

**Washington PSM Regulations  
Tesoro Written Comments  
May 14, 2018**

**VIA EMAIL: [psmcomments@lni.wa.gov](mailto:psmcomments@lni.wa.gov)**

Ms. Tari Enos  
Department of Labor and Industries  
Division of Occupational Safety and Health  
Olympia, Washington 98504

Ms. Enos:

Tesoro Refining & Marketing Company LLC (Tesoro) operates the Anacortes Refinery which has a total crude-oil capacity of 120,000 barrels per day (bpd) and supplies gasoline, jet fuel, diesel fuel, and other petroleum products to markets in Washington and Oregon. The Anacortes Refinery employs over 400 people.

Tesoro appreciates the opportunity to participate as a stakeholder as the Washington Department of Labor & Industries (L&I) gathers information on potential revisions to the state's Process Safety Management (PSM) standard. Tesoro also supports and hereby incorporates by reference the comments on the Washington PSM Discussion Draft (Discussion Draft) submitted by the Western States Petroleum Association (WSPA).

Tesoro looks forward to working with L&I to develop a process safety regulation that represents a better approach to process safety. We believe that we can continue to make gains in process safety practices and the performance of those practices. Tesoro also believes that the State of Washington should extend this regulation to employers in other industries which face process hazards so that the benefits of preventing catastrophic incidents may be realized in Washington communities to the broadest extent possible.

Tesoro has three goals for any revisions to the Washington PSM standard, which provide a basis for these comments and recommendations. First, revisions to the PSM regulation should result in a performance-based regulation that enables employers to improve process safety performance through the continuous improvement of their management systems. Second, revisions to the PSM regulation should result in a regulation that facilitates compliance by stating requirements that are aligned with L&I's intent, consistent with standards set forth by the Washington Administrative Procedures Act, easily understood by the regulated community, and well-defined and, therefore, enforceable. Finally, revisions to the PSM regulation should result in a regulation whose requirements are reasonable, feasible, and harmonized with existing PSM processes so that the employer may use existing resources efficiently.

Tesoro believes that the time is ripe for PSM regulations to evolve in a way that enables improved process safety performance. Federal PSM regulations have been in place for two decades, and some elements of California's recently implemented Refinery PSM standard (CalPSM Refinery standard) are based on requirements that Contra Costa County has implemented via its Industrial Safety Ordinance (ISO) for at least 10 years.

Tesoro operates two refineries in California, including one that also operates under the Contra Costa County ISO, and is therefore well-positioned to provide comments on how Washington's PSM standard can improve upon California's recently adopted rule. Our experience with the CalPSM Refinery standard has led us to conclude that Washington's PSM standard should evolve from California's recently-



implemented Refinery PSM standard, rather than replicate it. Importantly, the CalPSM Refinery standard does *not* represent the stakeholders' consensus, nor does its implementation imply that it has been endorsed by all stakeholders. The California Dept. of Industrial Relations (DIR) took input from the various stakeholders, but DIR decided what to put in the final rule; it was not a fully negotiated outcome between all the stakeholders. The California regulations should be evaluated carefully regarding what Washington needs and L&I should not hesitate to opt for a better way. This approach would allow Washington to take advantage of the positive aspects of the California rule while avoiding some of its pitfalls. An evolved regulation would:

- Focus on provisions that are proven to positively impact process safety performance;
- Incorporate proven CalPSM Refinery standard provisions such as human factors consideration, management of organizational change, damage mechanism reviews, and hierarchy of controls principles;
- Improve the Washington PSM standard's organization of the PSM elements; and
- Avoid known issues with the CalPSM Refinery standard, including ambiguities, errors, and ill-defined requirements.

To that end, Table 1 contains Tesoro's recommendations for a better approach to process safety regulation. Several of these recommendations are particularly important for achieving our goals:

- ***Concentrate on Risk:*** The requirement to apply PSM processes or analyses to specific process units or systems within a refinery should focus on those processes with the potential for a catastrophic release of highly hazardous chemicals. Tesoro believes that the existing federal approach to PSM regulations which links that potential to threshold quantities of highly hazardous chemicals/substances provides a sound approach and should continue to be the basis of PSM applicability in Washington. This approach will prioritize resources devoted to process safety according to risk. L&I should not expand the regulation's scope to cover all processes within a refinery. See the discussion on Scope in Table 1.
- ***Definition of Feasible:*** "Economic factors" must be included in the list of relevant considerations for determining feasibility. The inclusion of economic factors is a well-established norm for process safety, recognized in state and federal process safety legislation, state and federal regulations, and by the courts in Washington and other jurisdictions. (See additional comments in Table 1.)
- ***Avoid Unenforceable Provisions:*** One of Tesoro's primary concerns for regulations is that they be transparent with respect to comprehending the intent of the rule's provisions and unambiguous in stating the requirements. These qualities result in an "enforceable" rule, i.e. the regulated community and the regulators agree on what it means to comply and the regulator audits the employer consistently and enforces the regulation fairly and justly.

Enforceability depends on unambiguous regulatory language providing the basis for a common understanding of the requirements. The regulation should not contain ambiguous words or phrases whose meaning is subject to interpretation such as "effective," "best practices," or "substantially similar". Although government regulations may prescribe practices ("what to do"), they should not attempt to regulate "how well to do them". Language subject to the regulator's interpretation or enforcement discretion (e.g. "effective") could result in inconsistent and, potentially, unjust interpretations of the regulation. The meaning and intent of regulatory language should be plain and discernible without requiring interpretative documents. The new or



revised regulations should respect well established regulatory norms and definitions where certain phrases have well established interpretations.

Table 1 includes several significant examples of an unenforceable provision: the 15% “trigger” in Management of Organizational Change; Employee Collaboration; ambiguous language.

- **Clarify Definitions:** Precise, well-understood definitions provide the foundation of an enforceable rule. The regulated community and L&I must agree on what the terms in the regulation mean. Definitions are needed in the regulation for terms or phrases that have a unique meaning within the context of the rule and, conversely, commonly understood terms should not be defined. Definitions should be included for the purpose of helping the regulated community comply with the rule. Tesoro is suggesting revisions to the most important definitions, but L&I should reference the comprehensive list of recommendations included in WSPA’s comments.

Several definitions in the regulation have an enormous impact on the scope of the employer’s PSM activities. Expansive definitions result in the dilution of PSM efforts which inhibits the employer from concentrating on more significant risks. Table 1 includes several significant terms that affect PSM scope: covered process; hot work; major change; and major incident.

- **Eliminate Ineffective Provisions:** Provisions that extend the scope of PSM activities to low risk processes or systems are ineffective because compliance activities have little actual benefit for process safety. A performance-based regulation should enable the employer to identify and concentrate on the risks that will have the greatest impact.

Provisions that have been demonstrated to be ineffective should not be included in the Washington PSM regulation. Tesoro’s 15 years of experience applying hierarchy of controls principles or “inherently safer systems” in its Contra Costa County refinery has demonstrated that applying HCP to existing covered processes does not yield process safety improvements principally because existing processes have been through several PHA cycles and other risk reduction actions to reach an acceptable risk level. Therefore, hierarchy of controls is ineffective for existing processes.

The requirements to review publicly available information are ineffective because the quality of the information is poor. Employers can spend their time more profitably in gathering data from their own incidents where all the information is available.

Table 1 includes several significant examples of an unenforceable provision: Hierarchy of controls for existing processes; applying PSM to all processes and systems; review of publicly available information.

- **Reorganize Process Safety Elements:** The Washington PSM regulation would facilitate compliance if some of the elements were relocated to other sections where the activities are complementary (e.g. insert hierarchy of controls requirements in PHA) or to sections where they should more naturally reside (e.g. move some human factors requirements to Procedures). Table 1 contains recommendations to reorganize and relocate the requirements for Human Factors and Hierarchy of Controls Principles. In both cases, integrating these requirements into the fabric of existing PSM activities will enable the employer to implement them more effectively while facilitating compliance.

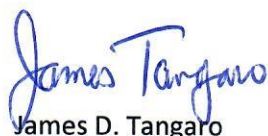
- **Concentrate on Process Safety:** The subject of this regulation is process safety, but sections in the Discussion Draft include occupational safety requirements. Since other Washington regulations already address occupational safety, the references to occupational safety should be removed from this regulation. (Refer to WSPA comments for sections: Training (4); Mechanical Integrity (2)(a))
- **Eliminate Redundancies:** As WSPA has mentioned during stakeholder meetings, the Discussion Draft contains many redundant provisions. For example, the sections of the regulation that have an employee collaboration/participation requirement should refer to the requirement in the employee collaboration/participation section rather than repeating the requirement in each section. Similarly, other redundant requirements should be eliminated.
- **Establish Reasonable Phase-in Timelines:** Employers need adequate time to update PSM systems and achieve compliance with the new requirements as well as the extension of PSM requirements to existing processes or equipment. Although a few revisions address this, the regulation does not have a phase-in allowance everywhere that it is needed. A phase-in allowance will be especially important for any newly covered existing processes.

### Conclusion

Tesoro believes that the adoption of these recommendations will make it possible to revise the Washington PSM regulations to achieve a performance-based regulation which enables improved process safety performance, facilitates compliance, harmonizes with existing PSM processes, and results in reasonable and feasible requirements.

We look forward to collaborating with L&I to build a better regulation and would welcome the opportunity to meet with L&I staff to explain our views and recommendations.

Sincerely,



James D. Tangaro

Vice President of Refining  
Tesoro Anacortes Refinery



**Table 1**  
**Tesoro Comments on Washington PSM Discussion Draft**  
**14 May 2018**

Item	Recommended Actions	Comment
<b>Purpose / Scope</b>		
1.	Limit scope of PSM regulation to processes within petroleum refineries which involve a chemical at or above the specified threshold quantities listed in WAC 296-67-285.	<p>The requirement to apply PSM processes or analyses to specific process units or systems within a refinery should be focused on those processes that have the potential for a catastrophic release of highly hazardous chemicals. Tesoro believes that the existing federal approach to PSM regulations which links potential to the amount of specific highly hazardous chemicals/substances is a sound approach and should continue to be the basis of PSM applicability in Washington. This approach will prioritize process safety resources according to risk.</p> <p>Tesoro believes that the PSM regulation should distinguish between refinery processes that can have a major incident (i.e., covered processes) and those that cannot have a major incident because they do not contain a threshold quantity of highly hazardous chemicals. The criteria for covered processes should be identical to the existing WAC criteria. (WAC 296-67-285)</p> <p>There are several process units or utility systems in a refinery that do not contain significant quantities of highly hazardous chemicals or flammable substances (“low risk systems”) and, therefore, do not have the potential to be the source of a catastrophic release. For non-covered processes or systems (e.g. cooling water) that have the potential to cause a catastrophic release from a covered process unit, those hazards are systematically considered and mitigated during the PHA for the covered process. Given that “low risk systems” are unlikely to be a source of a catastrophic release and given that hazards that could be caused by “low risk systems” are considered during the PHAs of covered processes, requiring these systems to comply with all PSM requirements is unlikely to improve process safety performance.</p>
<b>Employee Collaboration</b>		
2.	Replace “collaboration” with “participation”.	<p>The Discussion Draft replaces “employee participation” with “employee collaboration” without any indication of what the change should accomplish. Tesoro believes that L&amp;I should continue to use “participation” for three reasons:</p> <ol style="list-style-type: none"> <li>1. “Collaboration” is imprecise; determining whether collaboration has occurred or was sufficient relies on judgment rather than objectivity and proving (and documenting) that collaboration has occurred is not easy. Even individual members of a team will each perceive the degree of collaboration very differently. Determining whether collaboration has occurred or was sufficient relies on judgment rather than objectivity, and it is not easily documented. This invites interpretation by the regulator. Therefore, “participation” should be used rather than “collaboration”.</li> <li>2. Using collaboration rather than participation would be a significant departure from federal regulations which have a well-established understanding of “participation”. Therefore, the rule should use “participation” rather than “collaboration.”</li> <li>3. “Collaboration” suggests that employees may have expanded authority and autonomy. However, the employer, not labor, bears the responsibility for compliance and the employer must retain final say in process safety decisions.</li> </ol>



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<b>Contractors</b>		
3.	L&I should remove these provisions.	<p>Provisions of the Contractor section would expose employers to potential joint employer liability under a wide range of employment-related laws that include federal and state wage and hour law, federal and state tax law, labor law, and workers' compensation laws. The regulation should not require the employer to exercise control over:</p> <ol style="list-style-type: none"> <li>1. The Contractors' personnel policies and procedures</li> <li>2. The training that is provided to the contractor's employees</li> <li>3. The way the contractor's employees perform their work.</li> </ol> <p>Neither should the employer be required to maintain employment records for contractor employees. L&amp;I should remove these provisions.</p>
<b>Management of Organizational Change</b>		
4.	See WSPA comments for recommended language.	<p>Tesoro believes a management of organizational change (MOOC) should be conducted for modifications to the existing organizational structure, reporting relationships, or staffing levels in the refinery. However, Tesoro also believes L&amp;I should delete the requirement to conduct a MOOC for changes that increase "employee responsibilities at or above fifteen percent". Although the specification of a 15% increase in responsibilities as a trigger for the analysis seems to offer an unambiguous bright line, the opposite occurs because the employer generally has no basis for quantifying employee responsibilities. Therefore, the application and enforcement of this trigger is likely to be arbitrary and inconsistent.</p> <p>The 15% trigger appears in the California PSM regulations is not an industry standard. The source was on a study of control room operators whose responsibilities were "quantified" simply by counting the number of control loops in their process unit(s) without making any distinction regarding complexity or process safety implications. This simplistic basis does not adequately quantify control room operator responsibilities and has no relevance to other positions in the refinery.</p> <p>The decision whether to conduct a MOOC when there is a change in responsibilities should be left to those who know the job's requirements and are able to judge the potential impacts on process safety. As noted in the WSPA comments, the rule should require completion of a MOOC when changes have "the potential to impact process safety of a covered process." (see WSPA comments)</p> <p>The lack of support for this requirement is evident in the California Refinery PSM rulemaking record. The state agency promulgating the Refinery PSM rule indicated that the 15 percent trigger for a MOOC was a "recognized industry standard." However, the American Petroleum Institute ("API") - a key organization that develops industry standards - opposed the 15 percent trigger because it was unclear by what metric or methodology refiners should use to quantify employee responsibilities. API's opposition significantly undermines California's basis for adopting this provision and, as a result, Washington should consider implementing a more performance-based requirement.<sup>1</sup></p>

<sup>1</sup> State of California, Department of Industrial Relations, Final Statement of Reasons on Title 8: New Section 5189.1 of the General Industry Safety Orders at 124, available here: <https://www.dir.ca.gov/oshsb/Process-Safety-Management-for-Petroleum-Refineries.html/>



**Table 1**  
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<b>Incident Investigation</b>		
5.	See WSPA comments for recommended language.	<p>Tesoro believes that terms “root cause,” “direct cause,” and “indirect cause” should not be used in the regulation because they do not have precise, well-established meanings. Although some investigators use these terms, some investigation methodologies do not use these terms and other methodologies use the same terms differently. Therefore, these terms do not provide the basis for a consistent and enforceable understanding of the regulation’s requirements.</p> <p>Tesoro recommends eliminating the requirement for a “root cause determination” and reverting to the language in the current Washington PSM rule because the determination of causes is inherent in the investigation process. This change proposed in the Discussion Draft is unlikely to improve incident investigations and the references to specific types of causes are likely to be a source of confusion and result in requirements that are unenforceable.</p>
6.	See WSPA comments for recommended language.	The regulation should not limit the duration of investigations to four months. Complex incidents or those that require extensive analysis of equipment or materials may require more time. L&I should make some provision for these cases.
<b>Process Safety Culture Assessment</b>		
7.	Remove the Process Safety Culture Assessment section.	Process safety “values and beliefs,” components of process safety culture, cannot easily be described concretely, or measured. These terms are vague, conceptual, and subject to interpretation. Tesoro believes that these terms are too subjective to be a basis for an enforceable government regulation and, therefore, L&I should not include process safety culture assessments in the regulation.
<b>Hierarchy of Hazard Controls Analysis (HCA)</b>		
8.	See WSPA comments for recommended language.	<p>The regulatory treatment of hierarchy of controls in the Discussion Draft overestimates the state of the industry’s knowledge and experience and, therefore, demands too much of this methodology. The industry has not developed a consensus approach to conducting a standalone hierarchy of controls analysis although the principles for such an analysis are well known. Therefore, a better approach would be to require the application of those hierarchy of controls principles (HCP) within the analyses required for other PSM analyses such as:</p> <ul style="list-style-type: none"> <li>• PHA/SPA – apply HCP when developing recommendations</li> <li>• MOC for major changes - apply HCP when developing equipment and system designs</li> <li>• New covered processes (this is a subset of MOC for major changes) - apply HCP when developing process, equipment, and system designs</li> <li>• Investigations - apply HCP when developing recommendations</li> </ul>



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9.	See WSPA comments for recommended language.	<p>The application of hierarchy of controls principles (HCP) to existing covered process units is unlikely to improve process safety performance for several reasons:</p> <ol style="list-style-type: none"> <li>1. Existing processes have equipment designed for a specific process technology and for specific substances which imposes a significant constraint on modifications that can be made. For example, a hierarchy of controls recommendation to change a chemical or a catalyst could be incompatible with existing metallurgy; or a recommendation to operate at a lower pressure might reduce a key reaction rate to a level that is infeasible; or changes to equipment may be infeasible due to space (plot plan) limitations.</li> <li>2. Typically, existing processes have been through several PHAs and have had their process hazard risks mitigated by a combination of controls which achieves the same objective as a combination of controls that might have been selected using HCP. Because the objective, a reduction of process hazard risk level, has already been reached by implementing PHA (and other risk reduction methodologies) recommendations, a hierarchy of controls analysis that achieves same result just reveals an alternative that could have been considered in the past, but does not provide an improvement relative to existing process safety performance.</li> <li>3. Existing processes that have been revamped or modified have applied risk assessment and reduction methodologies to those changes to minimize process hazard risks. The application of HCP to a covered process with an acceptable risk level will not realize process safety improvements.</li> </ol> <p>Tesoro's 15 years of experience applying HCP or "inherently safer systems" in its Contra Costa County refinery has demonstrated that applying HCP to existing covered processes does not yield process safety improvements. Therefore, this provision should not be included in the Washington PSM regulation.</p>
10.	See WSPA comments for recommended language.	<p>One of the regulation's new provisions would require the application of HCP to all recommendations that result from other PSM analyses such as PHAs or investigations. However, HCP would be irrelevant for several types of recommendations. For example, an investigation recommendation might call for: a PHA scenario to be reviewed; or additional training; or modification of a procedure. It would be impractical to apply HCP for this type of recommendation, so this requirement should be limited to recommendations that would modify equipment or controls.</p>
11.	See WSPA comments for recommended language.	<p>Two PSM elements in the Discussion Draft (PHA and HCA) that require the review of "publicly documented incidents" (for PHAs) or "publicly available information" (for HCAs), but these requirements have questionable value because information in the public domain regarding incidents typically lacks the most valuable information: context, causes, and contributing factors. Although a few sources like the Chemical Safety Board can provide some good information, employers can spend their time more profitably in reviewing their own incidents where all the information is available.</p> <p>Furthermore, this requirement lacks a basis for compliance and enforcement because "publicly documented" is undefined and employers cannot know how much review of publicly available documents will suffice for compliance. L&amp;I should eliminate this requirement because it would require a significant expenditure of resources for little, if any, process safety benefit.</p>



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<b>Process Safety Management Program</b>		
12.	Remove the Process Safety Management Program section. See WSPA comments for recommended revisions to other sections.	Tesoro recommends eliminating this section since all but one of the proposed requirements for the Process Safety Management Program element are already included in the other sections of the regulation, so this does not require a separate section. The requirement for a process safety performance indicators program should be relocated to the Implementation section. (See WSPA comments for recommended placement and language.)
13.	See WSPA comments for recommended language.	Alternatively, if L&I does not remove this section, the agency should consider aligning certain provisions re-focusing the requirements on employers, rather than refinery managers. The assignment of authority and responsibility for compliance should be the prerogative of the employer so the regulation should not specify this in the regulation. By designating the refinery manager as the “the person with the authority and responsibility for compliance,” L&I is creating personal liability for this individual, which is inconsistent with WISHA’s focus on employers and “conditions of employment,” as well as L&I’s statements during stakeholder meetings that citations would still be directed to the employer. <i>See</i> Rev. Code Wash. § 49.17 et seq.
<b>Definitions</b>		
14.	Use this definition for Feasible: Capable of being accomplished in a successful manner within a reasonable period of time, taking into account health, safety, environmental, legal, social, <u>economic</u> , and technological factors.	<p>Feasible - “Economic factors” must be included in the list of relevant considerations for determining feasibility. The inclusion of economic factors is a well-established norm for process safety, recognized in state and federal process safety legislation, state and federal regulations, and by the courts in Washington and other jurisdictions.</p> <p>The definition of “feasible” has tremendous leverage over the costs of compliance. If employers will be required to implement recommendations or corrective actions driven by the definition of feasible in the discussion draft (i.e. without consideration of economic factors), then costs may be significantly higher than refineries’ historical risk reduction costs. The definition of feasible must include economic factors for compliance costs to be reasonable. Employers have an established history of evaluating and investing in risk reduction measures. The regulation must continue to allow the practice of considering economic factors.</p> <p>Moreover, Washington recognizes “technologically or economically infeasible” as an affirmative defense to a citation. To establish an affirmative defense of infeasibility in a case involving a Washington Industrial Safety and Health Act violation/citation, an employer must prove that (1) the means of compliance prescribed by the applicable standard would have been infeasible under the circumstances in that (a) its implementation would have been technologically or economically infeasible or (b) necessary work operations would have been technologically or economically infeasible after its implementation and (2) either (a) an alternative method of protection was used or (b) there was no feasible alternative means of protection. <i>Frank Coluccio Const. Co. v. Washington State Dept. of Labor &amp; Industries</i> (2014) 181 Wash. App. 25, 329 P.3d 91. In order to be consistent with the state’s established affirmative defense, Washington’s proposed definition of “feasible” must incorporate cost as a relevant consideration.</p>
	See WSPA comments for recommended language	Employee Representative - Employee representatives participate in PSM teams that perform analyses to recognize, prevent, and mitigate process safety risks. These representatives must be full time employees on the site that are (1) qualified for the PSM task they will perform; (2) when relevant, qualified to work in the process unit that is the subject of the PSM task.



Recommended Actions	Comment
See WSPA comments for recommended language	Leading indicators and lagging indicators - These terms should be replaced with “process safety performance indicators” since the subcategorization of performance indicators is prescriptive and unnecessary. L&I should be consistent with API Recommended Practice 754, which refers to “Process Safety Performance Indicators for the Refining and Petrochemical Industries.”
Use this definition for Major Change: “An alteration to a covered process that introduces a new process safety hazard with the potential to cause a major incident or worsen an existing process safety hazard with the potential to cause a major incident by the introduction of new process equipment, new highly hazardous material, or an operational change outside of established safe operating limits.”	Major change – This definition must be revised. The version in the Discussion Draft would cover almost any change made in a refinery since it includes any introduction of new process equipment or new substances. To maintain focus on significant hazards, the definition should state that a “major change” is:
Use this definition for Major Incident: “A major uncontrolled release of a highly hazardous material that results in death or serious physical harm.”	Major incident – The definition of major incident should be tied to an uncontrolled release of a highly hazardous material as that is the precursor for fires, explosions and/or serious physical harm.
Remove the definition for outage.	Outage - L&I should remove this definition from the regulation. The term has many usages within the industry and the situation that it attempts to describe has many variations. Including this term is virtually certain to cause confusion for the regulated community.
See WSPA comments for recommended language.	Covered process – Tesoro believes that the PSM regulation should distinguish between refinery processes that can have a major incident (i.e. covered processes) and those that cannot have a major incident because they do not contain a threshold quantity of highly hazardous chemicals. The criteria for covered processes should be identical to the existing WAC criteria: a. Flammable gases or liquids in quantities greater than 10,000 pounds; or b. Toxic and reactive highly hazardous chemicals in quantities greater than the specified thresholds –found in WAC 296-67-285.
See WSPA comments for recommended language	Affected employee – Those employees who are involved in the operation and maintenance of a covered process including support staff such as technical professionals. This definition should exclude vendors since they are not on the site full time. Contractors and vendors are addressed since the Contractor section of the PSM regulation which contains the site owner’s responsibilities to provide hazard information to the contractor workforce.
See WSPA comments for recommended language	Isolate – The Discussion Draft uses “isolate” in Operating Procedures (4)(f)(ii)) in the context of controlling a leak or a spill with the objective of being at least as safe as shutting down the unit. To achieve this, a leak could be isolated by closing a valve or bypassing a piece of equipment while the definition offered in the Discussion Draft describes the isolation of equipment for maintenance work.



<b>Recommended Actions</b>		<b>Comment</b>
See WSPA comments for recommended language		Hot work – The definition should permit a distinction between high and low energy maintenance tasks, so the definition should limit hot work to “electric or gas welding, cutting, brazing, or similar flame or spark producing operations”.
L&I should remove these definitions.		L&I should delete these definitions for terms not used in the Discussion Draft or will no longer be necessary if WSPA recommendations are adopted. Best practice Flammable gas or flammable liquid Integrity Operating Windows Process equipment Promptly Reactive substance Safeguard Protection Analysis Toxicity
L&I should remove these definitions.		L&I should delete these definitions for terms not used in the Discussion Draft or will no longer be necessary if WSPA recommendations are adopted. Best practice Flammable gas or flammable liquid Integrity Operating Windows Process equipment Promptly Reactive substance Safeguard Protection Analysis Toxicity
<b>Implementation</b>		
15.	See WSPA comments for recommended revisions to other sections.	The implementation deadlines for corrective actions developed for each of the PSM elements should be included in the relevant PSM sections and removed from the Implementation section.
<b>Training</b>		
16.	See WSPA comments for recommended language.	As discussed above, a phase-in timeline is needed because employers need adequate time to update PSM systems and achieve compliance with the new requirements.



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<b>Human Factors</b>		
17.	See WSPA comments for recommended language and placement.	<p>The regulatory treatment of human factors in the Discussion Draft overestimates the state of human factors knowledge and experience in the industry and, therefore, demands too much in this area. The regulation would have employers apply human factors to a broad range of activities even though the benefits are speculative. This approach is resource intensive and diminishes the employer's ability to implement practical human factors solutions that result in concrete process safety benefits. It would be better to require analyses of human factors just for tasks where there are likely to be proven benefits.</p> <p>The list of the requirements in the Discussion Draft is prescriptive and inappropriate for a field in which the methodologies are immature. The regulation should have less detail and allow employers to continue developing human factors analyses and solutions that improve process safety performance. Tesoro recommends that the regulation should:</p> <ul style="list-style-type: none"> <li>• Focus on human factors that reduce the probability of human error or identify sources of human error, specifically for procedures, communication, evaluating task complexity, and investigations.</li> <li>• Recognize that the industry has not developed proven methods for evaluating human factors. Therefore, the regulation should emphasize the goal of reducing the probability of errors and minimize prescriptive regulatory requirements.</li> <li>• Exclude human factors concerns that are more appropriately addressed in other areas: 1) comprehension of procedures is already addressed in training; 2) human machine interface is addressed during design; 3) fatigue already has an industry consensus recommended practice (API RP 755) to follow; 4) process controls issues are addressed during control system design.</li> <li>• Exclude staffing issues since this is the prerogative of the employer and is often a subject of collective bargaining.</li> </ul> <p>Tesoro also recommends relocating the human factors requirements to the PSM sections where they are applied. Although this would eliminate the Human Factors section in the PSM regulation, it would have the advantage of placing all the requirements for each PSM elements in one place.</p> <p>Tesoro recommends placing these human factors in specific PSM sections as follows:</p> <ul style="list-style-type: none"> <li>• Identifying sources of human error – Investigations; Operating and maintenance procedures</li> <li>• Reducing the probability of human error - Operating and maintenance procedures; HCAs</li> <li>• Communications – Operating procedures</li> <li>• Task complexity – PHAs; Operating and maintenance procedures</li> </ul>
<b>Mechanical Integrity</b>		
18.	See WSPA comments for recommended language.	This regulation should not be revised to eliminate the list of equipment to which the mechanical integrity requirements apply. This inappropriately extends the requirements to all equipment regardless of whether it handles highly hazardous materials or not which will result in expending resources where they will have less or little benefit to process safety.