full-time observers dedicated to provide twenty-four hour coverage for BBS. Instead of the normal monthly average of 580 observations conducted by both IRD employees and contractors in 2006, the average number of observations conducted by both IRD employees and contractors for each of these months was 1,730. All observation data was entered daily and reported within that same day for 'real time' data. This data was dispersed to all of the IRD and contractor work groups for discussion during pre-shift tool box meetings.

The 2006 totals for contractors were 6,963 observations on 16,143 individuals. This increase was dramatic from the first year of recording contractor data in 2005, which was a total of 1,981 observations on 5,074 individuals.

2007:

Tragedy struck the Robinson Refinery on January 20, 2007. An employee was making normal rounds around an open neutralization pit in the HF Alkyation Unit. An apparent small release of concentrated hydrogen sulfide (H2S) gas was liberated from a chemical reaction in the pit. The employee was wearing a personal H2S monitor on his hardhat, and employees are trained to leave an area immediately when a personal or area alarm sounds. It appears that this employee was overcome by H2S vapors and collapsed. The monitor was alarming when help arrived at the scene, and the instrument had been properly calibrated. Operators in the area tried to revive him, as well as the on-site Rescue Team and local hospital personnel. He was pronounced dead at the local hospital within a couple of hours. The Crawford County Coroner received two toxicology analyses and the autopsy report in subsequent months. Given the absence of any other findings, the death was ruled accidental due to hydrogen sulfide intoxication (i.e., H2S poisoning).

OSHA completed its incident investigation and employee interviews with six serious citations to be issued as a result of the incident. Of the six citations, five citations were in the Process Safety Management Category, and one citation is in the Air Toxic Contaminants category. IRD chose not to contest any of the citations. A summary of the citations are listed below:

1. Process Hazards Analysis did not address all hazards of the process at the Alkylation Unit.
2. Employee exposed to airborne toxic hazard greater than the 50 ppm ceiling for H2S.
3. Process Hazards Analysis did not address human factors.
4. Employer did not develop and implement operating procedures for each covered process.
5. Written operating procedures did not address emergency operating requirements for the polymer surge drum draining.
6. Incident investigation was not started within 48 hours. A previous overflow of the neutralization pit last summer was not reported, therefore not investigated.

An informal conference was held with OSHA in July, 2007 to discuss the citations issued. The basic objective of the informal conference was again, not to contest any of the citations, but to communicate to OSHA the actions taken already and planned to be taken to address the citations, along with discussing our corporate and local IRD PSM initiatives. A settlement agreement capturing the abatement actions and their completion date of August 31, 2007 has been executed, as well as payment of an associated $25,000 fine.

Following the initial face-to-face communication meetings held with all employees regarding the fatality of our employee, IRD's Division Manager has sent several updates to employees and contractors, keeping all informed on the findings and resolutions of the both the internal and OSHA investigations. As of this date, SEA (independent forensics lab) is still in the process of testing the deceased employee's personal H2S monitor. The incident investigation report will be finalized and issued shortly after completion of the testing by SEA.

The Cambridge Center for Behavioral Studies visited IRD to assist with evaluating the incident from a BBS perspective. The Refinery Management Team (RMT) has followed-up with suggestions to look at ways to prevent low frequency/high severity incidents. To date, the steps listed below have been taken as a result of the incident investigation findings and the CCBS visit:

- To identify the Division's highest concerns, our Division Manager initiated the "Rededication Challenge" to the ACTS Steering Committee in late January 2007. He engaged all employees to list their chief areas of concern. The ACTS group established priorities based on input from the work group. Responsible persons were then assigned for each concern or group of concerns. These items are currently being tracked to completion with oversight by the RMT. As resolutions to the items are developed, the respective ACTS facilitator is reviewing the proposed plans with the appropriate work group(s) to ensure each issue has been properly addressed.
- Chartered a PSM Focus Team in early March led by our ES&S Manager. The team's purpose was to develop a PSM improvement plan for the Division.
- Developed and executed a Process Safety Cultural Survey for all employees. Also developed and executed a follow-up Process Safety Cultural Survey to address specific areas more in depth. All results of the surveys are posted on the PSM website, available to employees. The PSM group is following up on areas of concern from both surveys.
- Strengthened management of Relief Devices under PSVs.
- Developed a draft procedure to strengthen Pre-Startup Safety Reviews when restarting units.
- Strengthened and conducted hot work permit training for applicable employees.
- Developed PSM Roles and Responsibilities for supervisory personnel.
- Sent safety bulletins and held tool-box meetings to reinforce existing procedures that all alarms from monitoring devices (both personal and fixed) must be taken seriously by immediately leaving the area, notifying appropriate supervision, testing the area for wearing appropriate personal protective equipment, and then reporting each incident in the IRD KMS database. These reports are reviewed daily by the RMT.
- Sent additional safety bulletins reminding employees/contractors of the characteristics and potential hazards of H2S, the proper calibration of the personal monitors and the correct way to wear the monitors.
- Developed improved protocol for managing hazards of inadvertent chemical mixing.
- Completed a detailed Hazard Operability study on Alky Pit operation and Human Factors. An outside expert on Alkylation Units (UOP) was added to the hazard review team.
- Third Party Subject Matter Experts were consulted in order to modify our Chemical Reactivity Matrices.
- PSM Focus Team completed face-to-face PSM meetings with all employees.
- Strengthened the current incident reporting categorization to include a PSM Near-Miss reporting section.

As the PSM Group conducted face to face meetings with all employees this summer, a number of comments were received. The comments were noted and have been discussed with the RMT. The comments show three primary themes: Overtime/manpower concerns, training related concerns, and procedure related concerns. All three of these issues are being addressed in some fashion.

  - Additional Operations, Maintenance, and Engineering personnel have been hired to provide resources where needed.
  - Significant resources have been devoted to developing an enhanced Operations training program.
  - Dedicated coordination has been established for the Process Specialists and duties have been rearranged to allow the Process Specialist to have more focus on procedure development.

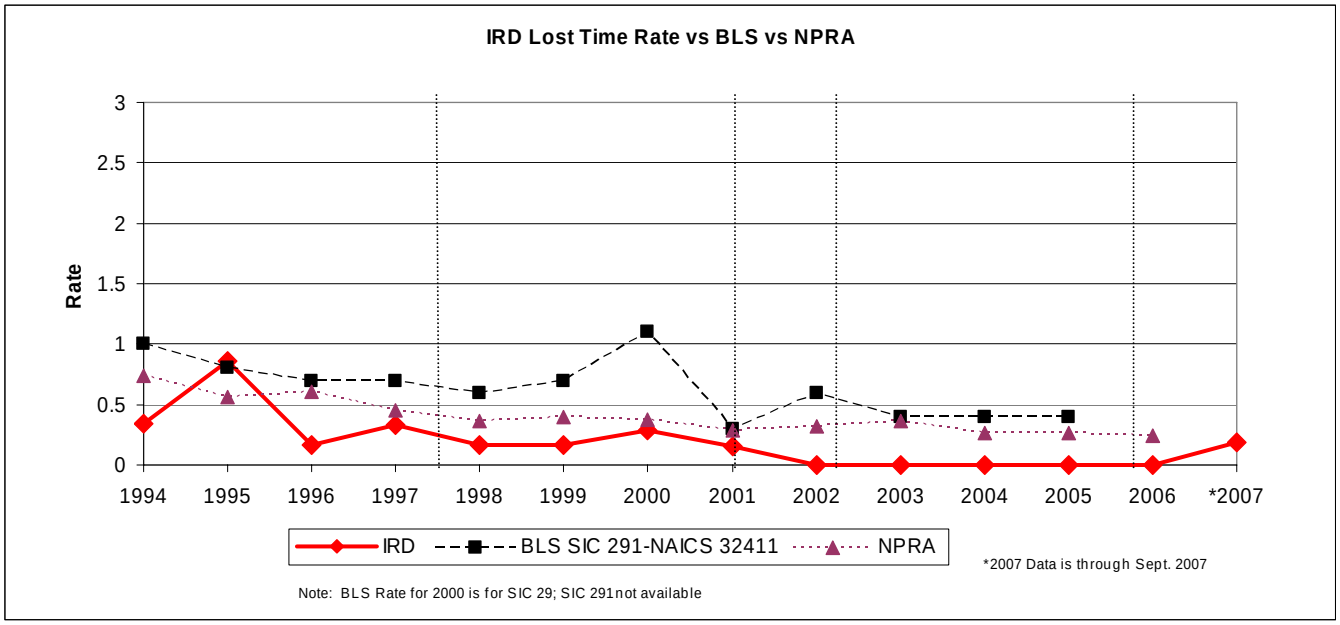
In August, IRD met with OSHA regarding our VPP Star status. OSHA will come on-site for our normally scheduled recertification VPP evaluation in the first quarter of 2008. They were pleased with the actions we had taken to date. Also, they have conducted an on-site VPP evaluation for one of our resident contractors, White Construction, who achieved VPP Star status in October 2007. In addition, they have scheduled an on-site evaluation with a third IRD contractor, Stewart Security, for January 2008. (Senco Construction became the first resident contractor in the state of Illinois and within MPC to achieve OSHA VPP Star status in 2006.)

From January 1, 2007 through September 30, 2007 there have been 13,697 observations on 28,949 individuals for both contractors and employees. For this same time frame in 2006, there were 8,372 observations on 17,701 contractors and employees. This increase in observations has significantly increased employee and contractor awareness. Lagging indicators are also showing improvement. Following the fatality, IRD's total recordable incidence rate has steadily decreased to a current rate of 0.58 through September 30, 2007, which is on target to be the second lowest total OSHA recordable rate ever for IRD.

While the OSHA settlement and abatements along with the internal investigation report will close the book on the incident, our Division Manager addressed all employees with the following statements: 'We must never forget the painful lessons learned from this tragic event. We must each truly recommit ourselves to zero tolerance towards our HES shortcomings, coupled with changing our personal behaviors and the organizational behaviors which have been accepting of inordinate risk and a "normalization of deviance." Changing such cultural issues will not be easy, and making the necessary refinery modifications will not be quick. We have no choice, though, but to continue to move forward as our experience and industry history clearly show the consequences of failure are too high. I remain confident that through everyone's efforts in working together, staying focused and in recommitting to excellence in all we do, we can continue the march towards our vision of an injury-free and incident-free workplace.'

H. **<u>Graphic displays of the data and analyses of those data</u>: (*All graphs include the fatality that occurred at the refinery on January 20, 2007.)***

Figure 1.



<u>Figure 1</u> displays the rate of lost-time injuries at IRD in comparison to the lost-time rate reported by the Bureau of Labor Statistics (BLS) for the entire oil refining industry in the United States of America and in comparison to the mean lost-time injury rate of the member refineries of the National Petroleum Refiners Association (NPRA). IRD is a member of NPRA. Therefore the IRD data are included in the NPRA data. Generally, NPRA safety data are somewhat better than BLS data.

IRD data were worse than both BLS and NPRA data in 1995. Since that time, the lost-time rate at IRD has been generally better than that reported by both BLS and NPRA. Part of this improvement came as the ACTS team was being formed. In 1997 the ACTS initiatives began and IRD began the process of applying for OSHA VPP Star status.

In 2001 IRD added ACTS SHORT Shot Observations and the STEPS program to the overall safety program. Now the IRD lost-time rate has been close to 0.0 for over five years while the NPRA data may be close to a plateau between 0.2 and 0.3. The reader should note that the Bureau of Labor Statistics has not yet released safety data for 2006.

Figure 2.

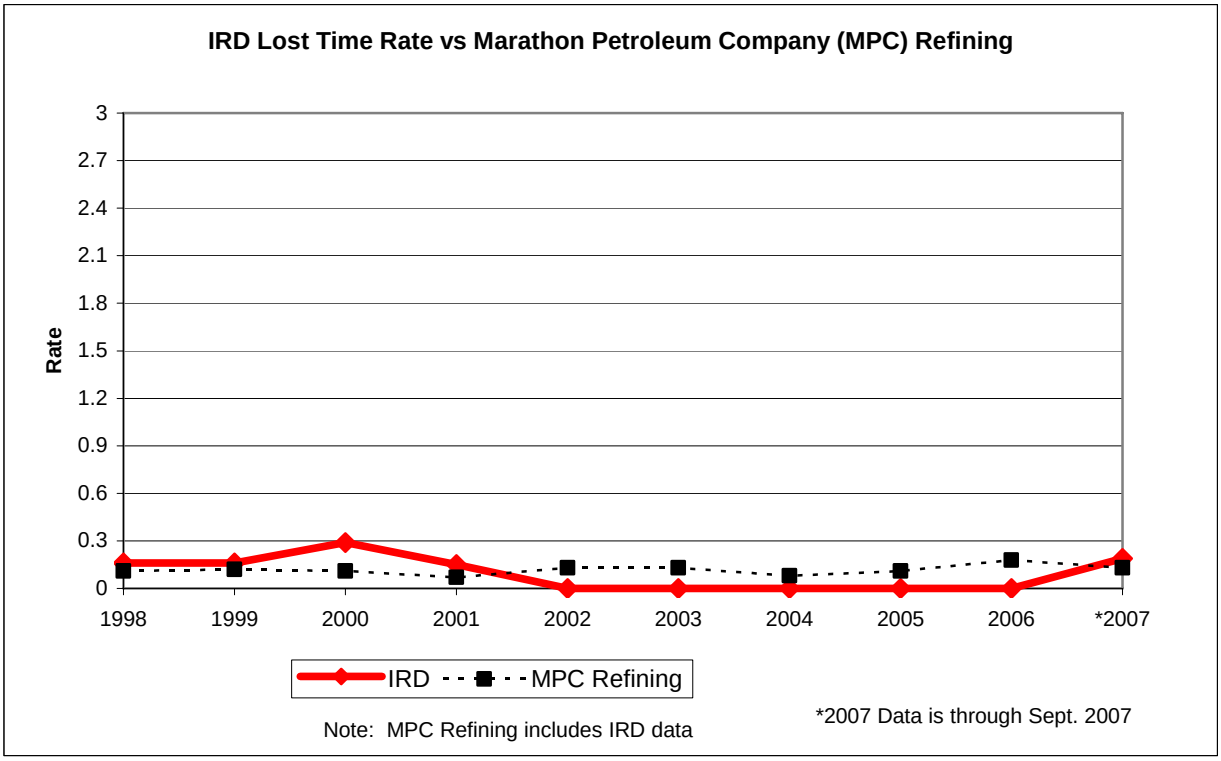


Figure 2 shows the lost-time rate at IRD in comparison to the mean lost-time rate at all of the seven refineries operated by Marathon Petroleum Company since 1998. None of the other refineries that are operated by MPC are precisely like IRD. They vary in size, in how modern they are and certainly in terms of the hazards workers confront.

MPC data have varied around 0.1 with little or no apparent overall improvement throughout these seven years. The lost-time rate at IRD was consistently higher than the company mean through 2001. However, beginning with the 2002 data, the IRD record has generally broken away from the company average. This argues that the improvements at IRD do not simply reflect tighter safety management practices throughout the company but are a result of the unique safety efforts at IRD.

Figure 3.

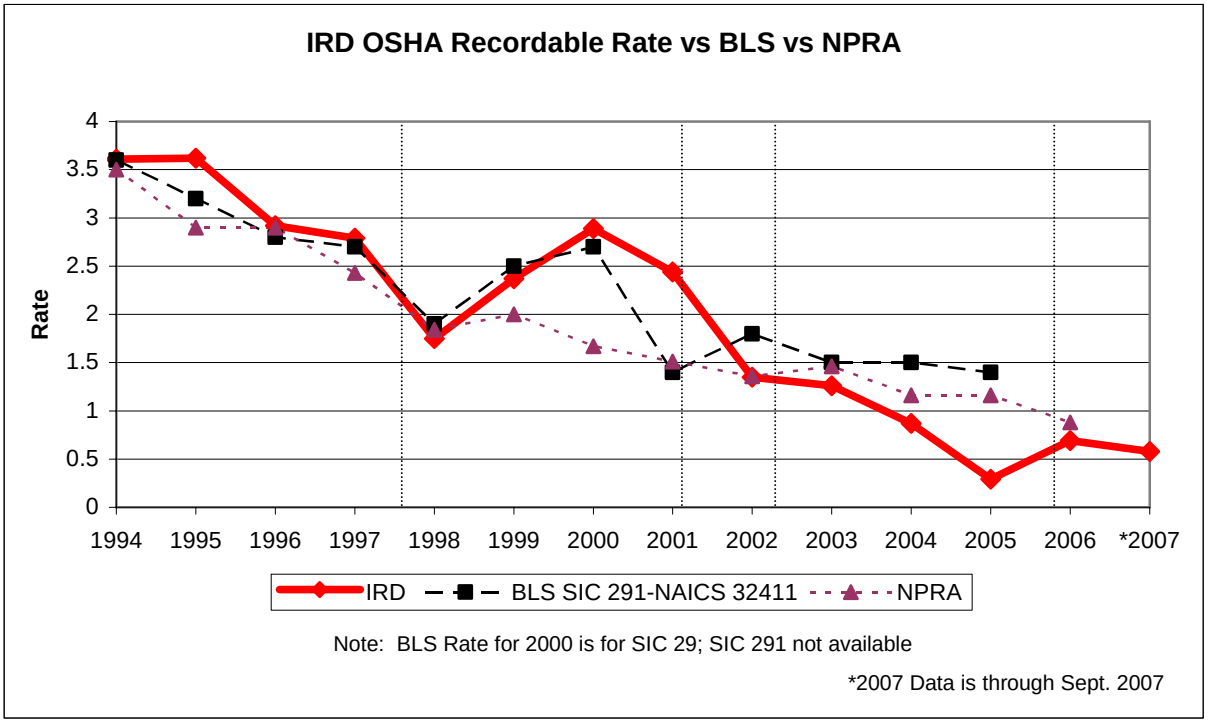


Figure 3 is a plot of the OSHA Recordable rates at IRD, and the composite rate of NPRA refineries and the OSHA Recordable rate reported for the refining industry by BLS. The three plots are close to each other throughout the 13 plus years with down trends in all three lines. However, beginning with the 2002 data, IRD's OSHA Recordable rate has consistently been at or below those reported by BLS and NPRA. At the end of September, 2007 IRD had an OSHA Recordable rate of 0.58.

Given the variability of the data in all three lines, it is too early to argue strongly that the safety programs at IRD have uniquely affected its OSHA Recordable rate. However, the data are promising and bear monitoring.

The reader should note that the Bureau of Labor Statistics has not yet released safety data for 2006.

Figure 4.

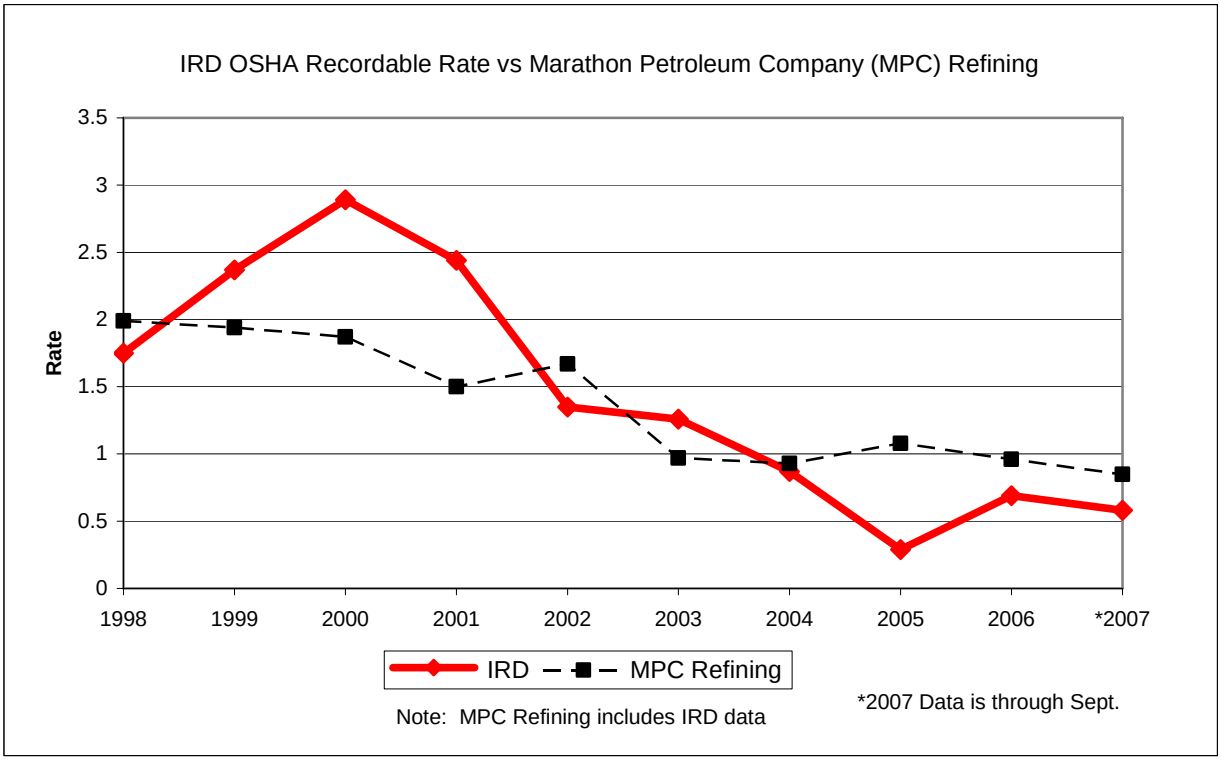


Figure 4 shows the OSHA Recordable rates for both IRD and the composite of all the refineries of MPC, which includes the IRD refinery. Again, it is too early to affirm that IRD has clearly reduced the OSHA Recordable rate at the refinery more than the refineries of the rest of the company.

Figure 5.

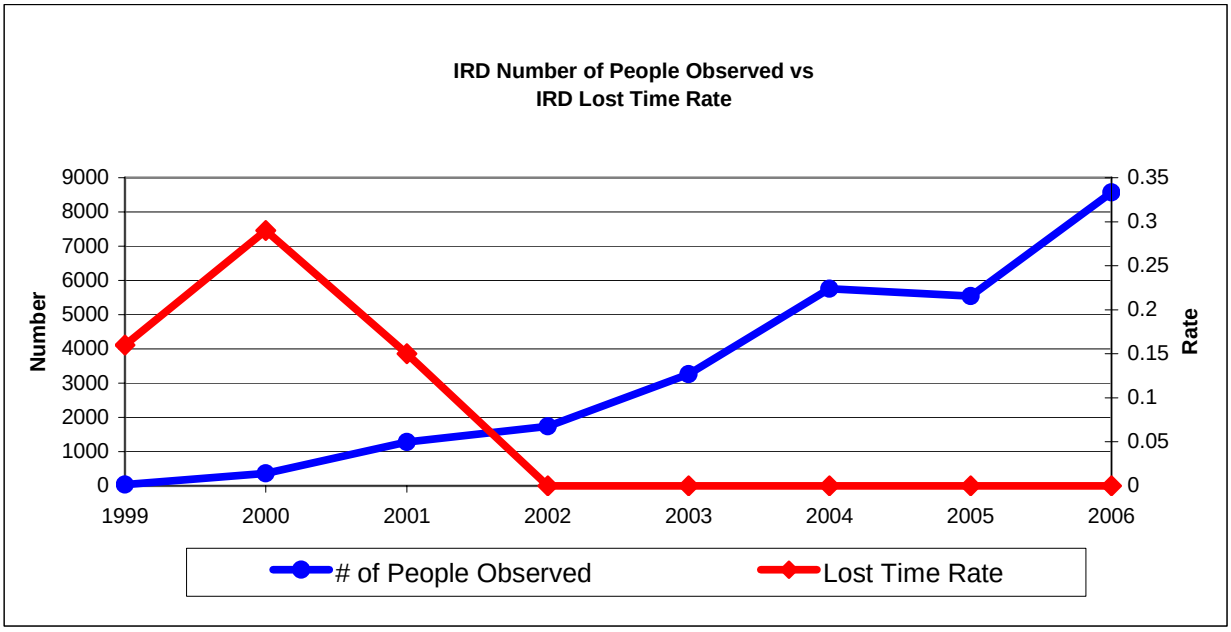


Figure 5 shows the above described decline of the lost-time rate at IRD in relation to the number of people observed. This inverse relationship between number of people observed, on one hand, and various measures of injuries, on the other, is commonly thought to be a characteristic of Principles of Behavior Based Safety programs but has rarely been demonstrated.

Figure 6.

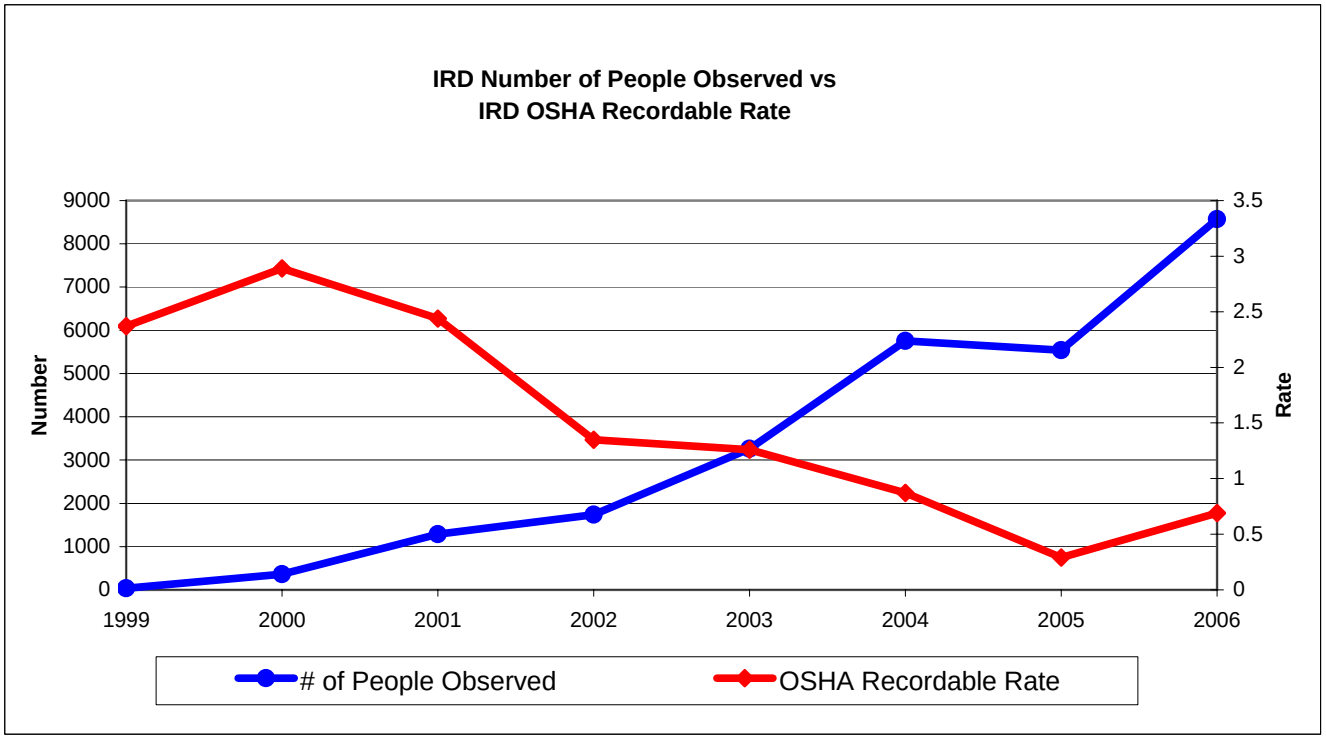


Figure 6 shows the inverse relationship between number of people observed and the IRD OSHA Recordable rate.

Safety professionals working with PBBS programs speculate about the "right" number of people observed. While this is interesting, it surely varies greatly with workforce, work conditions and the mix of safety initiatives. In the present case, the important observation is that the OSHA Recordable rate still isn't 0.0. Thus, further safety efforts are in order.

Figure 7.

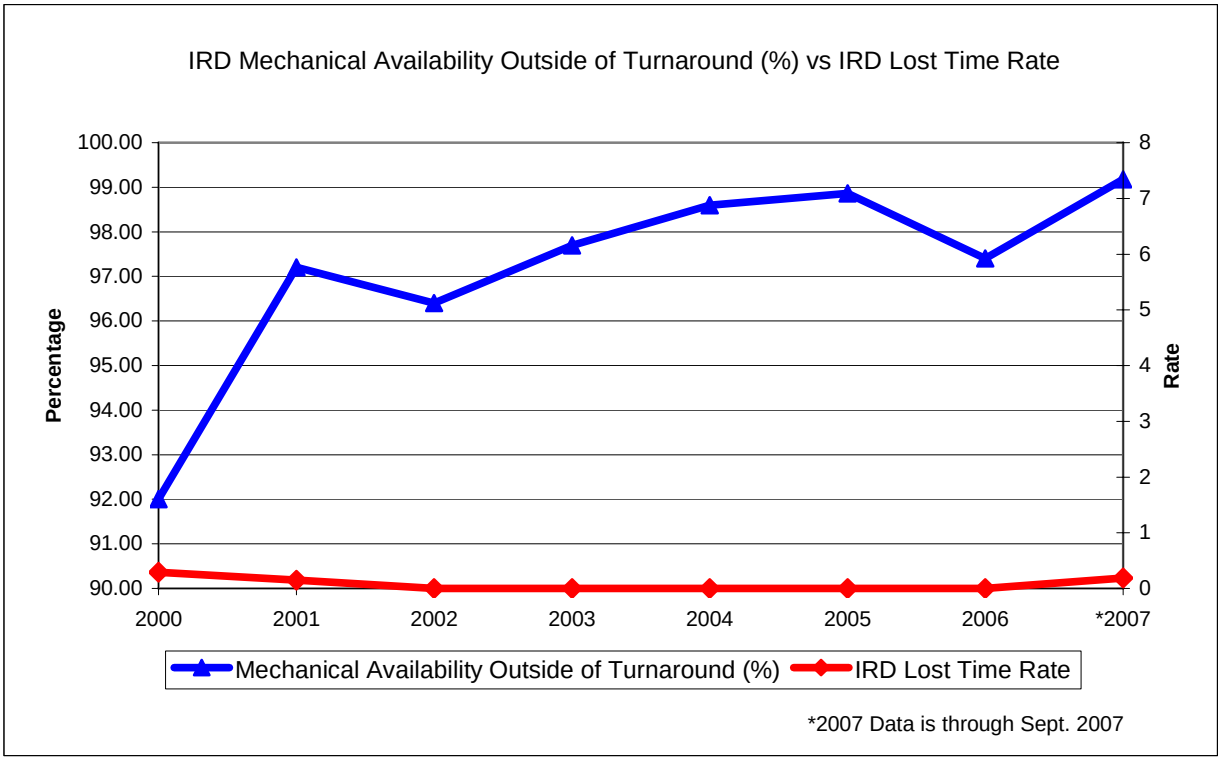


Figure 7 shows an important inverse relationship between a common measure of productivity and lost-time injuries. Management sometimes argues that emphasizing safety costs productivity. At IRD, some stoppages in production are planned to allow for maintenance. Otherwise, efficient use of the refinery dictates that it be operating as great a percentage of the time as possible. Mechanical availability outside of turnaround percentage is the IRD measure of such operating efficiency with 100% indicating that the refinery would be operating all of the time except when it is intentionally stopped for maintenance.

Figure 7 shows that this operating efficiency at IRD has increased as the lost-time rate has declined close to 0.0. These data make it clear that a safe refinery can be a productive refinery.

Figure 8.

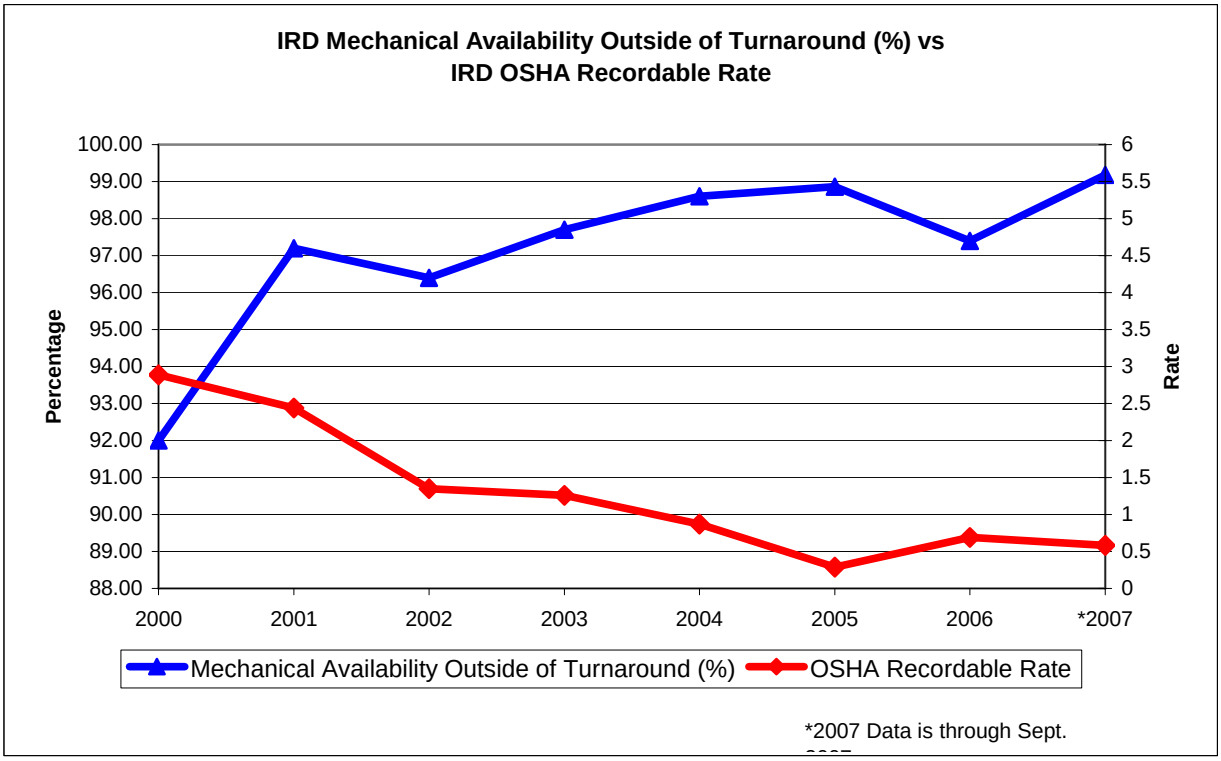


Figure 8 provides an examination of the relationship between mechanical availability outside of turnaround percentage and the OSHA Recordable rate at IRD. Again, there is strong evidence that it is possible to decrease injuries while increasing productivity.

IRD also provides initial evidence that one other common argument is not always correct. There is some evidence and frequent assertion that shifts longer than eight hours contribute to greater numbers of accidents. IRD changed from eight-hour shifts to twelve-hour shifts at the beginning of 2005. At the end of September, 2007 IRD has achieved an OSHA Recordable rate of 0.58.

It would surely be a mistake to argue that improved safety can always go hand-in-hand with improved productivity and shifts longer than eight hours. IRD provides a single case for such relationships and the conditions responsible for other organizations failures to obtain such results are unknown. This emphasizes the importance of other organizations attempting to obtain the kinds of results IRD has achieved, perhaps by using similar methods. IRD's methods for addressing productivity and shift changes are beyond the scope of this report.

I. Summary:

Prior to 1996, IRD had primarily management driven safety programs, with incidence rates that were unacceptable, with a total OSHA recordable incidence rate of 3.61 in 1994. This data were one indicator of the need to try new avenues for safety improvement. With a change in Division Management in 1994, the ACTS team was formed in 1996. This employee-led committee was charged with implementing a BBS program, but initially decided that they had to focus on bridging the trust and communication gap with management (See Section F for more detail).

In 1997, implementation of initial ACTS team initiatives, along with the beginning of the accreditation process for OSHA VPP Star status, began a great culture change within the refinery. Safety data support the effectiveness of these two initiatives, showing a decrease in OSHA recordable incidence rates to 2.79 in 1997 and 1.75 in 1998.

However, after the VPP Star status was achieved in May, 1999, and with the ACTS team only partially focusing on BBS activities, the data reflects a time in IRD's history where the refinery became somewhat complacent, and total OSHA recordable incidence rates increased to 2.37 in 1999 and 2.89 in 2000. Through the VPP accreditation process, the refinery became aware of the need for management involvement. The year of 2000 was a key year of transition to develop more structured safety programs.

As described earlier in Section B, the Responsible Care® initiative is one of the frameworks that Marathon Petroleum Company (MPC) chose to demonstrate its commitment to the public and our employees. In 2000, Marathon Petroleum Company LLC was among the first companies in our industry to sign up for this volunteer initiative, which focuses on improvement through implementation of key environmental, health, and safety procedures.

In 2001, ACTS SHORT Shot Observations and the STEPS program, which tied all of our safety programs together by involving all levels of management, were added to the safety methods and are now seen as key programs. As discussed earlier, a SHORT Shot Observation is a field safety survey of an on-going task that is designed to increase hazard recognition skills and raise awareness. The ACTS team had now become primarily focused on BBS, and management had an effective avenue to participate in safety through the STEPS program. The safety data, which shows a steady decrease in total OSHA recordable incidence rates from 2.44 in 2001 to 0.58 in September, 2007 reflects the positive effect these major changes. Also, the Lost Time incidence rate has been close to 0.0 since 2002. As all of the improvements in safety were occurring, the refinery has also achieved improvements in productivity. As discussed earlier, these programs continue to be enhanced following the tragic loss in 2007.

Appendix A

MARATHON PETROLEUM COMPANY LLC
ILLINOIS REFINING DIVISION
AREA INSPECTION REPORT

UNIT:_____ AREA/LOCATION:_____
DATE:_____ TIME:_____
INSPECTORS:_____RATING SYSTEM
E = EXCELLENT S = SATISFACTORY U = UNSATISFACTORY NA = NOT APPLICABLE NI = NOT INSPECTED

SAFETY CHECKLIST	RATING					LOCATION / COMMENT	ACTION PLAN	Completed (Y/N)	KMS (Y/N)
	E	S	U	NA	NI				
PPE SUPPLIES									
Eye/face protection									
Respiratory Protection									
Fall Protection									
Special Clothing									
Foot/Hand Protection									
Hearing Protection									
HOUSEKEEPING									
Shop Area									
Control Room/Lunch Room									
Office Area									
Work/ Jobsite Area									
Platforms/Towers/Tank									
Smoking Areas/ Other									
TOOLS & EQUIPMENT									
Right for the Job									
In Safe Condition									
Chains/Safety Gates									
Railings & Decking Structurally Sound									
GFCI or Assured Grounding (Contractor)									
Slings									
Equipment Guards									

SAFETY CHECKLIST	RATING					LOCATION / COMMENT	ACTION PLAN	Completed (Y/N)	KMS (Y/N)
	E	S	U	NA	NI				
All Signs and Labels Condition/ In Place									
Ladders/Stairs & Fixed/Portable									
Means of Egress									
Electrical Equipment Clearance (3' min)									
WORK PERMITS/ JOBSITE									
All Work Permit Sections Complete									
Lockout/Tagout									
Confined Space Entry									
COMPRESSED GAS CYLINDERS									
Work Area Cylinders									
Storage Area Cylinders									
STORAGE									
Tool Storage									
Supply Storage Area									
Flammable / Chemical Storage									
MATERIAL HANDLING									
Manual Lifting									
Mechanical Handling									
Barricades/Guardrails									
Drum/Tote/Container Labels & Condition									
Welding Machines									
Trenching/Excavations									
Scaffolds (Proper Tags)									
Lighting									
OVERALL COND.									

CONCERNS/ REMARKS:

Appendix B

“WHAT-IF” DRILL

DEPARTMENT / AREA_____WORK GROUP _____DATE_____

STATEMENT OF HYPOTHETICAL PROBLEM OR EMERGENCY:

RESPONSE TO SITUATION:

MATERIALS REVIEWED AND DISCUSSED (JHAs, MSDS, Standard Operating Procedures, etc.):

COMMENTS:

Appendix C

Example of STEPS Meeting Agenda

1. Review of Current Safety Performance
- Summary of significant injuries/incidents in June.
- Review of trend data for First Aid cases and OSHA recordable injuries.
- Review man-hour milestones for injuries/illnesses
- Projected Total Refinery OSHA Recordable Rate through the end of the year assuming no additional injuries:
- Discuss any concerns and corrective actions

2. Department Activity Reports
- Review/discuss outstanding action items from area inspections
- Significant activities last month
- Feedback from safety meetings, audits and inspections

3. Behavior-based Safety Report
- Significant findings
- Review trend data summaries

4. Safety-related Work Order update
- Review the Work Order summary
- Progress update for significant items

5. Safety-related Project update
- # of new, closed and open Engineering Work Orders
- Progress update for significant items

6. PSM Recommendations Status
- Review the status of outstanding PSM action items.

7. Safety Training Update
- Review training status summary.

8. Reports from Standing Safety Committees or Focus Groups

9. Update on Special Issues

10. Safety Improvement & Prevention Activities/Plans

11. Discussion of any safety related issues or concerns

Appendix D

S.H.O.R.T. Shot Observation Checklist

ACTS RR337 Rev. 3/03

SHORT SHOOTER _____

People Observed _____ Date _____ Time _____

☐ Operations ☐ Maintenance ☐ Contractor ☐ Self-Observation

Location _____

Work/Video Observed _____

_____

S	Procedures	A	S	Work Environment	A	S	Tools/Equipment	A
___	Permits	___	___	Job Surroundings	___	___	Proper Selection/Use	___
___	Mat'l Handling/Storage	___	___	Proper Lighting	___	___	Transportation/Travel	___
___	Lock out/Tag out	___	___	Housekeeping	___	___	Condition	___
___	Other _____		___	Other _____		___	Process Equipment	___
						___	Storage	___
						___	Guards	___
							Other	

S	PPE	A	S	People	A		Barriers
___	Hand Protection	___	___	Body Mechanics	___	1	Business Systems
___	Foot Protection	___	___	Line of Fire	___	2	Equipment/Facility
___	Eye/Face Protection	___	___	Pinch Points	___	3	Personal Factors
___	Respiratory Protection	___	___	Communication	___	4	Culture
___	Hearing Protection	___	___	Pace	___	5	Personal Choice
___	Fall Protection	___	___	Working/Moving	___	6	Unsure of / Disagreement
___	Protective Clothing	___	___	Carrying	___		on Safe Practices
___	Other _____		___	Handrail	___		
				Other			

Comments, suggestions & notes	

Send completed copy through e-mail or through Intercompany mail to your ACTS Steering Committee Encouragement Team Member.

Feed Back (Circle one)	**Comment By** (Circle one)	**Follow Up** (Circle one)
None Success Guidance	Observer Observed Both	Yes No Complete In Progress

Barrier Examples

1. Business Systems – Tangible things that can be corrected by making things more accessible, better training or by changing our way of doing things. Example: "The proper tool was not available to do this job" or "The worker was not adequately informed and did not know it was an at-risk."

2. Facilities and Equipment – Acknowledged at-risk working conditions and/or equipment. Example: Operator slips on ice as a result of overhead steam leak, or "I was working in the thunderstorm because we had to line up a tank."

3. Personal Factors – Intangible things that deal with personal issues, such as excessive fatigue, stress, medication or illness, or lack of attention. Example: "I locked out the wrong pump because I was a little tired today. My kids are sick and I was up all last night" or "I was worried about a big job coming up tomorrow and I lost focus on what I was doing today."

4. Culture – An at-risk behavior which is a long-established practice. Example: "I didn't wear my hearing protection because we've never worn it before" or "We've always used a cheater to get this broken loose" or "I'd ask for help but everyone else lifts it alone."Personal Choice – Worker has adequate skills and resources but chooses to work at risk to save time or effort. Example: "I know I should have worn my clear safety glasses to see more clearly, but I didn't want to go back inside to get them" or "I should have cleaned up that spill, but it's not my area" or "I should have put that hose up but I wasn't the one who used it."

6. Unsure of / Disagreement on Safe Practices - There is a disagreement with the SOP's or work rules, or the worker is not sure how to interpret the rules. Example: "The worker was unsure of whether H_2S monitor was required for entering this area" or "The SOP does not apply to this job. The way I'm doing this job is the safest way."

Appendix E

FACILITATOR'S MASTER VIDEO OBSERVATION CHECKLIST

RR 320 Rev.7/00

Shared Video ☐

Area Unit _____ _____ Date _____ Time _____

S	Procedures	A	S	Work Environment	A	S	Tools/Equipment	A
___	Permits	___	___	Job Surroundings	___	___	Proper Selection/Use	___
___	Mat'l Handling/Storage	___	___	Proper Lighting	___	___	Transportation/Travel	___
___	Lock out/Tag out	___	___	Housekeeping	___	___	Condition	___
___	Other _____	___	___	Other _____	___	___	Process Equipment	___
						___	Storage	___
						___	Guards	___
						___	Other	

S	PPE	A	S	People	A	S	Hazards	A
___	Hand Protection	___	___	Body Mechanics	___	___	Environmental	___
___	Foot Protection	___	___	Line of Fire	___	___	Electrical	___
___	Eye/Face Protection	___	___	Pinch Points	___	___	Chemical	___
___	Respiratory Protection	___	___	Communication	___	___	Other _____	
___	Hearing Protection	___	___	Pace	___			
___	Fall Protection	___	___	Eyes on Task	___			
___	Protective Clothing	___	___	Carrying / Moving	___			
___	Other _____		___	Handrail	___			
			___	Other				

Comments, suggestions and notes

Barriers		
1. Business Systems		
2. Equipment		
3. Personal Factors		
4. Culture		
5. Personal Choice		
6. Disagreement on Safe practices		

Use back of sheet if additional space is needed.

Send completed copy through e-mail or through Intercompany mail to your ACTS Steering Committee Encouragement Team Member.

Barrier Examples

1. Business Systems - “Every time I go to the store room to get gloves, they’re out of stock”. Or “This is the way I was trained to do this job.”

2. Facilities and Equipment - “There’s no way for me to get at that valve. It would be better if we could move it over here”.

3. Personal Factors - “I’m a little tired today, my kids are sick and I was up all last night”.

4. Culture - It’s no big deal, everyone does it this way”.

5. Personal choice - “I know I should have worn the hard hat, but I decided not to bother”

6. Disagreement on safe practices – “I don’t think your definition of safe behavior is right. This is the safest way to do the job.

Appendix F

JOB HAZARD ANALYSIS

JHA #	Work Activity:	Page of	Date:
Unit # / Area # / Field Location:	JHA Writer's Name (s):	Foreman Name & Initials:	
Reviewed By:		JHA Upgrade Dates and Initials:	
Safety Rules / SOP's That Apply:			

Job Check List for Personal Protective Equipment:

Safety Equip. and Permits Required:

	Hard Hats			Safety Glasses			Ear Protection			Acid Gear		Fire Ext.			HW & E Permit
	Harness/Lan.			Safety Goggles			LO/TO			SCBA		LO/TO			
	Safety Shoes			Face Shield			Work Vests			Other		Barricades			
	First Aid Kit			H2S Monitor			Gloves								
Work Crew															

A. List Sequence of Basic Job Steps	B. Write Down Potential Hazards	C. Recommended Safe Procedure
1. In case of Emergency		1.1 Review Escape Proc./Exit Route/Assem. Area
Additional Comments Pertaining to Specific Job (Follow Up in Two Weeks On Any Comments or Changes to JHA)		

Appendix G

SAFETY PERFORMANCE REVIEW
Managers, Supervisors, Foremen, Chief Operators and Coordinators

Name: _____

Department/Area: _____

Review Period: _____ to _____

Rating Definition

1 - Far exceeds performance expectations
2 - Exceeds performance expectations
3 - Fulfills expectations in most behaviors
4 - Generally meets performance expectations in some behaviors
5 - Fails to meet performance expectations

I.	**Leadership**	**Rating**
	• Actively supports the Division's Safety Mission Statement and has reviewed with work group.	1 2 3 4 5 NA
	• Develops and effectively implements safety goals and that support the Annual Safety Improvement Plan.	1 2 3 4 5 NA
	• Always considers safety in operational/maintenance discussions/decisions.	1 2 3 4 5 NA
	• Knows responsibilities as outlined in Safety STEPS Process and carries out as appropriate.	1 2 3 4 5 NA
	• Creates an atmosphere that encourages employees to bring up safety issues, problems, concerns, etc.	1 2 3 4 5 NA
II.	**Safe Work Conditions**	
	• Area inspections are completed as required, team members are appropriately involved and substandard conditions are identified.	1 2 3 4 5 NA
	• Appropriate actions are implemented and tracked to correct unsafe conditions.	1 2 3 4 5 NA
	• Housekeeping is a priority in the area and improvements are made as required.	1 2 3 4 5 NA

		Rating
III.	**Rules and Procedures**	
	• Possesses significant knowledge with regards to rules and procedures that apply.	1 2 3 4 5 NA
	• Always follows established rules and procedures.	1 2 3 4 5 NA
	• Regularly and consistently enforces all safety rules and procedures.	1 2 3 4 5 NA
IV.	**Safe Behavior Development**	
	• Provides coaching as required.	1 2 3 4 5 NA
	• Fully supports JHA effort including utilizing JHA's as a regular training tool.	1 2 3 4 5 NA
	• Emergency "what if" drills are conducted as required, data is utilized and necessary changes/training are completed.	1 2 3 4 5 NA
	• Regularly utilizes safety statistical data to plan future preventive activities.	1 2 3 4 5 NA
	• Individual tool box meetings are conducted in a timely, positive, specific manner.	1 2 3 4 5 NA
V.	**Safety Meeting**	
	• Sequential STEPS safety meetings are completed monthly, are well planned and presented. Consistently follows-up on action items and suggestions resulting from safety meetings.	1 2 3 4 5 NA
	• Attends and is an active participant in safety meeting.	1 2 3 4 5 NA
VI.	**Accident Investigation**	
	• Ensures and encourages the proper reporting of injuries and near misses.	1 2 3 4 5 NA
	• Corrective actions are defined, tracked, completed and reported on.	1 2 3 4 5 NA

VII. Other Requirements **Rating**

- Is up-to-date in terms of required safety training and personnel in area have completed required training. 1 2 3 4 5 NA
- Safety STEPS Manuals are maintained. 1 2 3 4 5 NA
- There are less than 10% KMS Action Items that are outstanding. 1 2 3 4 5 NA

VIII. Overall Numeric Rating _____

Comments (Strengths)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Comments (Performance Improvement Areas)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Employee Signature: _____

Reviewing Supervisor: _____

7/15/02

SAFETY PERFORMANCE REVIEW
Non-Supervisory Personnel

Name: _____

Department/Area: _____

Review Period: _____ to _____

Rating Definition

1 - Far exceeds performance expectations
2 - Exceeds performance expectations
3 - Fulfills expectations in most behaviors
4 - Generally meets performance expectations in some behaviors
5 - Fails to meet performance expectations

I.	**Leadership**	**Rating**
	• Actively supports the Division's Safety Mission Statement.	1 2 3 4 5 NA
	• Always considers safety in operational/maintenance discussions/decisions.	1 2 3 4 5 NA
	• Knows responsibilities as outlined in Safety STEPS Process and carries out as appropriate.	1 2 3 4 5 NA
	• Brings up safety issues, problems, concerns, etc.	1 2 3 4 5 NA
II.	**Safe Work Conditions**	
	• Participation in area inspections, as required.	1 2 3 4 5 NA
	• Completes assigned action items to correct unsafe conditions.	1 2 3 4 5 NA
	• Actively works to keep work area neat and orderly to improve housekeeping.	1 2 3 4 5 NA
III.	**Rules and Procedures**	**Rating**
	• Possesses significant knowledge with regards to rules and procedures that apply.	1 2 3 4 5 NA
	• Always follows established rules and procedures.	1 2 3 4 5 NA

IV. Safe Behavior Development

- Fully participates in JHA effort, when requested. 1 2 3 4 5 NA
- Participates in emergency "What If" drills, as required. 1 2 3 4 5 NA
- Participates in ACTS videos and Short Shots. 1 2 3 4 5 NA
- Has a willingness to stop a job for safety reasons or point out unsafe behavior. 1 2 3 4 5 NA

V. Safety Meeting

- Attends and is an active participant in safety meeting. 1 2 3 4 5 NA

VI. Accident Investigation

- Reports injuries and near misses. 1 2 3 4 5 NA

VII. Other Requirements **Rating**

- Completes required safety training. 1 2 3 4 5 NA

VIII. Overall Numeric Rating _____

Comments (Strengths)

_____
_____
_____
_____
_____
_____

Comments (Performance Improvement Areas)

_____
_____
_____
_____

Employee Signature: _____

Reviewing Supervisor: _____

1/5/04

Appendix H

STEPS Safety Process Audit

Department / Area / Work Group:_____Date:_____
Audit Team Members:_____
_____

YES NO

Category 1 – Safety Meetings

____ ____ **Work Group**

- ❑ Completed as required
- ❑ Attendance
- ❑ Planning
- ❑ Quality of Meeting
- ❑ Follow-up

Category 2 – Safe Work Conditions

____ ____ **A. Fixed and Portable Safety Equipment Inspections**

- ❑ Inspections Completed
- ❑ Checklist updated within past year
- ❑ Deficiencies noted and corrected

____ ____ **B. Area Safety Inspections**

- ❑ Checklist Completed
- ❑ Deficiencies noted
- ❑ Corrective action initiated

____ ____ **C. Safety-related Work Order Log and Engineering Projects Log**

- ❑ Current Safety Work Order Log
- ❑ Current Engineering Project Log

Category 3 – Safe Behaviors

____ ____ **A. Safety Rules and Procedures**

- ❑ Were Standard Operating Procedures (SOP's) followed during audit
- ❑ Employees wearing proper PPE

____ ____ **B. Safety Training Plan**

- ❑ Completed per schedule

____ ____ **C. Job Hazard Analysis**

- ❑ Completed per schedule
- ❑ Multiple Work Group members involved
- ❑ Available to all Work Group Members

____ ____ **D. ACTS observation videos / SHORT shot observations**

- ❑ Completed per schedule
- ❑ Reviewed with Work Group
- ❑ Data tracked and utilized

____ ____ **E. Tool Box Meetings**

- ❑ Completed per schedule

____ ____ **F. Individual Tool Box Meetings**

- ❑ Completed per schedule

Category 4 – Emergency Response Systems

_____ ____ **Emergency Drills and Exercises**

- ❑ "What-If" drills conducted as required
- ❑ Corrective Action initiated

Comments:_____
_____
_____
_____
_____
_____

Appendix I

Marathon Petroleum Company LLC
Incident Report

Part 1	Complete within 24 hours of Incident
Date:	**Time:**
Location:	
MPC Personnel Involved (indicate with * beside name if Initial Witness Statement was completed):	
Contractor Personnel Involved (indicate with * beside name if Initial Witness Statement was completed):	
Type of Equipment Involved:	
Incident Description:	**Category (check one):** ☐ 1 ☐ 2 ☐ 3 ☐ 4

Types (check all that apply):

☐ Accident	☐ Mechanical	☐ PSM
☐ Designated Environmental Incident (DEI)	☐ Near Miss	☐ PSM Near Miss
☐ During Maintenance	☐ OSHA Injury/Illness	☐ Reliability
☐ Electrical	☐ Operational	☐ Security
☐ Environmental – Non DEI	☐ Product Quality	☐ Third Party Damage
☐ Explosion	☐ Property Loss	☐ Vehicle Accident – DOT
☐ Fire	☐ Potentially Serious Incident	☐ Vehicle Accident – non DOT
☐ Lost Opportunity		

Material Released (if applicable):		Amount :		Duration:	

Persons Notified / Time:	

Preliminary Cause:	
Immediate Action Taken:	**Work Order Number:**
Comments / Suggested Recommendations:	
Signature/Date:	

Part 2 (Category 1 Incidents only)	**Complete within 20 days of Incident**
Cause:	

Recommendations	**Responsible Person (one name each)**	**Due Date**

Comments:	**Reviewed with Managers (NA or provide date):**
Signature/Date:	

Part 3 (Category 2, 3, or 4 Incidents only)	**Complete within 20 days of Incident**
TapRooT® Investigation Initiated (provide date):	
Comments:	
Signature/Date:	

Attachments	
Attachments (list below):	**Total Number of Pages Attached:**
A	
B	

Appendix J

Safety Opportunities Shared (SOS) Form

Mission Statement:

To prevent the occurrence or recurrence of events that may lead to injury, illness or fatality by sharing our experiences with others.

Date _____

Name (Optional)		Job Type	**OPTIONAL ITEMS**				
Area (Optional)			Routine		Rush Job		
			OPM		Start Up		
			Emergency		Shutdown		
Environmental Conditions			Other (Specify)				

What happened or almost happened?

What were the results or what could have resulted?

Suggestions on how to prevent an occurrence or recurrence?

Is additional follow up or corrective action needed?	YES		NO	

(Please attach additional sheets if more space is needed)

S	Procedures	A
	Permits	
	Mat'l Handling/Storage	
	Lock out/Tag out	
	Other	

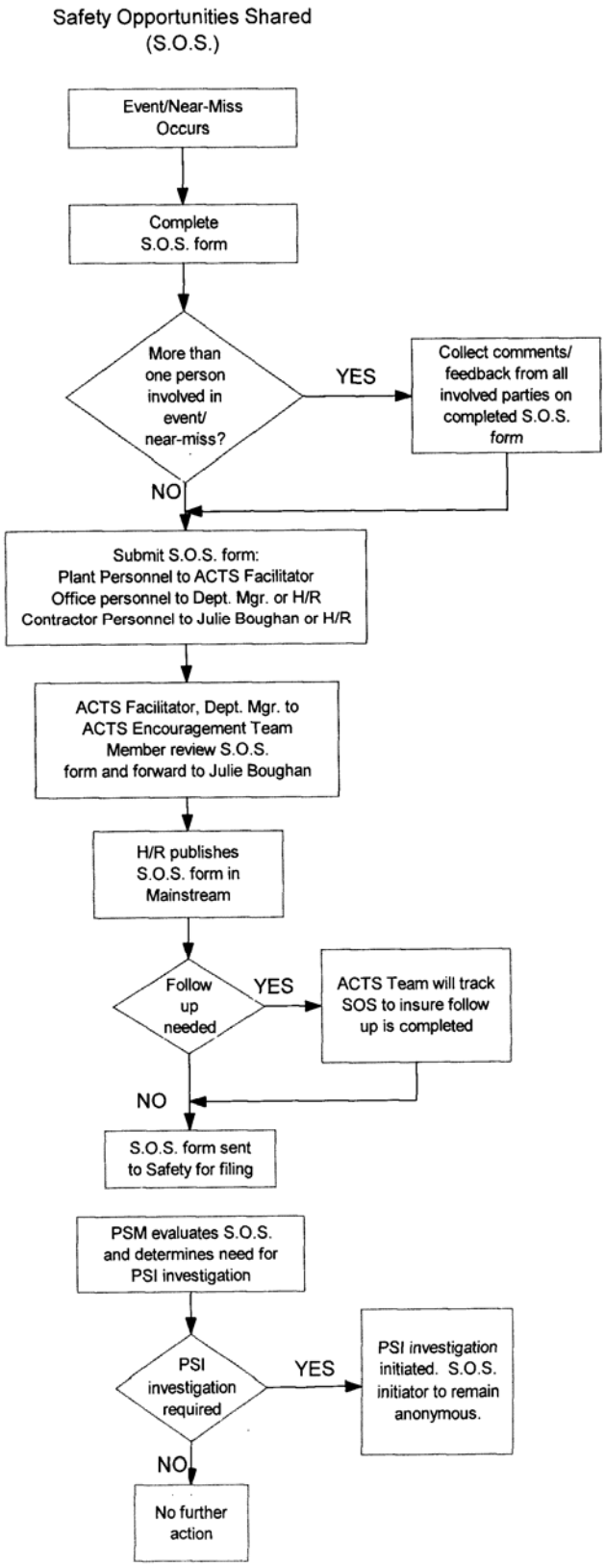
S	Work Environment	A
	Job Surroundings	
	Proper Lighting	
	Housekeeping	
	Other	

S	Tools/Equipment	A
	Proper Selection/Use	
	Transportation/Travel	
	Condition	
	Process Equipment	
	Storage	
	Guards	
	Other	

S	PPE	A
	Hand Protection	
	Foot Protection	
	Eye/Face Protection	
	Respiratory Protection	
	Hearing Protection	
	Fall Protection	
	Protective Clothing	
	Other	

S	People	A
	Body Mechanics	
	Line of Fire	
	Pinch Points	
	Communication	
	Pace	
	Working/Moving	
	Carrying	
	Handrail	
	Other	

S	Hazards	A
	Environmental	
	Electrical	
	Chemical	
	Other	



SOS Form Elements:

1. Anonymous - Including your name, work area and job type on this form would facilitate improved follow-up and feedback on this event (and allow you to earn points in the HES Recognition Program). However, you are permitted to omit this information if you wish.

2. There is no intent for any disciplinary action as the result of reporting of a SOS.

3. If applicable collect additional comments and feedback from all parties involved in the SOS before forwarding form.

4. Send completed SOS forms to one of the following:

Plant Personnel send to your Facilitator, Office Personnel send to the ACTS Coordinator, Contractor Personnel to Safety Dept.

5. SOS's will be printed in the Mainstream. Why? To prevent the occurrence or reoccurrence of events that may lead to injury, illness or fatality by sharing our experiences with others.

6. If follow up or corrective action is needed, SOS form will be forwarded to the ACTS Team to track to insure completion.

7. All SOS's will be evaluated for the possibility of further investigation based on Standard Operating Procedure (SOP) #14. If the event becomes a Potentially Serious Incident (PSI), the originator will remain anonymous unless he/she chooses to volunteer information for the investigation.

Appendix K

A.S.A.P.

ACTS Safety Action Process
Communication Loop

RR 39/Rev. 6/96

☐ Safety Concern ☐ IDLH/Stop Work Action ☐ Job Hazard Analysis

Originators Name: _____ Complex/Area: _____ Date: _____

Safety Concern/Comments: _____

Signature: _____ See Reverse Side for Originator Routing Instructions

LEVEL 1 CHIEF OPERATOR/CHEMIST

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

Action Taken/Explanation: _____

Signature: _____ Route to: (circle one) Foreman or Originator

See Reverse Side for Level 1 Routing Instructions

LEVEL 2 FOREMAN

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

Action Taken/Explanation: _____

Signature: _____ Route to: (circle one) Supervisor or Originator

See Reverse Side for Level 2 Routing Instructions

LEVEL 3 SUPERVISOR

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

Action Taken/Explanation: _____

Signature: _____ Route to: (circle one) Manager or Originator

See Reverse Side for Level 3 Routing and Copying Instructions

LEVEL 4 MANAGER

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

Action Taken/Explanation: _____

Signature: _____ Route to: (circle one) Plant Manager or Originator

See Reverse Side for Level 4 Routing Instructions

LEVEL 5 PLANT MANAGER USE ONLY

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

Action Taken/Explanation: _____

_____

_____

Signature: _____ Re-Route to: Originator

See Reverse Side for Level 5 Routing Instructions

SUPPORT GROUP(S)

Name: _____ Date Rcvd: _____ Date Fwd'd: _____

_____

_____

_____

Signature: _____ See Reverse Side for Support Group Instructions

ORIGINATOR CLOSURE SECTION ☐ Satisfied ☐ Unsatisfied

Comments: _____

_____

_____

Signature: _____ Date: _____

See Reverse Side for Originator Closure Instructions

Communication Loop Instructions

PURPOSE:
The communication loop is a tool for the Originator to receive a written response to valid safety concerns by routing the concern through proper channels.

TIMELINESS:
Concerns routed up to and through the supervisor level shall be responded to within 30 days. IDLH and STOP WORK ACTION will require an immediate response.

The ACTS TEAM will monitor progress of concerns submitted and assist with the process to encourage timely responses from all levels.

WHO CAN USE IT:
Any employee.

WHEN TO USE:
- When a safety concern has not been addressed.
- When a verbal response is not adequate.
- When a job hazard analysis is required.
- To follow up on a safety work order.
- STOP WORK ACTION used when immediate action is required.

ORIGINATOR SECTION INSTRUCTIONS:
- Check appropriate box.
- Write your concern.
- Signature required.
- Send one copy to ACTS TEAM.
  Keep one copy for yourself.

ORIGINATOR ROUTING INSTRUCTIONS:
Route the original completed form through proper levels of management (chain of command must be followed). If the answer is unsatisfactory, you have the option to send your concern to the level of management.

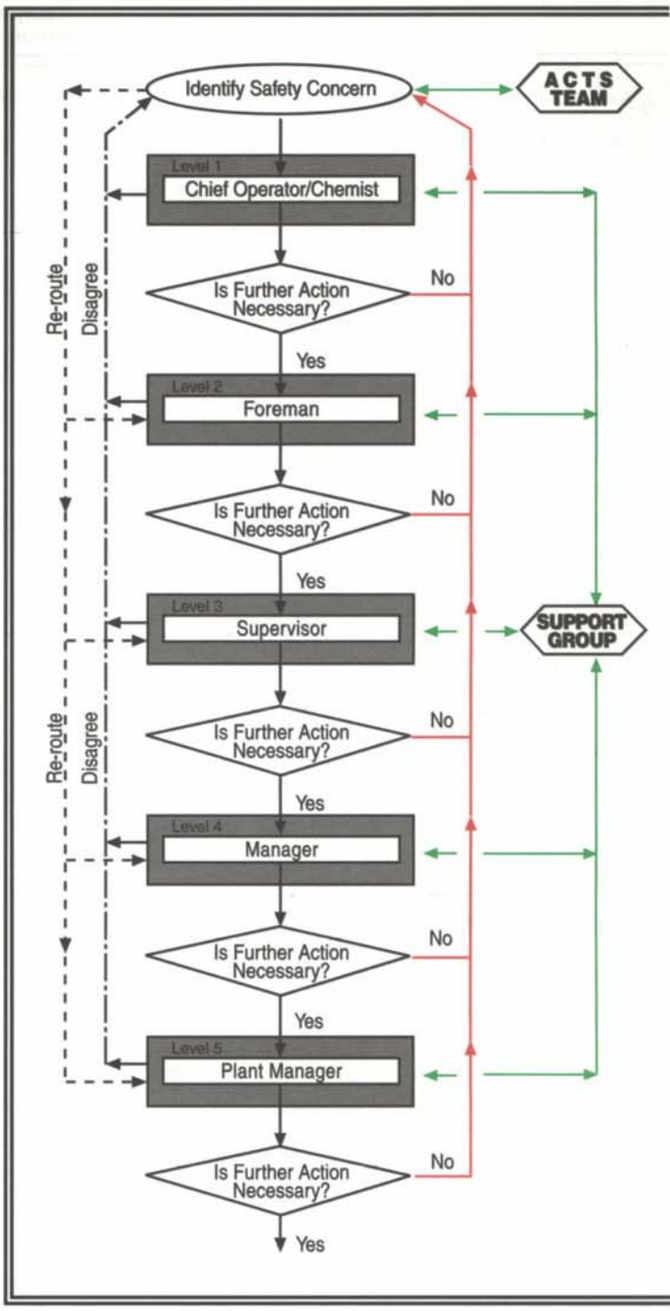
LEVEL 1 SECTION INSTRUCTIONS:
- Explain action taken.
- Signature required.

LEVEL 1 ROUTING INSTRUCTIONS:
- Problem solved; Send original back to Originator.
- Problem cannot be solved at this level. Send original to next level of management.
- Problem unsubstantiated; Send back to Originator.

LEVEL 2,3,4 & 5 SECTION INSTRUCTIONS:
- Explain action taken.
- Signature required.

LEVEL 2,3,4 & 5 ROUTING INSTRUCTIONS:
- Problem solved; Send original back to Originator through chain of command.
- Problem cannot be solved at this level. Send original to next level of management.
- Problem unsubstantiated; Send back to Originator through chain of command.

A.S.A.P. Communication Loop



* At any level, a person requesting assistance from support groups shall send a "copy" of the original to the support group and keep the original in your file until the response is completed. The response would then be attached to the original and forwarded to the next level or the originator.

** (Level 3 Only) If action is required beyond the supervisory level, the Supervisor shall send a copy to the Originator and the ACTS TEAM file with completed comments and additional information required.

SUPPORT GROUP SECTION:
Support group: Any group or combination of groups in the refinery which may assist with solving concerns.

Examples of Support Groups may include

Accounting	Human Resources	Purchasing	Product Distribution	Operations	Maintenance	
	Safety	Warehouse	Pumphouse	Includes Cx.	Inspection	Mobile Equipment
	Training Coordinator		Laboratory	1 thru 7	Gen. Maint.	New Construction
			Effluent Treating Plt.		Electrical	Turnaround Group
					Instrument	Scaffold Crew
					Electronics	Planners
					Machine Shop	Reliability

Tech. Services	Engineering
Environmental	Process Hazard Mgmt.
Tech. Serv. Rep.	Area Engineer
Computer Group	Drafting

SUPPORT GROUP SECTION INSTRUCTIONS:
- Action taken / Explanation
- Signature required.
- If more than one Support Group is used, attach additional paper work with copy of original.

ORIGINATOR CLOSURE SECTION INSTRUCTIONS:
- Satisfied: you are satisfied with results of your safety concern.
- Not Satisfied: you are not satisfied with results of your safety concern.
- Signature required.
- Return original to ACTS TEAM file.

DEFINITIONS
A.S.A.P = ACTS SAFETY ACTION PROCESS
SAFETY CONCERNS = ANY WORK PRACTICE OR CONDITION THAT YOU FEEL IS HAZARDOUS
STOP WORK ACTION = WHEN IMMEDIATE ACTION IS REQUIRED TO STOP UNSAFE WORK PRACTICES OR ELIMINATE UNSAFE CONDITIONS
JOB HAZARD ANALYSIS = EVALUATION AND EXPLANATION OF PRE-JOB, POST-JOB OR AN ONGOING JOB PRACTICE(S)
WORK ORDER APPROVED = HAS BEEN APPROVED BY ALL NECESSARY PARTIES