

**Comments of the United Steel, Paper and Forestry, Rubber,
Manufacturing, Energy, Allied Industrial, and Service Workers
International Union, AFL-CIO (USW)
On the
U.S. Department of Labor, Occupational Safety and Health
Administration (OSHA)
Process Safety Management (PSM) Stakeholder Solicitation of
Public Comments [Docket No. OSHA–2013–0020]**

These comments are submitted on behalf of the 850,000 members of the United Steelworkers (USW). We commend and thank the Occupational Safety and Health Administration (OSHA) for the informal stakeholder process soliciting comments on Process Safety Management (PSM) modernization. It is long overdue. The USW has a large segment of its members who work in PSM-covered facilities that manufacture, process, store or handle highly hazardous chemicals. These industries include, but are not limited to chemical, petroleum refining, paper, metals, explosives, and rubber manufacturing plants. The USW represents many of the union-represented workers in PSM-covered facilities across OSHA’s jurisdiction.

The USW is invested in improving and supporting effective¹ implementation of PSM regulations, enforcement, and facility programs across its represented workplaces. The USW has established Union-Management Health, Safety & Environment Committees and full-time USW Health, Safety & Environment and/or PSM Representatives at many of its PSM-covered workplaces. These include innovative initiatives such as the Triangle of Prevention (TOP) program where full-time USW representatives investigate incidents and near misses to help prevent future occurrences. The USW membership takes action to prevent chemical disasters every day in its PSM-covered plants – it is with this experience and commitment that we respectfully present our comments.²

Introduction and Summary

It’s been 30-years since the promulgation of the PSM standard. However, there have been no substantive improvement since that date to the federal PSM regulatory system despite the unrelenting PSM disasters and deaths associated with outdated OSHA PSM regulations. The federal PSM Standard was a historic step forward at the time, yet significant gaps have become apparent in both the regulatory language and enforcement scheme. It is also 15-years from the

¹ The Center for Chemical Process Safety defines PSM effectiveness in terms process safety management performance and efficiency.

² The USW will be making comments on needed changes to OSHA’s PSM regulatory system that includes both modernization of 29 CFR 1910.119 provisions but also the enforcement scheme. The Federal Register Notice provided for comment on “*any additional PSM-related issues stakeholders would like to raise.*” The USW believes that PSM enforcement issues are equally important to the PSM regulatory language and require significant reform.

issuance of reports and PSM guidance in the wake of the disastrous BP Texas City refinery (BPTC) fire and explosion. The incident led to 15 fatalities and was the most destructive industrial disaster in the previous 20-years and an inflection point for process safety reform. Many organizations including the USW, U.S. Chemical Safety Board (CSB), Baker Panel³ and Center for Chemical Process Safety (CCPS)⁴ issued reports and guidance recommending improvements in process safety performance. The USW,⁵ Congressional hearings,⁶ CSB BP Texas City (BPTC) recommendations,⁷ and surviving victims and families called for PSM regulatory and enforcement modernization. The USW Report “Beyond Texas City” recommended

In particular, OSHA should update and strengthen its 1992 standard on Process Safety Management of Highly Hazardous Chemicals (29 CFR 1910.119) ... Of course, OSHA standards are useless without strong enforcement. At the time of the BP disaster, OSHA had few inspectors trained to enforce its Process Safety Standard. The Agency has begun to train additional inspectors, but more could and needs to be done. Even with the additional inspectors, OSHA must commit to using the standard vigorously... OSHA needs to ensure that it gives such inspections the time, resources, and high priority they deserve.

In a hearing on the BPTC incident, the Chair of the House Committee on Education and Labor George Miller, a staunch OSHA supporter, stated that these PSM tragedies were an “old story...it is a story of the failure of the Occupational Safety and Health Administration to ensure that these facilities are safe for the workers who work within them.” However, after all the reports and hearings, OSHA did not implement a single revision to its PSM standard, choosing instead to focus temporarily on oil refinery PSM enforcement. The one regulatory recommendation to OSHA from the CSB BPTC report remains unacted upon with a status today of “unacceptable response.”⁸ Over the years despite the recommendations from the USW and several attempts at federal PSM rulemaking there has been little progress or change to the federal PSM Standard.

³ *The BP US Refineries Independent Safety Review* or “Baker Panel” was an independent panel formed to examine BP’s corporate safety management, oversight, and culture at its other North American refineries. The Baker Panel found serious issues with the state of process safety performance at BP that extended to lessons for the industry as a whole <http://sunnyday.mit.edu/Baker-panel-report.pdf>.

⁴ *Guidelines for Risk Based Process Safety*, CCPS, AIChE, 2007. The Center for Chemical Process Safety (CCPS) is a corporate alliance affiliated with the American Institute of Chemical Engineers (AIChE) the largest professional society for chemical engineering profession. Many employers with PSM-covered facilities are CCPS members.

⁵ *Beyond Texas City - The State of Process Safety in the Unionized U.S. Oil Refining Industry*, USW Report, October 2007, p. viii. http://assets.usw.org/our_union/oil_bargaining/beyondtexascity.pdf

⁶ <https://www.govinfo.gov/content/pkg/CHRG-110hrg33902/html/CHRG-110hrg33902.htm>

⁷ <https://www.csb.gov/bp-america-refinery-explosion/>

⁸ The status of the CSB BPTC regulatory recommendation on Management of Organizational Change (MOOC), last acted upon in 2013 remains “Open - Unacceptable Response.”

https://www.csb.gov/assets/recommendation/status_change_summary_osa_bp_txc_r9_o-ur.pdf

A prime example of the recognition of declining industry performance on one hand and the continuing modernization trend of PSM guidance within industry is the CCPS “Guidelines for Risk Based Process Safety”⁹ published in the wake of the BPTC incident. CCPS noted that *many organizations continue to be challenged by inadequate management system performance, resource pressures and stagnant process safety results*. CCPS expanded the 12-14 process safety elements typically identified in guidance and regulations to 20 including new elements such as Workforce Involvement, Measurement and Metrics and Compliance with Standards. The Guidelines also address topics such as the use of inherent safer technology, root case investigations, and management review and continuous improvement. As for the state of regulatory effectiveness, the CCPS Guidelines found the industry’s response to the existing federal OSHA PSM regulations has been *a minimum cost, compliance-based approach to managing process safety... ‘If [it] isn’t a regulatory requirement, I’m not going to do it.’*¹⁰ Similarly, the CSB concluded in its report on the 2012 Chevron Richmond refinery fire that regulatory process safety elements have not kept pace with modern guidelines such as those issued by CCPS¹¹

“As a result, the federal and California PSM standards have become static in the face of advancing best practices and technology, with the emphasis placed on the completion of a task or activity rather than achievement of continuous risk reduction.”

The compelling need for PSM modernization is underscored by ongoing chemical disasters that have led to unimaginable tragedy for our members, workers and devastated their families across the country. Many of the current issues are echoes from the reports and findings dating back to the 1989 Phillips incident – operating too long between maintenance turnarounds, downsizing and short staffing, the loss of experienced personnel, ignoring the hazards of aging equipment, failure to implement voluntary safeguards, and lacking a consistent, effective approach to process safety.¹² The historical record reveals that many of these major incidents are reoccurrences with the same employer or with similar causes that the employer failed to act upon. CSB reports show that too often workers identified the hazards that led to the incident and raised concerns with managers, but their attempts to act on safety issues or shutdown a process unit prior to the release were rebuffed or worse. Many of these events involve an employer unwilling to act on their own policies and/or the ineffectiveness of industry-authored recommended practices. PSM regulatory provisions that attempt to hold industry accountable to their own standards are undermined by lack of clarity in the definitions and overly permissive language. These are structural problems with the PSM standard that cannot be remedied by the

⁹ *Guidelines for Risk Based Process Safety*, CCPS, AIChE, 2007.

¹⁰ *Guidelines for Risk Based Process Safety*, CCPS, AIChE, 2007, p.2.

¹¹ *CSB Regulatory Report: Chevron Richmond Refinery Pipe Rupture and Fire*, January 2015, p.9., available at <https://www.csb.gov/chevron-refinery-fire/>.

¹² For example, see *Out of Control*, a documentary film by the then Oil, Chemical and Atomic Workers International Union (1990), <https://www.youtube.com/watch?v=RwDcbq0tMCc>.

current federal PSM provisions or misguided revisions that are largely activity based. Examples of activity based PSM elements include process hazard analysis (PHA), management of change (MOC) reviews or incident investigation reports that lack requirements for implementing more effective safeguards using the hierarchy of controls.

OSHA must aggressively move forward with expedited PSM rulemaking recognizing the dangers in delaying prevention of potentially catastrophic incidents. Recommendations from the CSB, an independent scientific agency with federal OSHA oversight authority and State Plan states have stressed the need for timely and comprehensive PSM modernization. The USW urges OSHA to take the following actions:

- **OSHA must implement comprehensive PSM regulatory system reform and the strongest possible protections for workers. Only comprehensive PSM modernization can address the serious deficiencies in the federal PSM regulatory system.** There have been many events of significance on the PSM landscape since the initial OSHA-listed PSM issues were developed from stakeholder comments. Those events include many PSM disasters involving large corporations (DuPont, ExxonMobil, Chevron, BP, Packaging Corporation of America), failure to learn from previous incidents (ExxonMobil Torrance, CA; Husky Superior WI) or key CSB regulatory reports and recommendations (Chevron Richmond and Tosco Anacortes refinery), and from California and Washington (CA/WA) PSM reforms. The significance of these developments highlights the need for OSHA to take a deeper, more comprehensive review of PSM reform. Any regulatory revisions need to go beyond tweaking of the existing regulatory language or a piecemeal approach. OSHA must expand the PSM issues beyond what is listed and implement comprehensive PSM modernization to protect workers most effectively from incidents, injuries, and deaths.
- **Federal OSHA must implement PSM reforms like those adopted by California¹³ and in draft form in Washington State¹⁴ for all PSM-covered facilities.** The USW has concluded that the California/Washington (CA/WA) petroleum refinery PSM modernization¹⁵ is the most protective of workers in the U.S.¹⁶ The reforms focus on strongly needed areas of modernization of the 30-year-old federal PSM Standard. These include:

¹³ California Code of Regulations, Title 8, Article 109, § 5189.1. Process Safety Management for Petroleum Refineries

¹⁴ https://lni.wa.gov/safety-health/grants-committees-partnerships/advisory-committees/_psmdocs/PSM-DraftProposedLanguageOTS-1344.6.pdf

¹⁵ The PSM modernization in California and Washington are limited to petroleum refineries but the reforms are needed to effectively address the PSM deficiencies that apply to all PSM-covered facilities.

¹⁶ <https://www.usw.org/news/media-center/articles/2017/california-leads-country-in-improving-oil-refinery-process-safety>

- Employee/union representative empowerment;
- Holding industry accountable for PSM performance with targeted risk reduction, the most effective safeguards utilizing the hierarchy of controls and strict requirements for PSM recommendations implementation; and
- New PSM elements that address the importance of organizational management system performance on process safety including human factors, safety organizational/culture assessments, Management of Organizational Change (MOOC), and others.

Federal OSHA must implement the hierarchy of controls and inherently safer to the “greatest extent feasible” as required by California.¹⁷ Requiring targeted risk reduction places the burden on the employer to implement the strongest possible PSM safeguards. In California, PSM recommendations must be accepted and implemented by the employer with limited exceptions. The California reforms were the result of lengthy multi-stakeholder meetings and are supported by a validated economic analysis. The California PSM (petroleum refinery) modernization has been in place since 2017 and is strongly supported there by the USW International Union, membership, and union Health, Safety & Environment and/or PSM Representatives.

- **OSHA must reform its PSM enforcement system to focus on planned PSM inspections conducted by a sufficient staff of technically capable specialized PSM inspectors following the model of California.** Prevention of potentially catastrophic incidents demands robust, planned inspections. OSHA IMIS inspection data reveals there are very few planned federal OSHA inspections at U.S. oil refineries in the last five-years compared to those conducted by Cal-OSHA. OSHA’s current Compliance Directive for the federal PSM Standard that focuses on planned inspections by specialist PSM inspectors has not been effectively implemented. Over the past five-years, California conducted 35 inspections or an average of seven inspections per year while representing only 10% of the US refineries (13-refineries operating [EIA data](#)¹⁸). These California inspections are 60% of the total planned inspections (59) for all Federal and State Plan states with 125 operating refineries. Texas, a federal OSHA state, has conducted only ten inspections or only two per year out of 30 refineries that were operating for that same five-year time frame. Over the last five-years, California has conducted planned inspections at PSM covered oil refineries for more than half of its refineries per year (7 for 13 refineries or 54%). Over that same period,

¹⁷ “Hazard prevention and control measures, in priority order, to eliminate or minimize a hazard. Hazard prevention and control measures ranked from most effective to least effective are: First Order Inherent Safety, Second Order Inherent Safety, and passive, active and procedural protection layers.”

¹⁸ https://www.eia.gov/dnav/pet/pet_pnp_cap1_dc_u_nus_a.htm

Texas only examined 7% of its PSM regulated refineries per year with planned inspections.

Background Supporting Comprehensive PSM Modernization

Two recent examples demonstrate how the current OSHA PSM regulatory system has failed workers and chemical incident prevention. The September 20, 2022, BP-Husky Refining¹⁹ chemical release and fire in Oregon, Ohio is the latest in a series of reoccurring disasters at BP operations in the U.S. The Oregon refinery is PSM-covered. Tragically, the chemical release and fire led to the fatalities of two brothers, Max and Ben Morrissey. Both brothers were fathers of young children and USW members. The same refinery was inspected by OSHA in 2010 and a \$3 million fine was imposed. U.S. Secretary of Labor Hilda Solis stated, “OSHA has found that BP often ignored, or severely delayed fixing known hazards in its refineries. There is no excuse for taking chances with people’s lives. BP must fix the hazards now.”

BP-Husky is the latest serious process safety-related incident of four caused by BP investigated by the CSB²⁰ since 2005. Two additional BP chemical disasters were investigated by the CSB – including the non-PSM regulated BP Macondo blowout that resulted in 11-fatalities and the worst environmental disaster in U.S. history. In the 15-fatality Texas City incident, the CSB reviewed 32-years of Texas City refinery operation and reported that facility had experienced 39 fatalities. The CSB called this “one of the worst cumulative death tolls of any US workplace in recent history.”²¹ The BP-Husky fatalities occur in a backdrop of a pattern of serious incidents and ongoing concern for BP’s corporate-wide process safety performance. This record underscores the failures of the existing PSM regulatory system to effectively address such a notorious repeat offender.

All PSM regulatory citations and fines arising from the 2010 Tesoro Anacortes refinery fire were recently vacated by the Washington Appeals Board.²² The Tesoro Anacortes incident resulted in seven fatalities from the catastrophic failure of a heat exchanger. Six of those killed were USW members. This incident was the worst PSM-covered incident since BP Texas City. The Washington State OSHA State Plan regulator, Labor and Industries (L&I), fined Tesoro \$2.39 million. The corrective actions required by L&I of Tesoro Anacortes needed to address the

¹⁹ At the time of the September 2022 incident, BP was a 50% owner of the Oregon, Ohio refinery.

²⁰ In addition to the 2022 BP-Husky refinery fire, the 2005 BP Texas City (BPTC) refinery fire and explosion that resulted in 15-fatalities, the 2005 BPTC Resid Hydrotreater Unit (RHU) major fire resulting in \$30 million in damages and a shelter in place order for 43,000 people, and the 2005 BPTC release in the Cat Feed Hydrotreating Unit (CFHU) that resulted in a shelter-in-place order and \$2 million in property damage. The 2005 BPTC RHU and CFHU incidents occurred at the refinery while the CSB was investigating the 15-fatality ISOM incident. In a 2001 3-fatality BP Amoco Polymers Inc. incident investigated by the CSB, process units of the plant were OSHA PSM-covered but it was asserted that the equipment that was involved in the incident was not.

²¹ *CSB Investigation Report: BP Refinery Explosion and Fire*, March 2007, at 306. available at <https://www.csb.gov/bp-america-refinery-explosion/>.

²² The Board of Industrial Insurance Appeals, State of Washington.

deficiencies that led to this incident were also vacated. At the time of the Tesoro incident, the L&I PSM regulations were similar to the federal PSM Standard. More than 12-years after the Tesoro disaster, the Appeals Board determined that Tesoro bears no responsibility for the disaster that took the lives of seven people and, to this day, devastated their families.

The CSB Tesoro Anacortes report determined there were numerous management deficiencies both technical and organizational that led to the incident. The report also found a long list of Washington L&I regulatory failures including a lack of damage mechanism reviews, no inherent safety provisions requiring inherently safer materials of construction, and deficient provisions for effective safeguards.

The report concluded that the heat exchanger catastrophically ruptured due to a damage mechanism known as high temperature hydrogen attack (HTHA). HTHA was well known to the industry with frequent related failures and the subject of an API Recommended Practice 941.²³ The CSB found that API RP 941 and other relevant API Recommended Practices were “written permissively such that there are no minimum requirements to prevent HTHA failures.”²⁴ These were the same API Recommended Practices cited in the Appeals Board decision to vacate citations. Nonetheless, the Appeals Board concluded that Tesoro had effectively applied the cited API standards. The Appeals Board found there was no basis for citations that asserted the company had not followed the PSM Standard under the PSM requirements to identify and follow Recognized and Generally Accepted Good Practice Guidelines or RAGAGEP.²⁵ The ill-defined PSM RAGAGEP provisions that lacked effective requirements for employers to follow consensus safety standards and practices were further rendered meaningless.

On the other hand, the CSB concluded that more corrosion resistant materials of construction could have prevented the incident. The CSB recommended that Washington L&I and API implement of the concept of inherently safer design as a more effective corrective action.²⁶ The CSB report recommended comprehensive PSM reforms to the Washington L&I. These include modernization of regulatory requirements and enforcement. Washington L&I. has undertaken PSM reform and has a mature draft of regulatory changes similar to those adopted in California.

The elimination of the Tesoro Anacortes citations and fines, especially with a disaster of this magnitude, highlights the weaknesses of the PSM regulatory system in preventing chemical

²³ American Petroleum Institute API RP 941: *Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical*, 7th Ed., 2008.

²⁴ <https://www.csb.gov/file.aspx?DocumentId=5851>

²⁵ RAGAGEP applies only to the PSM elements of Process Safety Information (PSI) 29 CFR 1910.119(d)(3)(ii) and Mechanical Integrity (MI) 29 CFR 1910.119(j)(4)(ii). RAGAGEP requires that that equipment “complies with” (PSI) and “inspection and testing procedures follow” (MI) recognized and generally accepted engineering practices. RAGAGEP is not defined in the OSHA PSM Standard.

²⁶ *CSB Investigation Report: Tesoro Anacortes Refinery, Catastrophic Rupture of Exchanger*, May 2014, available at <https://www.csb.gov/tesoro-refinery-fatal-explosion-and-fire/>, the recommendation to API in part reads “Require the use of inherently safer materials to the greatest extent feasible.”

incidents and holding employers accountable. Seven workers perished and there are no consequences for the employer who is directly responsible for workplace process safety. This result is perhaps the strongest evidence yet showing that more effective hazard controls or other corrective actions are not required under the PSM standard to prevent future occurrences for events like Tesoro Anacortes. After enduring a 12-year wait for justice, the co-workers and families of Tesoro Anacortes victims deserve better.

These are but two glaring PSM regulatory failures – many other recent disasters have revealed significant faults in the OSHA PSM regulatory system. For example, insurance company and risk advisor Marsh reports that the two largest losses internationally in the 2017-2019 period were the 2019 Philadelphia Energy Solutions (PES) and the 2018 Husky Superior, Wisconsin refinery fire and explosion.²⁷ This was the biggest insurance loss increase tracked by Marsh since the period of the 23-fatality Phillips Pasadena Chemical Plant Complex in 1989. The PES refinery – the largest refinery in the eastern U.S. – was permanently closed because of the incident with over 1,000 jobs lost in the plant workforce alone. The reported insurance loss was 1.2 billion with an estimated economic impact of \$2.1 billion to the local economy. This is another example of disasters closing plants and eliminating jobs rather than effective PSM measures and regulatory requirements. Marsh has noted a significant increase in U.S. oil refinery losses occurring with what they described as a decline in engineering standards and regulatory oversight. The Marsh report found “similar losses could occur in future if aging assets are not supported by evolving engineering standards that are enforced by adequate regulation.”

PSM Regulatory System Modernization Must Follow the More Effective Approach Taken in California and Washington

Based in part on the recommendations from the CSB Chevron Richmond (2012) and Tesoro Anacortes (2010) refinery incident investigations, California and Washington State initiated comprehensive PSM rulemaking that serves as a model for the federal OSHA PSM reform. CSB reports detailed the fundamental deficiencies of both state’s PSM regulatory systems which at the time paralleled the current federal PSM Standard. In California, a Governor’s Task Force reviewed the state PSM safety and environmental regulations and found significant shortcomings and made recommendations consistent with the CSB reports.²⁸ California adopted a greatly expanded PSM regulation for petroleum refineries in 2017. Additionally, California built a much larger dedicated specialist PSM unit – recruiting a PSM technically capable staff with engineering expertise and PSM work experience.

The revised California regulation is the most comprehensive change to PSM regulations since the federal provisions were enacted 30-years ago. California’s PSM

²⁷ Marsh JLT Specialty, *100 Largest Losses in the Hydrocarbon Industry*, March 2020. Marsh reports can provide valuable insights into trends and needed loss prevention related to the hydrocarbon industry.

²⁸ <https://www.dir.ca.gov/oshsb/documents/Process-Safety-Management-for-Petroleum-Refineriess-governorreport2014.pdf>

standard for oil refineries added nine new elements and rewrote the original 12 PSM elements that constitute the existing federal PSM standard. The new elements include requirements pertaining to damage mechanism reviews; implementation of corrective actions, hierarchy of controls analysis and inherent safer; safeguard protection analysis; use of PSM leading and lagging indicators; management of organizational change, human factors, safety culture assessments; employee/union representative empowerment in PSM decision-making; and root cause analysis for major incidents and near-misses. It requires PSM-covered oil refineries to take an integrated, rigorous, systematic approach to identifying, analyzing, and controlling the hazards that can give rise to process incidents. The comprehensive California regulation is intended to shift the practice of process safety management to targeted risk reduction through the most effective controls – “to the greatest extent feasible” – strengthened by employee/union representative empowerment.

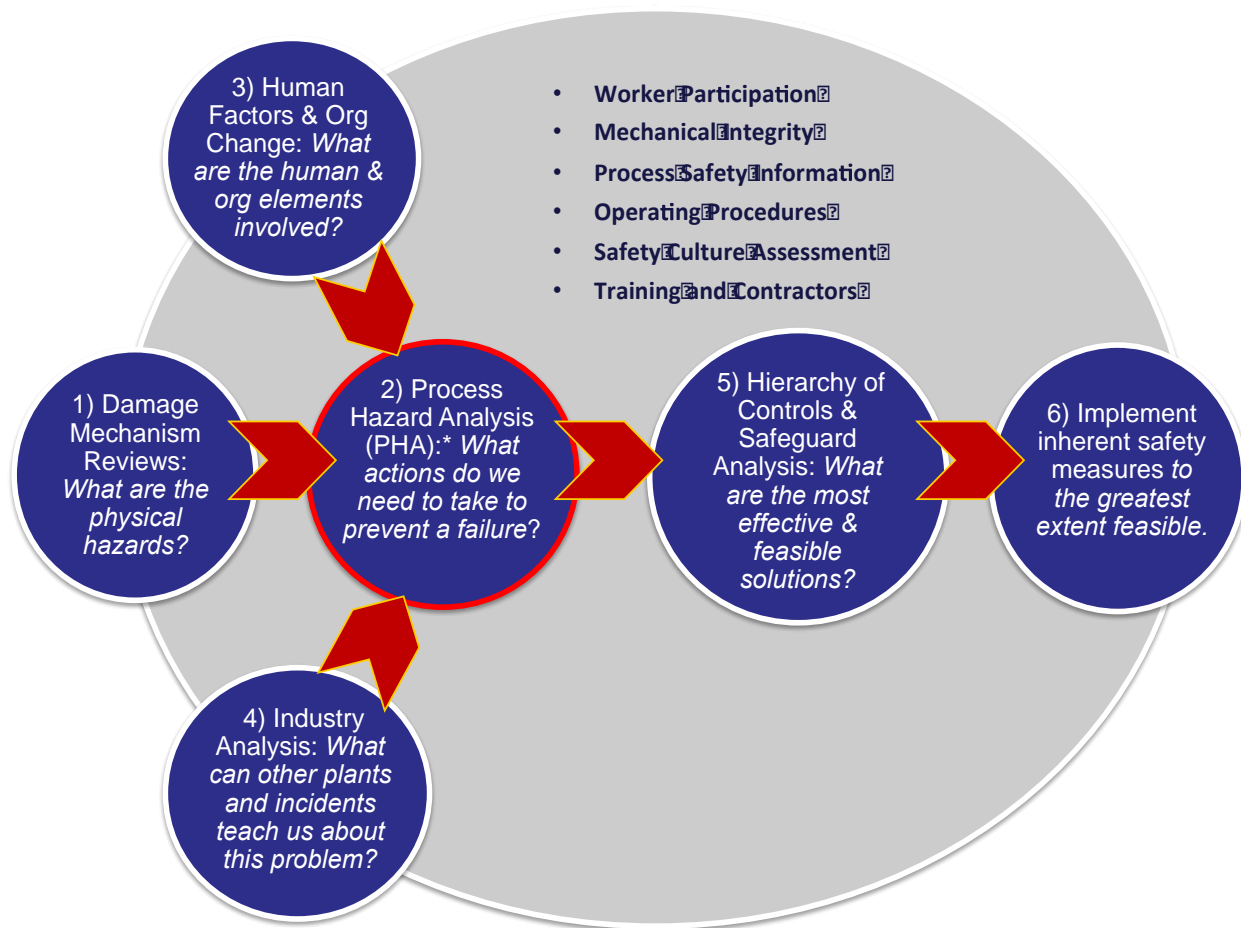


Figure 1. Graphic of the Logic Model of the California PSM Regulation, Section 5189.1.²⁹

²⁹ Protecting Workers from Chemical Catastrophes: California’s 2017 Process Safety Management

The PSM elements of the revised California PSM petroleum refinery regulation are integrated and systematic. **Figure 1** is a logic model of the regulation showing an example of how the PSM elements are integrated and mutually supportive. A more rigorous PHA is a key element in California’s PSM program, as it incorporates an additional robust body of technical and organizational information, and it triggers implementation requirements. California has added a new Damage Mechanism Review (DMR) element that is required to be reviewed in the PHA. The existing federal PSM Standard has no such analysis requirement for potential damage mechanism failures to be incorporated into the PHA – a key weakness identified in the CSB Chevron report. When a California PHA management employee/union representative team identifies a process condition with the potential for a major incident, a hierarchy of hazard controls analysis (HCA) and safeguard protection analysis (SPA) are required, each of which trigger their own implementation requirements. The SPA requirement determines the effectiveness of individual safeguards for each failure scenario in the PHA. The Hierarchy of Controls analysis is a broader, stand-alone analysis that evaluates recommendations from PHAs, incident investigations, Management of Change (MOC) reviews, or the design reviews of new processes or equipment to eliminate hazards “to the greatest extent feasible.” The elements are mutually supportive. For example, an MOC process requires a review of a DMR and HCA. Unlike the existing PSM Standard, the California regulations requires more than reviews, for each element (DMR, PHA, HCA, incident investigation, compliance audits, etc.) “the employer shall implement all recommendations” in accordance with the implementation requirements where exceptions are very limited.

The centerpiece of the California/Washington reforms is empowering employee/union representatives. Worker empowerment is essential for the operation of effective PSM programs and is strongly supported by consensus safety standards and guidelines. CCPS publications emphasize the importance of worker empowerment, including the right to shut down work or unsafe processes.³⁰ The widely regarded ANSI/AHIA Z10 “Occupational Health and Safety Management Systems³¹ requires that the employer establish a process for effective participation in the OHSMS for workers at all levels of the organization. Z10 was developed with the broadest representation of over 50 organizations including some of the largest corporations in the United States, including those with PSM-covered operations. The Z-10 committee includes participation by industry trade associations such as the API, unions such as the United Steelworkers (USW), and regulators like OSHA. Z10 employee participation requirements include workers in risk decision-making and providing employee/union

Regulations for Petroleum Refineries, Submitted to the Office of the High Commissioner for Human Rights, United Nation, Dr. Michael Wilson *et al*, 2018.

<https://www.ohchr.org/sites/default/files/Documents/Issues/ToxicWaste/Exposure/BlueGreenAlliance.pdf>

³⁰ *Process Safety Leadership from the Boardroom to the Frontline*, Center for Chemical Process Safety, (2019), p. 67. *Essential Practices for Creating, Strengthening, and Sustaining Process Safety Culture*, Center for Chemical Process Safety. (2018), p. 87.

³¹ <https://www.assp.org/standards/standards-topics/osh-management-z10>

representatives the ability to participate in elements such as strategic organizational issues, planning, timely access to information and the decision-making process, evaluation and corrective action and management review. Z10 states *top management leadership and effective worker participation are crucial for the success of an occupational health and safety management system (OHSMS)*.

CSB reports have found in a number of incident investigations that workers asserted a safe course of action or attempted to shut down a process prior to a chemical incident, but the employer declined to consult or take action. In the 2012 Chevron Richmond investigation where 15,000 people sought medical attention, the CSB found that crude unit operators argued for unit shutdown prior to the release of flammables and resulting massive fire.³² Worker representatives also sought timely repairs related to the damaged mechanism involved in the incident.³³ Over a period of 10-years, the CSB found that Chevron's own engineers had issued at least six reports urging managers to address the problem of sulfidation corrosion in the crude unit.³⁴ The CSB found that the operators' statements, engineers' reports, and representatives' positions were ignored by management. In the 2015 ExxonMobil refinery fire and explosion, operators raised opposition to aspects of the procedural variance that in part led to a massive explosion in downstream equipment. The company failed to consult workers and the operators' views were ignored.³⁵ In the 2014 DuPont LaPorte toxic release incident that resulted in four fatalities, operators objected to the practice of draining liquid accumulation in waste gas vent header to the atmosphere - a factor that eventually led in part to the toxic release. Workers presented a design fix to management. The operators' concerns and suggested safeguards were disregarded.³⁶ In the BPTC incident that led to 15 fatalities, operators raised the issue that the Isom Raffinate Tower level controller and sight glass needed repair, a factor that led among others, to the tower being overfilled and eventually releasing flammables to the atmosphere. Again, management did not respond to operators' concerns stating there was too little time left in the turnaround schedule to make the repairs.³⁷

³² CSB Final Report: *Chevron Richmond Refinery Pipe Rupture and Fire*, January 2015, p.79-82. <https://www.csb.gov/chevron-refinery-fire/>.

³³ CSB Regulatory Report: *Chevron Richmond Refinery Pipe Rupture and Fire*, January 2015, p. 80-81. <https://www.csb.gov/chevron-refinery-fire/>.

³⁴ CSB Interim Report: *Chevron Richmond Refinery* April 2013, pp.36-39. <https://www.csb.gov/chevron-refinery-fire/>. *Chevron Regulatory Report*, pp.10-11.

³⁵ CSB Investigation Report: *ExxonMobil Torrance Refinery*, February 2015, p.38. <https://www.csb.gov/exxonmobil-refinery-explosion-/>, CSB Public Meeting: *ExxonMobil Refinery Explosion*, January 2016, https://www.csb.gov/assets/1/20/exxonmobil_presentation_2016.01.pdf?15595.

³⁶ CSB Investigation Report: *DuPont La Porte Chemical Facility Toxic Release*, November 2014, p.112. <https://www.csb.gov/dupont-la-porte-chemical-release-/>.

³⁷ CSB Investigation Report: *BP Refinery Explosion and Fire*, March 2007, p. 48, available at <https://www.csb.gov/bp-america-refinery-explosion/>.

California regulations have the most robust requirements for employees/union representative empowerment of any PSM regulations in the country including the federal PSM standard. In its PSM Statement of Reasons that describes the need for the PSM revisions, California summarized the compelling case for employee/union representative participations in all phases of implementing the regulation:

Effective employee participation is necessary to ensure process safety in all refinery operations because employees are often the first to become aware of process safety hazards. Employees have direct experience with the routine operation or maintenance of a process. In some cases, operators and maintenance personnel may be the sole source of information obtained through their work experiences and are therefore a valuable source of information. Effectively integrating employee expertise into the refinery's PSM program is critical to ensure —and continually improve—process safety.

The California regulations require an employee participation plan with employee/union representatives to be involved in all phases of the development and implementation of the PSM elements (PHAs, DMRs, HCAs, MOCs, Management of Organizational Change assessments (MOOCs), Process Safety Culture Assessments (PSCAs), Incident Investigations, SPAs, and Pre-startup Safety Reviews (PSSRs). To emphasize this requirement, California has included participation language into each PSM element. The union representatives must be selected by the union. The regulations include important transparency provisions requiring that all documentation must be made available to the employees/union representatives without prohibitions related to trade secrets.

The employer is required in consultation with employee/union representatives to implement written Stop Work Authority procedures including the authority to refuse to perform unsafe work, or partially or completely shut down a process unit based upon a process safety hazard. The USW has recently published extensive stop work authority guidance, “*Bargaining for Stop Work Authority – to Prevent Injuries and Save Lives*” (2022), and incorporates the findings and recommendations of that publication into our PSM comments (**Figure 2**).³⁸ The USW and California PSM Statement of Reasons both emphasize that stop work authority is a vital right of employees and their representatives, but this in no way relieves management of its responsibilities to provide a safe workplace and prevent chemical incidents. Stop work authority provisions must include anti-retaliation protections.

³⁸ *Bargaining for Stop Work Authority – to Prevent Injuries and Save Lives*, USW publication, 2022. https://www.usw.org/get-involved/hsande/resources/publications/StopWorkAuthority_July2022.pdf

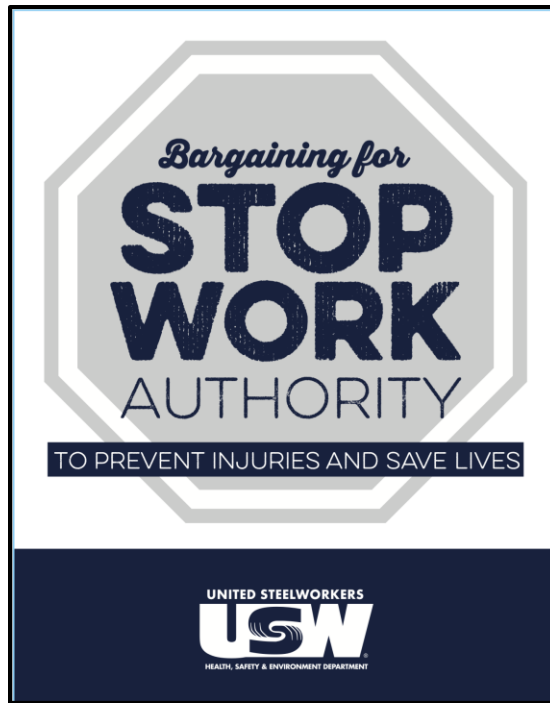


Figure 2. The USW has published extensive stop work authority guidance, “*Bargaining for Stop Work Authority – to Prevent Injuries and Save Lives*” (2022).

The California petroleum refinery PSM modernization requires employers to implement the most effective controls to eliminate process hazards. The California PSM Hierarchy of Controls Analysis (HCA) requires labor-management PSM teams to develop written recommendations for each process hazard in a structured approach that prioritizes the most effective controls. The HCA states that the hazards must be eliminated to the greatest extent feasible using first order inherent safety measures as the top priority. This is defined as measures that eliminate the hazard such as substituting a toxic chemical used in a process for one that is non-toxic. Any remaining hazards must be effectively reduced using second order inherent safety measures such as lower inventory or reduced pressure or temperature. Then, any remaining hazards must be effectively reduced in order by applying passive and active controls. At the bottom of the list of corrective actions are administrative controls such as training, procedures, and inspections. Moving toward the bottom of the hierarchy relies more on human action, a less reliable safeguard. In the California PSM Regulation for petroleum refineries, the HCA team must analyze and document publicly available information on hazard controls such as inherent safety measures. The relevant measures are ones that have been achieved in practice by industry or recommended by a federal or state agency. See **Figure 3** for a graphic representation of the California regulations application of the hierarchy of controls to PSM hazard elimination.

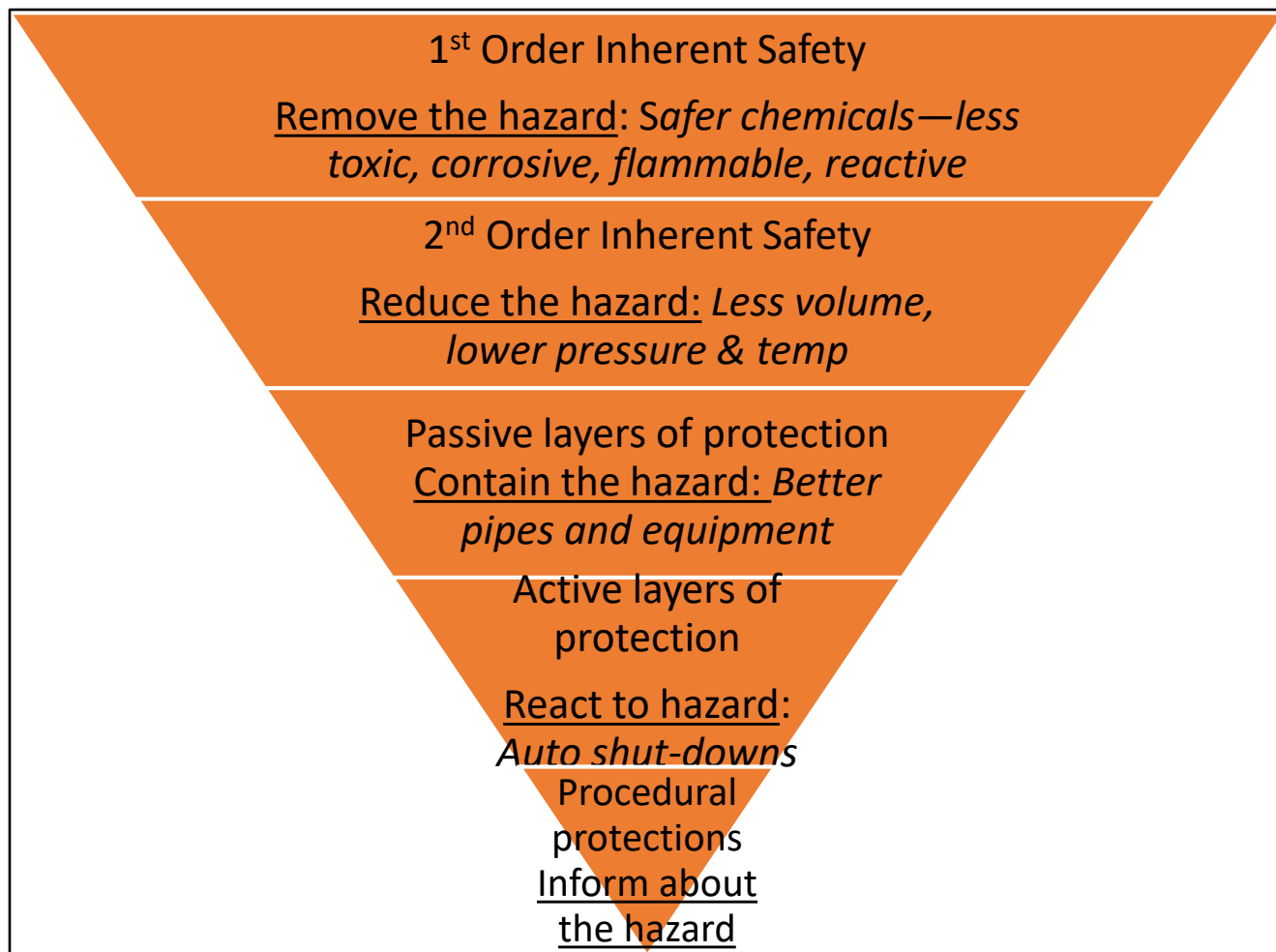


Figure 3. The California 2017 PSM regulation requires that solutions to process safety hazards be developed and implemented based on the Hierarchy of Controls. The top of the hierarchy focuses on eliminating or controlling the hazard, the bottom on protecting workers from the unmitigated hazards.

The concept of the hierarchy of controls that includes the application of inherent safety required in California’s petroleum refinery PSM regulation, is widely acknowledged as the most effective method for controlling hazards. The concept of the “hierarchy of controls” was first adopted by the National Safety Council in 1950.³⁹ Both CCPS’s Risk Based Process Safety and Guidelines for Investigation of Chemical Process Incidents apply the use of inherent safety concepts and the hierarchy of controls. Risk Based Process Safety emphasizes using inherently safer approaches in hazard reviews early in the process lifecycle.⁴⁰ This position is consistent with Trevor Kletz’s seminal paper, “What You Don’t Have Can’t Leak,”⁴¹ which

³⁹ *SH&E Problem Solving: Are Higher Order Controls Being Ignored?* Professional Safety, February 2014, pp. 34-35, available at <http://onlinedigitalpublishing.com/publication/?m=17910&i=193102&p=36> accessed on 2-17-2020.

⁴⁰ *Guidelines for Risk Based Process Safety*, CCPS, AIChE, 2007, Application of the RBPS Guidelines.

⁴¹ *What You Don’t Have Can’t Leak*, Trevor Kletz, Chem. Ind., May 1978, No. 287.

has become an axiom of process safety thinking and practice. CCPS's Guidelines for Investigating Chemical Process Incidents emphasizes using inherent safety when developing incident investigation recommendations.⁴² ANSI/AHIA Z10 "Occupational Health and Safety Management Systems"⁴³ requires risk reduction based upon the hierarchy of controls with elimination of hazards or substitution of less hazardous materials or processes as the priority. In addition to CCPS and ANSI Z10 - NIOSH,⁴⁴ OSHA⁴⁵ and the NFPA⁴⁶ have also adopted or developed guidance on the hierarchy of controls because it is the most effective way to control significant hazards. This widely accepted approach to hazard control adopted by the California's PSM regulation is not a requirement of the federal PSM Standard. This is a serious gap in the regulatory scheme that allows employers to avoid accountability and effectively prevent PSM incidents, injuries, and deaths.

Federal OSHA's PSM is termed a performance standard, but has few goals or effective requirements to reduce risk. As CSB reports have identified, the current federal PSM Standard is largely "activity based" – it is referred to as a performance-based regulation, but the Standard establishes few performance goals or effective methods for eliminating hazards or reducing risks utilizing the hierarchy of controls. The PSM regulatory language primarily requires the completion of activities, rather than delivering outcomes. Only two elements have vaguely formulated outcome-based language (PHA and Mechanical Integrity). For example, the federal PSM PHA element states the employer "shall identify, evaluate, and control the hazards involved in the process."⁴⁷ However, recommendations from PHA's are only required to be "resolved."⁴⁸ The PHA provisions are vague and contradictory, with no requirements listed for effective hazard elimination or targeted risk reduction such as to the greatest extent feasible.

For most PSM elements such as MOC, Incident Investigation, Compliance Audit, Pre-startup Safety Review there is no requirement that the review or report, prevent future incidents or otherwise be effective. While an employer can be cited for failing to implement their own recommendations, these provisions otherwise provide no requirements for eliminating the hazards identified or for reducing risk by utilizing the hierarchy of controls. For example, in the BP Texas City investigation, the MOC review for trailers sited close to a process unit startup where all 15-workers were killed, did not effectively address the hazards, or compel the employer to relocate the trailers that could have been easily moved. The Federal PSM MOC

⁴² *Guidelines for Investigating Chemical Process Incidents*, CCPS, AIChE, 1992, p.173.

⁴³ <https://www.assp.org/standards/standards-topics/osh-management-z10>

⁴⁴ *Hierarchy of Controls*, National Institute for Occupational Safety and Health (NIOSH), available at <https://www.cdc.gov/niosh/topics/hierarchy/default.html>.

⁴⁵ <https://www.osha.gov/safety-management/hazard-prevention>

⁴⁶ *NFPA 70E Standard for Electrical Safety in the Workplace*, National Fire Protection Association, 2018, available at <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=70E>.

⁴⁷ 29 CFR 1910.119(e)(1)

⁴⁸ 29 CFR 1910.119(e)(5)

element did not require that the review prevent an incident because of the change and no MOC citations were issued.⁴⁹ The California approach on the other hand drives employer accountability. California's required targeted risk reduction places the burden on the employer to implement the strongest possible PSM safeguards. It requires multiple integrated elements identifying hazards and implementation of recommendations from the MOC, HCA, and other PSM elements to the greatest extent feasible.

Proposed PSM reforms that merely require additional reviews without requirements to implement recommendations or apply inherently safer systems and more effective safeguards simply continue the same ineffective activity-based PSM provisions that exist today. OSHA must require that employers demonstrate that process safety risk has been eliminated to the greatest extent feasible utilizing the hierarchy of controls.

California's petroleum refinery PSM Implementation element provisions drive more effective safeguard adoption. The Implementation element and Process Safety Program elements of the California regulation further lead to effective implementation of PSM recommendations and hazard elimination. California PSM elements have requirements that the recommendations from reviews, audits, investigation reports, and all other PSM elements be implemented subject to requirements listed in an Implementation element. The employer is allowed in this element to reject or alter a team recommendation only if the employer can demonstrate in writing that the recommendation is 1. not relevant to process safety, 2. contains factual errors or 3. or is infeasible – but a determination of infeasibility cannot be based solely on cost.⁵⁰ If the employer alters a team recommendation, the employer must implement an alternative that is equally or more effective than the team's recommendation. The federal PSM Standard only requires the recommendations to be "resolved" without rejection limitations. In the California regulation, the employer must develop a corrective action plan to prioritize and implement the recommendations with an assigned completion date and person responsible. The California PSM regulation sets time limits for implementation of specific types of PSM recommendations. The process safety program element provisions require an organizational chart that identifies management positions responsible for different PSM elements. The provisions of the PSM Implementation and PSM Program elements help ensure that feasible recommendations are required to be implemented with a plan that assigns a due date and responsibility. The federal PSM Standard lacks these vital accountability provisions for implementation of effective PSM safeguards utilizing the hierarchy of controls.

⁴⁹ http://www.tenc.net/archive/osha_bp_05.htm

⁵⁰ The California PSM Implementation element also states: *The employer may change a team recommendation if the employer can demonstrate in writing that an alternative measure would provide an equivalent or higher order of inherent safety. The employer may change a team recommendation for a safeguard if an alternative safeguard provides an equally or more effective level of protection.* § 5189.1. Process Safety Management for Petroleum Refineries

An effective program tracking leading and lagging indicators is critical for management oversight, continuous improvement, and accountability for PSM performance. The California regulation requires the implementation of an effective program to track and document PSM leading and lagging indicators. Leading indicators assess management system functioning such as PSM action item closure. Lagging indicators are process safety events such as near-miss releases and operation of emergency safety devices such as pressure relief valves (PRVs) to flare. Process safety indicators are now favored by process safety standards and guidelines precisely because high consequence low frequency events don't provide reliable data. The importance of a PSM indicator program was highlighted by the CSB BPTC report. The Federal PSM must require this critical tool to help prevent process safety incidents.

The federal PSM standard allows a form of industry self-regulation that which impairs process safety performance improvement. OSHA states in their Federal Register Notice as they have in the past, their vision that the PSM regulation, as a performance-based standard, was different than other OSHA regulations. OSHA states that the federal PSM Standard lists management system elements, but “employers have the flexibility to tailor their PSM programs to the unique conditions at their facility.” While the specific flexibility wording does not appear in the standard, the OSHA statement does reflect one of the most significant deficiencies in the standard – that the federal PSM Standard is largely a form of industry self-regulation with a type of flexibility that allows PSM employers to “tailor their PSM programs” to avoid accountability for effective PSM performance by:

- Conducting activities and reviews without effective performance goals or required approaches to eliminate hazards or reduce risk.
- Applying weak safeguards to identified PSM hazards without application of the widely accepted hierarchy of controls to prioritize the most effective corrective action.
- Adopting overly permissive industry-authored standards and guidelines that lack actual safety requirements.
- Utilizing economic influenced – not safety driven - risk matrices and other practices to avoid PSM risk reduction and implementation of needed safeguards.
- Rejecting PSM recommendations with no restrictions on the grounds for rejection
- fail to assign accountability for PSM program management and performance.

It must be a high priority for OSHA to address these serious process safety deficiencies that are significant obstacles to accountability for major chemical incident prevention, injuries, and deaths.

Requirements for employers to follow consensus good practice PSM guidance that is promulgated by diverse stakeholders is essential for effective PSM performance. CCPS recognizes the importance of the use of consensus standards in PSM performance. In their Risk

Based Process Safety Guidelines, CCPS added the element of Compliance with Standards. ANZI Z10 recognizes that risk management and the application of the hierarchy of controls requires the use of best practices in industry. The federal PSM Standard has attempted to introduce the requirement that employers follow standards and guidelines with OSHA's use of the concept of Recognized and Generally Accepted Good Engineering Practices (RAGAGEP). RAGAGEP however, is ineffective, and its weakness is shown in the vacated citations from OSHA and State Plan administrative appeals decisions.⁵¹ The 2018 BP-Husky Refining decision by OSHRC undermined the enforceability of the RAGAGEP provisions in the standard. The decision noted that OSHA had not defined RAGAGEP. The decision also shows the difficulty of relying on permissively drafted industry recommended practices (RPs), such as those from API for enforcement. The API RP in question allowed the employer to rely as an alternative on its "own engineering analysis" for operation above the recommended limit. These are examples of how PSM can function as a form of industry self-regulation. RAGAGEP only applies to two PSM elements that are technology and equipment focused – mechanical integrity and process safety information. RAGAGEP does not apply to elements such as incident investigation or process hazard analysis where newly updated CCPS guidelines can add significant value to PSM good practice. However, the application of more effective safety concepts such as reducing risks to ALARP or "as low as reasonably practical - can effectively hold industry accountable to good safety practice as the CSB concluded in the Tesoro Anacortes report.⁵² Federal OSHA should adopt the ALARP approach rather than RAGAGEP in reforming the PSM standard.

OSHA's current Compliance Directive for the federal PSM Standard⁵³ that focuses on planned inspections by specialist PSM inspectors has not been effectively implemented. *High-hazard facilities require at least annual inspections conducted by a specialized inspection team.* The intended purpose of the PSM Standard is prevention of the consequences of catastrophic chemical releases. An effective regulatory enforcement program focused on incident prevention is needed for modernized PSM regulations to make a difference. More rigorous PSM provisions alone cannot effectively prevent incidents, injuries, and deaths. Prevention is the best strategy, including preventative inspections that occur prior to an incident. Waiting until a PSM incident results in multiple fatalities, injuries, and a large release of highly hazardous material and then in the aftermath, primarily relying on regulatory fines and citations for prevention is an ineffective and unacceptable strategy. The prevention of low frequency high consequence events cannot be driven by the theory that disaster driven enforcement punishment alone will prevent the next occurrence. The Federal Aviation Administration (FAA) doesn't wait until a plane crash disaster occurs as their priority enforcement strategy – They focus on preventative action. However, since the promulgation of the PSM Standard, OSHA's planned

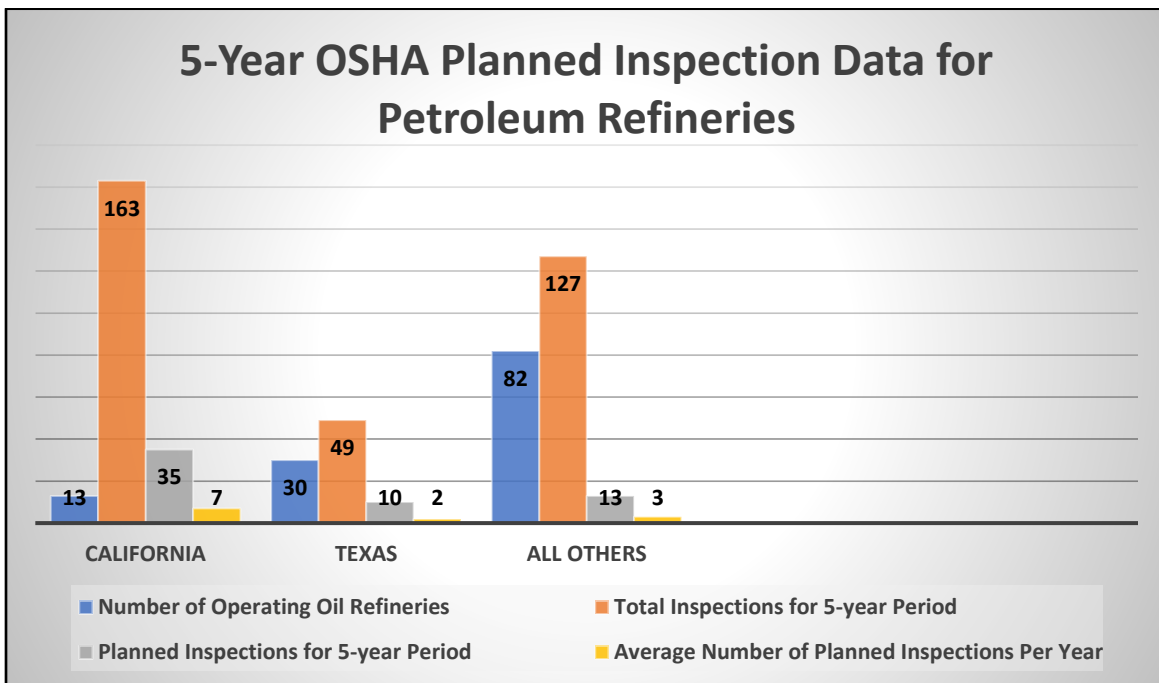
⁵¹ For example, BP PRODUCTS NORTH AMERICA, INC., and BP-HUSKY REFINING, LLC, v. Department of Labor, OSHRC Docket No. 10-0637, 2018.

⁵² CSB Investigation Report: Tesoro Anacortes Refinery, Catastrophic Rupture of Exchanger, May 2014, available at <https://www.csb.gov/tesoro-refinery-fatal-explosion-and-fire/>, pp. 8-9.

⁵³ https://www.osha.gov/sites/default/files/enforcement/directives/CPL02-02-045_CH-1_20150901.pdf

inspections called for in its Compliance Directive have at best been inconsistently conducted. Currently for the last five years, planned inspections at PSM-covered facilities are seriously lacking.

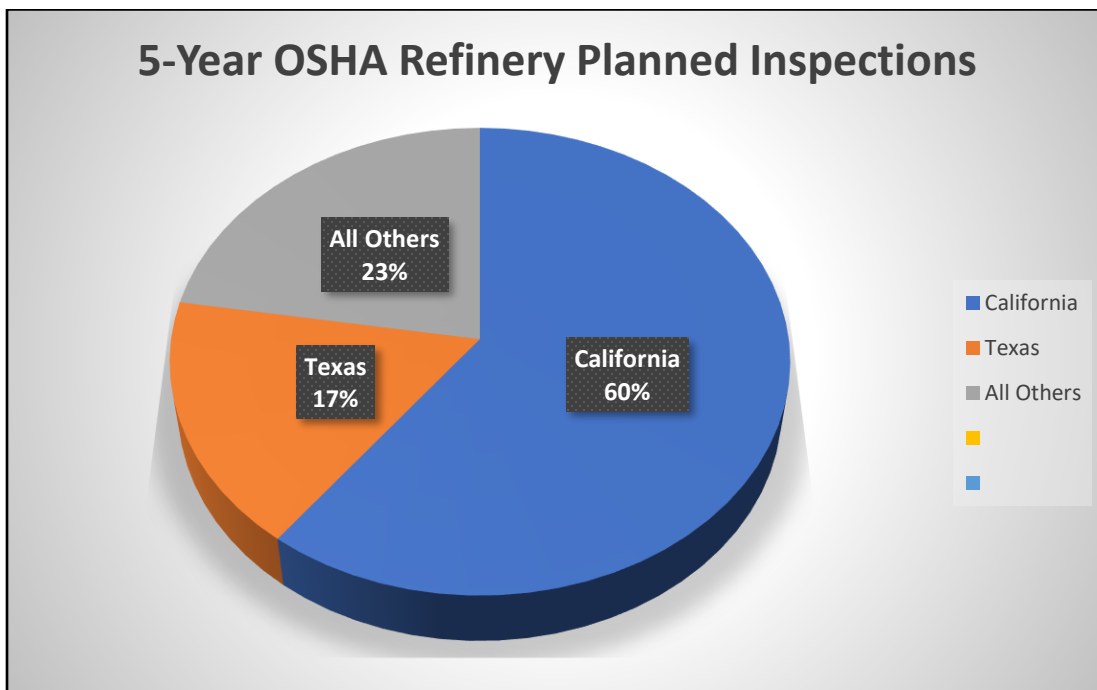
In its 2005 report, the CSB found that prior to the BPTC incident, federal OSHA had conducted few planned PSM inspections. The PSM Compliance Directive states *“the primary enforcement model for the PSM standard shall be the PQV (Program Quality Verification) inspection.”* The PQV inspections are intended to be planned and targeted. The Directive states *it is anticipated that PQV inspections will be highly resource-intensive* and a large and complex undertaking that could take weeks or months. Chemical industry experience is required for the team lead. The CSB BPTC report stated that from 1995 to March 2005 OSHA’s Compliance Directive called for as many as 50 planned PSM inspections per year or five for each of the ten Regions. However, only nine were performed over that 10-year period, less than one per year for all regions with federal oversight.⁵⁴ The BPTC refinery had only one local PSM inspection at the plant despite a history of serious incidents and 23 fatalities over a 30-year period. In the wake of the BPTC incident in part responding to CSB recommendations, OSHA in 2007 initiated a series of PSM National Emphasis Programs (NEP) including for the oil refinery and chemical sectors and performed a large number of PSM inspections at facilities across the U.S. The Chemical NEP was discontinued in 2017.



OSHA IMIS inspection data reveals there are few planned federal OSHA inspections at U.S. oil refineries in the last five-years compared to those conducted by Cal-OSHA. The

⁵⁴ CSB Investigation Report: BP Refinery Explosion and Fire, March 2007, p.202-203 available at <https://www.csb.gov/bp-america-refinery-explosion/>

USW reviewed data from the OSHA IMIS database that lists information about both federal and State Plan OSHA inspections. The USW examined 339 total inspections in the IMIS database and found 59 planned inspections at petroleum refineries nationwide⁵⁵ (NAICS #324110) over a 5-year period from November 1, 2017, to November 1, 2022. The USW selected these criteria to make a comparison with the California inspection history from the adoption of the 2017 PSM regulations specific to petroleum refineries. Over the past five-years, California conducted 35 inspections or an average of 7 per year even though California represents only 10% of the U.S. refineries (13 refineries operating [EIA data](#)). **These California inspections are 60% of the total planned inspections (59) for all Federal and State Plan states (125 operating).** Texas, a Federal OSHA state, has conducted only ten inspections or an average of only two per year for 30 refineries operating during that same 5-year time frame. Over the last five-years, California has conducted planned inspections at PSM covered oil refineries for an average of **more than half of its refineries per year** (7 for 13 refineries or 54%). Texas only inspects an average of 7% of its PSM regulated refineries per year.



This expanded inspection performance in California was driven by the increase in staffing and technical capabilities of its specialized PSM inspection force since PSM reforms were adopted. The expansion of the numbers of staff and technical capabilities is funded by an oil industry fee. Effective PSM enforcement requires an independent, fully funded,

⁵⁵ Note the inspection detail for most of the planned inspections indicated the emphasis was PSM related, however, the detail for some entries was insufficient to make conclusions that all inspections were PSM-specific. Nonetheless, it is assumed that all oil refineries are PSM-covered and the number of planned inspections or lack thereof at a sector of PSM-covered facilities is revealing of the effectiveness of the enforcement regime for incident prevention.

technically capable PSM regulatory regime. Most of Cal/OSHA's new PSM personnel hires are engineers or other technical fields including PSM industry experienced personnel, and they all receive hundreds of hours of PSM training before conducting an inspection. It is reported that Cal-OSHA PSM planned inspections prior to the 2017 PSM regulatory reforms only deployed one inspector examining a single PSM element. After the PSM reforms, teams of PSM specialists inspect multiple elements.⁵⁶ California has led the nation with a dramatically more rigorous enforcement regime than federal OSHA for PSM-covered oil refineries. Federal OSHA must adopt this more robust model of PSM enforcement to more effectively prevent PSM chemical incidents, injuries, and deaths.

OSHA-recognized third-party auditors are no substitute for an independent, fully funded technically capable regulator. In the late 1990s then Wyoming Senator Mike Enzi R-WY proposed an "OSHA reform" bill called the Safe Act. The bill proposed to designate third-party auditors that were recognized by OSHA. The bill was opposed at the time as a step backwards by the USW and AFL-CIO on the grounds that third-parties could not take the place of the independence and objectivity of OSHA inspectors. Third-party auditors are easily captured by industry and are not required to reveal their inspection methods and decision-making processes to the public. The USW is concerned that OSHA will consider a third-party auditor provision as a substitute for developing and funding a larger PSM specialist cadre of technically capable federal and State Plan OSHA inspectors who can implement an independent robust inspection regime similar to California's PSM enforcement program.

Major chemical incidents have significant organizational causes that the federal OSHA regulations must fully address. In the wake of the CSB BP Texas City and Baker reports, PSM advances have emphasized the importance of managing organizational flaws that can lead to major accidents. Less mature forms of PSM in the past have primarily focused on technological failures and equipment-based causes rather than organizational performance. For example, federal requirements for following Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) only apply to process safety information (chemicals, technology, and equipment) and mechanical integrity. Organizational causes are increasingly relevant to PSM performance, including the ways in which staffing, training and experience are managed; whether reporting of hazards and incidents is suppressed by management using various incentive programs; how time and productivity pressures are communicated to front-line workers, and so forth. CCPS in expanding the traditional list of PSM elements has added a number of new organizational issues to correct what they termed "PSM performance stagnation."⁵⁷ USW International Union, and full-time USW Health, Safety & Environment and/or PSM Representatives have observed organizational trends that are increasingly causal factors for PSM incidents. These are often management leadership issues and in addition to those

⁵⁶ *Protecting Workers from Chemical Catastrophes: California's 2017 Process Safety Management Regulations for Petroleum Refineries*, Submitted to the Office of the High Commissioner for Human Rights, United Nation, Dr. Michael Wilson *et al*, 2018.

⁵⁷ *Guidelines for Risk Based Process Safety*, CCPS, AIChE, 2007.

noted above, include budget cutting, downsizing, job-combinations, a deemphasis of the importance of PSM, an increasingly inexperienced and inadequately trained workforce, postponed and unacted upon maintenance and inspections, and lengthening turnaround cycles.

The California reforms include several new PSM elements to combat organizational weaknesses; these will lead to improved organizational functioning and the prevention of incidents, injuries and deaths. California's 2017 PSM regulation includes new elements with detailed requirements for human factors, PSM safety culture surveys, management of organizational change, PSM implementation, and process safety management program which designates the refinery manager as the person responsible for PSM compliance and an organizational chart assigning PSM element responsibility to management personnel, all of which must be developed and implemented with involvement of PSM employee/union representatives selected by the workforce. Management of organizational change (MOOC) for example is a key PSM element that can be used to respond to address the safety implications that result in wake of corporate decision-making, from corporate mergers and acquisitions to downsizing and budget cutting. In its BPTC investigation, the CSB found that several organizational changes played a causal role in the incident including budget cutting, lack of effective PSM leadership and short-staffing of operators. The CSB recommended that federal OSHA adopt MOOC requirements in its PSM standard, OSHA has not acted on this recommendation. California, however, has adopted a MOOC element in their revised 2017 regulation. The USW believes this element is vital to PSM performance and it must be added as a separate element from the traditional MOC which focuses on chemistry, technology, equipment, and procedures.⁵⁸

Conclusion

PSM rulemaking cannot be more urgent and important to the future of chemical safety and must be expedited. It is vital to the health and safety of USW members and workers in the industries and processes covered by PSM. We know that OSHA inspectors, staff, and leadership are hardworking and dedicated to worker health and safety. We recognize that OSHA rulemaking is particularly difficult. The forces likely to oppose the changes we are advocating are some of the most wealthy and powerful in the country. But it must be stated that process safety management addresses **catastrophic** chemical risks to workers, communities, and the environment. These are not issues that can wait, or be moved on and off the regulatory agenda. The pressing need for change is heightened by ongoing fatal incidents and life altering injuries our members face year in and year out.

We want to reemphasize to you that the solutions to PSM modernization must match the scale of the problem of deaths, injuries, fires, explosions, and chemical releases that continue to

⁵⁸ Note OSHA has argued in the past that the MOC element's current application to procedures can effectively address organizational change as their rationale for not undertaking rulemaking on the CSB recommendation. However, organizational changes such as downsizing, budget cutting, delayed maintenance are seldom reflected in procedures – this was certainly the case in the BPTC incident.

occur unabated in the nation's process industries. There are existing successful models for reform such as the PSM petroleum refinery regulations in California that shine the path forward. We ask that you implement fundamental and comprehensive PSM reform for the maximum possible protection from chemical disasters that have taken lives and destroyed families and that you do so with the greatest speed possible. Thank you for the time and consideration of our comments.

Respectfully submitted,

Steve Sallman

Director of Health, Safety and Environment