May 14, 2018

Ms. Tari Enos, Administrative Regulations Analyst
Division of Occupational Safety & Health
Washing State Dept of Labor and Industries

Via email: psmcomments@lni.wa.gov

Memo #2: Written Comments on Revisions to Chapter 296-XX WAC, Process Safety Requirements for Petroleum Refineries

Dear Ms. Enos,

On behalf of our organizations and members, we are pleased to offer the following three documents as comment on revisions to Chapter 296-XX WAC, *Process Safety Requirements for Petroleum Refineries*, version 1.19.18: (1) a line-edited version of the regulatory proposal; (2) a chart describing each of our recommended changes and the rationale for each change; and (3) a chart describing a number of strengths in the current proposal. These comments augment our previous comment, Memo #1, which focuses specifically on correcting changes that L&I made to existing California language. Memo #2 supersedes Memo #1 in cases where we have amended our recommendation.

In its current form, the PSM proposal is substantially weaker than the existing California regulation; however, with the changes we are recommending, WA's PSM regulation could improve on several aspects of California's regulation and provide a clear, enforceable and

practical vehicle for improving process safety in the state's refinery sector. We encourage you to take this path.

We will be glad to answer any questions and further elucidate our rationale for each of the changes we are recommending. Please contact Stephanie Celt of BlueGreen Alliance at stephaniec@bluegreenalliance.org to arrange for this.

Thank you again for your leadership in working toward meaningful improvements in Washington's PSM regulation. We support your efforts and stand ready to assist you and the Department in meeting this important objective.

Sincerely,

Charlotte Brody, VP for Health Initiatives	BlueGreen Alliance
Stephanie Celt, Washington Policy Coordinator	BlueGreen Alliance
Walter Cleve, Tesoro Anacortes Safety Rep	United Steelworkers Local 12-591, AFL-CIO
Robin Everett, Organizing Manager	Sierra Club Washington State Chapter
Steve Garey, Past President	United Steelworkers Local 12-591, AFL-CIO
Neil Hartman, Legislative & Political Director	WA Building & Construction Trades Council
Eleanor Hines, Lead Scientist	Re Sources for Sustainable Communities
Mary Ruth Holder, Representative	Evergreen Islands
Becky Kelley, President	Washington Environmental Council
Kim Nibarger, Oil Division Chair	United Steelworkers International, AFL-CIO
Mike Wilson, National Health Director	BlueGreen Alliance

cc: Paulette Avalos, Senior Policy Advisor, Governor's Policy Office
Andi Smith, Executive Director, External Relations, Governor's Office
Anne Soiza, Assistant Director, Department of Labor and Industries
Maggie Leland, Policy Director, Government Affairs and Policy Division, Department of Labor and Industries

Item	Page	Subsection	Issue and Corrective Action	Rationale
1	1	Purpose/Scope	Issue: This is the text of the existing WA PSM regulation. This language does not reflect the updated, *prevention* focus of the new WA PSM text, much of which is intended to drive down the *likelihood* side of the *consequence x likelihood* risk equation. Corrective Action: Consider adopting the following language: "*This section contains requirements for petroleum refineries to prevent major incidents and, to the greatest extent feasible, eliminate or minimize process safety hazards to which employees may be exposed."* This text sets a clearer expectation that major incidents are to be prevented.	The proposed WA *Purpose* does not reflect the updated, *prevention* focus of the new WA PSM text. "*Preventing and minimizing the consequences*" of releases is less protective than preventing releases from occurring in the first place. The text of the proposed regulation itself focuses on reducing the likelihood of a release by requiring refiners to implement measures to correct process safety hazards. While the regulation includes an Emergency Response subsection and requirements for emergency operating procedures, it does not, in the main, focus on measures to reduce harm once a release has occurred.
2	1	Definition of "Affected Employee"	Issue: Item (d) indicates "Staff members" Corrective Action: Consider revising Item (d) to "Support staff"	"Staff members" encompasses a broad group of roles and disciplines. In some sites, "Staff" may include all company employees not represented by a union. "Support staff" is more specific and clearer.
3	2	Definition of "Explosive" removed	Issue: This term appears in the definition of "Process" but is missing from the definitions element. Corrective Action: Consider including a definition of "Explosive" that	A concise definition of explosive will reduce ambiguity in determine the scope of the PSM regulation.

			references WAC 296-901-14024, Appendix B.	
4	2	Definition of "Facility"	Issue: This term appears in the proposal but is missing from the definitions subsection. Corrective Action: Consider including the following definition: *Facility. The plants, units, buildings, containers or equipment that contain(s) or include(s) a process*."	"Facility" is used in PHA, subsection(3)(e); Operating Procedures subsection(4)(d); Prestartup Safety Review, subsection (1); Mechanical Integrity, subsection (6)(b) and Incident Investigation—Root Cause Determination, subsection (7) currently without definition. This definition is necessary to clarify that the rules address the infrastructure and other components that support, contain, or in some other way include a process.
5	2	Definition of "Highly Hazardous Chemical"	Issue: Definition currently reads "A substance possessing toxic…" Corrective Action: Consider revising to "A substance possessing *acutely* toxic…"	Adding "acutely" to this definition creates a reference to "Acute toxicity," a term included in the Definition section.
6	4	Definition of "Major Change"	Issue: Item (b) currently reads "Any operational change outside of …" Corrective Action: Consider revising to "Any change that involves operation outside of …"	The suggested revision helps clarify that "Major Change" includes any change that would cause a process to operate outside safe limits.
7	4	Definition of "Major Change"	Issue: Item (c) currently reads "…or worsens an existing process safety hazard" Corrective Action:	Any change, even if it reduces an existing process safety hazard, needs to be fully considered before implementation. An improvement in one aspect may result in a greater hazard in another.

			Consider revising to "…or affects an existing process safety hazard"	
8	4	Definition of "Process"	Issue: The following CA text is missing: "*This definition includes processes under partial or unplanned shutdowns.*" Corrective Action: Consider adopting the CA text. Issue: The following CA text is missing: *"Utilities and process equipment shall be considered part of the process if in the event of a failure or malfunction they could potentially contribute to a major incident."* Corrective Action: Consider adopting the CA text.	Partial or unplanned shutdowns can contain highly hazardous materials and can present serious process safety hazards. They should fall under the scope of the PSM regulation. Utilities and process equipment are integral to a process and can cause or contribute to a major process incident. Retaining the CA text makes it clear that utilities and process equipment are covered by the requirements of the PSM regulation.
9	5	Definition of "Process Safety Performance Indicators."	Issue: This term appears in the proposal but is missing from the definitions subsection. Corrective Action: Consider adding the following definition: *"Process Safety Performance Indicators. Measurements of the refinery's activities and events that are used to evaluate the performance of process safety systems."*	This term is used in the Process Safety Management Program section at (4) and Implementation at (1) without definition.
10	5	Definition of "RAGAGEP"	Issue: WA has added the following phrase: "…*unless they*	While internal employer standards can certainly meet or exceed RAGAGEP, they do not

			are documented as meeting or exceeding external provisions." Corrective Action: Consider removing this phrase. Issue: The Center for Chemical Process Safety (CCPS) is missing from the list of examples. While the list is not in any way exhaustive, it is important to flag CCPS to avoid confusion during enforcement and appeal proceedings. Corrective Action: Add CCPS to the list of examples of RAGAGEP. Issue: RAGAGEP is narrowly applied in the proposal to PSI and Mechanical Integrity. Corrective Action: Insert the following phrase in all applicable sections: "…consistent with RAGAGEP." In addition, add a sentence to the definition that causes RAGAGEP to be applied to each section even if it's not explicitly stated as such. Issue: RAGAGEPs are often drafted as recommendations, which can lead to confusion during enforcement and appeal proceedings. Corrective Action: Insert a sentence that gives DOSH the discretion to	constitute RAGAGEP. Internal employer standards, by definition, are neither "recognized" nor "generally accepted" within industry. The addition of this phrase to the definition of RAGAGEP could also introduce ambiguity in the interpretation RAGAGEP as it is applied in the Mechanical Integrity subsection. RAGAGEP has traditionally been applied to Process Safety Information and Mechanical Integrity; however, it is applicable to nearly every section of the WA proposal. Providing a means for RAGAGEP to be expressed more broadly in the regulation ensures that the regulatory language will continue to develop alongside improvements in industry practice, as reflected in changes in RAGAGEP over time.

			deem a RAGAGEP to be a regulatory requirement, even if it is drafted as a recommended practice.	
11	6	Definition of "Safeguard Protection Analysis (SPA)"	Issue: WA has added this definition and introduced a "*risk tolerance criteria*" concept into the proposal and the SPA. Corrective Action: Considering removing this definition, or redraft it using RAGAGEP in place of "risk tolerance criteria."	"Risk tolerance criteria" is a concept that is internally derived by the employer and could be in conflict with RAGAGEP for SPAs. This phrase also introduces a concept that is otherwise undefined in the regulation, which could introduce ambiguity between the definition and the way SPAs are performed in accordance with the PHA subsection.
12	6	Definition of "Serious Physical Harm"	Issue: A definition of "Serious Physical Harm" is not included. Corrective Action: Consider adding a reference to WAC 296-900-14010, or other WAC, that provides examples or explanation of "Serious Physical Harm."	Providing examples of the intended focus of the term "Serious Physical Harm" allows consideration of potential consequences in the proper context.
13	6	Definition of "Toxic"	Issue: Current definition is ambiguous. Corrective Action: Consider replacing the current definition with a reference to "Acute Toxicity"	Referencing "Acute toxicity", a term included in the Definitions section, adds clarity to the use of the term "Toxic."
14	8	Employee Collaboration	Issue: The following CA text is missing at 5(d): "*Written reports of hazards and the employer's response."* Corrective Action: Consider adopting the CA text.	As part of an investigation or complaint, it is useful for the Division to be able to access written reports submitted by workers of process safety hazards, along with documentation of the employer's responses. This information can supplement the other three documentation

			Issue: At (1)(a), "process safety information" appears on p. 10 at (4) but is missing from this list. Corrective Action: Consider adding "process safety information" to the list at (1)(a). Issue: At (5), a requirement to retain the documentation in this section is missing. Corrective Action: Consider inserting the phrase, "…and retain a record of…" and "…for the life of the process."	requirements listed in the proposal. Addition of PSI in the list at (1)(a) ensures clearer linkage between the PSI and Employee Collaboration subsections. All of the Actions listed in (5)(a-d), and the documents that are generated as part of these Actions, are important indicators of an effective process safety management program. These documents should be available to employees, employees representatives, and to WA DOSH. These documents can also serve as important evidence in the investigation of a process incident. For these reasons, we recommend that the documents be retained for the life of each process.
15	10	Process Safety Information (PSI)	Issue: Current text in 3(b) includes the phrase, *"…or with more protective internal practices that ensure safe operation."* Corrective Action: Consider removing the phrase, *"…or with more protective internal practices that ensure safe operation."*	Whether an internal practice is more protective can only be determined in retrospect, through experience. "More protective" is a matter of opinion until the practice, and the equipment, fails. The equipment must comply with RAGAGEP, where RAGAGEP exists.
16	10	Process Safety Information (PSI)	Issue: The following CA text is missing at 3(c): *"If the employer installs new process equipment for which no RAGAGEP exists, the employer shall document*	Omitting this sentence could make it permissible for an employer to install new equipment that might be inappropriate for its intended purpose and does not meet RAGAGEP.

			that this equipment is designed, constructed, installed, maintained, inspected, tested and operating in a safe manner." Corrective Action: Consider adopting the CA text. Issue: The words "constructed" and "installed" are noted in 3(c) but are missing from 3(d). Corrective Action: For consistency and effectiveness, insert the words "constructed" and "installed" into the list noted in 3(d).	
17	10	Process Hazard Analysis (PHA)	Issue: The following CA text is missing at (1): "*All initial PHAs for processes not previously covered by this chapter shall be completed within three years of the effective date of this chapter, in accordance with this subsection."* Corrective Action: Consider adopting the CA text.	The Appendix A of "covered chemicals" and "threshold quantities" was removed from the CA PSM regulation. This sentence in the CA PHA subsection thereby extends the scope of the regulation to those processes that were previously exempted because they did not contain a chemical listed under Appendix A, or the chemical was present at levels below the listed threshold quantity. Sulfuric acid, for example, does not appear in Appendix A and was previously exempted. It is appropriate to require a new PHA for previously uncovered processes. Because the WA proposal also removes Appendix A and threshold quantities, it should require the employer to conduct PHAs for previously uncovered process. This sentence meets this objective.

18	11	Process Hazard Analysis (PHA)	Issue: WA has added the following text at 2(g): *"An appropriate equivalent methodology."* Corrective Action: Consider adopting the CA text.	This sentence appears as follows in the CA text: *"Other PHA methods recognized by engineering organizations or governmental agencies."* The WA text is more permissive, and it could place the "burden of proof" with DOSH in demonstrating that the employer's method is *not* an "appropriate, equivalent methodology."
19	11	Process Hazard Analysis (PHA)	Issue: WA uses the term "may" where CA uses "shall" at (2), regarding PHA methodologies. Corrective Action: Consider adopting the CA text.	Allowing for an unlimited universe of potential PHA methodologies could place the burden of proof with DOSH in assessing the efficacy of each PHA method for its intended use in the plant.
20	13	Process Hazard Analysis (PHA)	Issue: The following text is missing at (11): " *The employer must implement all SPA recommendations in accordance with the Implementation section XXX"* Corrective Action: Consider adding the missing text, as noted above.	A requirement pertaining to implementation appears in the HCA and DMR subsections of the WA proposal. By dropping this requirement from the SPA subsection, WA has introduced an internal "difference" within the proposed regulation regarding the obligation of the employer to implement recommendations made by a SPA team. This difference could be interpreted to mean that SPA recommendations are not necessarily bound by the timelines and other requirements of the WA *Implementation* subsection.
21	13	Process Hazard Analysis (PHA)	Issue: The following CA text is missing at (15): "*Except as required in (6), the employer must implement all PHA recommendations in accordance with the Implementation section XXX."*	A requirement pertaining to implementation appears in the HCA and DMR subsections of the WA proposal. By dropping this requirement from the PHA subsection, WA has introduced an internal "difference" within the proposed regulation regarding the obligation of the

			Corrective Action: Consider adopting the CA text.	employer to implement recommendations made by a PHA team. This difference could be interpreted to mean that PHA recommendations are not necessarily bound by the timelines and other requirements of the WA *Implementation* subsection.
22	14	Process Hazard Analysis (PHA)	Issue: Currently, the PSM rule does not require PHA consideration of the process unit as a whole at any time after the initial PHA. Corrective Action: Consider adding language requiring a whole unit or "full" PHA at least once every 10 years: "*At least once every ten years after the completion of the initial process hazard analysis, all hazards of the process must be evaluated by conducting a complete PHA*."	A continual cycle of revalidations of initial PHAs could lead to oversights or omissions in a partial PHA review. Requiring a "full" PHA at ten-year intervals would ensure teams are periodically analyzing processes from feed through finished product.
23	15	Operating Procedures	Issue: Information on operating procedures should be accessible in the same manner to employees and to "any other person." Corrective Action: Consider adding "…near the process area or who…" as noted at (2)	Parallel requirements are needed for employees and for "any other person."
24	15	Operating Procedures	Issue: The following text is missing at (2): *"Changes to Operating Procedures must be managed in accordance with the MOC and MOOC requirements of the MOC and MOOC sections XXX*	Changes to operating procedures can introduce process safety hazards and should therefore be subject to the MOC and MOOC procedures.

			and YYY." Corrective Action: Consider adopting the text noted above.	
25	16	Operating Procedures	Issue: The following CA text is missing at (4): "*(5) The Operating Procedures shall include emergency procedures for each process, including any response to the over-pressurizing or overheating of equipment or piping, and the handling of leaks, spills, releases and discharges of highly hazardous materials. These procedures shall provide that only qualified operators may initiate these operations, and that prior to allowing employees in the vicinity of a leak, release or discharge, the employer shall, at a minimum, do one of the following…"* Corrective Action: Adopt the CA text pertaining to emergency procedures in the Operating Procedures, striking the following sentence at (4)(f)(i): "*Define the conditions for handling leads, spills, or discharges that provide a level of protection that is functionally to, or safer than, shutting down or isolating the process."*	The proposal introduces the following three elements pertaining to emergency response: *(A) Define conditions for handling leaks, spills or discharges that provide a level of protection that is functionally equivalent to, or safer than, shutting down or isolating the process;* *(B) Isolate any vessel, piping and equipment where a leak, spill or discharge is occurring; or,* *(C) Shutdown and depressurize all process operations where a leak, release or discharge is occurring.* WA has retained these three elements but has conflated them with safe work practices and has constructed an ambiguous, grammatically non-parallel list for this provision.
26	16	Operating Procedures	Issue: At (4)(f)(i), included the following text is included: *Define conditions for handling leaks, spills or discharges that provide a level of protection that is functionally equivalent to, or safer than, shutting down or isolating the process;*	Whether a practice is more protective than isolating equipment or shutting down a unit can only be determined in retrospect, through experience. "Safer than" is a matter of opinion until the practice, and the equipment, fails. Isolating the equipment, or taking the unit to a

			Corrective Action: Consider removing text at (4)(f)(i).Place (4)(f)(ii) and (iii) to under a new paragraph (5) that adopts that CA text pertaining to emergency procedures. MRH: At (3), use of "*and*…" implies that changes to each item in the list must occur to trigger review and updating, rather than any individual element of the list, which results by replacing "and" with "or." Corrective Action: Replace "and" with "or" in both places where "and" appears in the first sentence.	'safe off' state when the equipment can't be isolated, provides clear direction and removes subjectivity. The experience at the Richmond, Chevron fire of August 2012 illustrated the importance of language pertaining to emergency response procedures in the PSM Operating Procedures element. At that incident, the process was not shut down and a confused emergency response to the leaking pipe endangered the lives of 19 employees when the pipe catastrophically failed. Allowing the employer to define unique conditions for handling process incidents introduces the possibility of an insufficient or unsafe response to a process incident, as reported by the CSB in the Chevron, Richmond investigation. It is appropriate to review and update operating procedures after any one of these changes occurs.
27	17	Training	Issue: The following CA text is missing at (5): *"Within twenty-four months of the effective date of this chapter, the employer must develop…"* Corrective Action: Consider adopting the CA text	Including a timeline for implementation of requirements ensures the protections are established within a reasonable amount of time.
28	18	Contractors	Issue: Requirements for contract employers in (3)(a) currently reads: "… ensure that each contract	Adding the proposed language clarifies the contract employer's responsibility to ensure training is received, understood as intended, and

			employee is trained in the work practices…" Corrective Action: Consider adopting the following text: "…ensure that each contract employee is effectively trained in, and follows, the work practices …"	is applied in an effective manner.
29	19	Contractors	Issue: At (3)(b), the text currently reads: *"The contract employer must document that each…"* Corrective Action: Consider adopting the following text: *"The contract employer must ensure that each…"*	Adding the proposed language clarifies the contract employer's responsibility to ensure training is received and understood as intended. "Document" might only capture the employee's attendance at the training session.
30	19	Contractors	Issue: At 3(d), the following text from the CA regulation is missing: *"The contractor must ensure that each of its employees understands and follows the safety and health procedures of the refinery employer and the contractor."* Corrective Action: Adda new paragraph (3)(d) that adopts the following CA text: "*The contractor must ensure that each of its employees understands and follows the safety and health procedures of the refinery employer and the contractor."*	Adding the CA language clarifies the contract employer's responsibility to ensure the competency of its employees with regard to safety and health practices of both the contractor and the refinery employer. This improves process safety and the safety and health of refinery employees and contractor employees.
31	19	Pre-Startup Safety Review (PSSR)	Issue: The following CA text is missing at (1): *"…and for partial or unplanned shutdowns. The employer shall also conduct a PSSR for all turnaround work performed on a process."*	Conducting a PSSR after a partial or unplanned shutdown, and after a turnaround, is important to prevent process failures from occurring that might be related to, or be triggered by, process or equipment changes or conditions that were

			Corrective Action: Consider adopting the CA text.	introduced during the shutdown or turnaround.
32	19	Pre-Startup Safety Review (PSSR)	Issue: The following CA text is missing at 2(b): "*Process equipment has been maintained and is operable in accordance with design specifications."* Corrective Action: Consider adopting the CA text.	This sentence is needed to ensure the mechanical and operational integrity of process equipment prior to restarting the process, in addition to the process itself.
33	21	Mechanical Integrity	Issue: At (5)(a), the following CA text has been omitted: *"Repair methodologies shall be consistent with RAGAGEP or more protective internal practices"* Corrective Action: Consider adopting the CA text, but without the phrase, "or more protective practices," as follows: *"Repair methodologies shall be consistent with RAGAGEP."*	Ensuring repairs are consistent with PSI and RAGAGEP ensures that process equipment has a higher likelihood of operating safely until a permanent fix can be applied.
34	22	Hot Work Permit	Issue: At (2)(b) the word "object" appears and is undefined in the text. Corrective Action: Consider replacing the word "object" with "equipment of process."	Process equipment and process are each defined in the Definitions subsection; "object" is not defined.
35	23	Management of Change	Issue: At 2(b), the word "impact" must be modified by a term that applies the concept of "anticipation," or	Without modification, the term "impact" is applicable only after an incident has occurred.

			" expectation" of impact. Corrective Action: Consider adding the word, "potential" to modify "impact" at 2(b). At (5), a requirement has been established without a timeframe. Corrective Action: At (5), considering adopting the following phrase after "updated:" "…prior to implementation of the change." At (6), a requirement has been established without a timeframe. Corrective Action: At (6), considering adopting the following phrase after "updated:" "…prior to implementation of the change."	Providing some guidance as to when documentation should be updated increases the likelihood of the updates occurring. Requiring updating of the PSI prior to implementing the change helps ensure that the update actually occurs and is not simply delayed indefinitely. Requiring updating of the Operating Procedures prior to implementing the change helps ensure that the update actually occurs and is not simply delayed indefinitely. Current Operating Procedures are necessary for safe operation of the process, before and after the change.
36	25	Incident Investigation—Root Cause Determination	Issue: At (4), the writer of the investigation report is not specified Corrective Action: Consider adding the following text: *"The investigation team must prepare a written report at the conclusion…"*	Specifying the investigation team will be involved in the development of the final report ensures the team's findings and recommendations are captured and emphasized appropriately. The team's active involvement in creation of the report is also consistent with other sections of the rule, i.e. PHA, DMR, HCA, etc. This is consistent with paragraph (8) of this subsection.
37	25	Incident	Issue:	Including documentation of a broader list of

		Investigation—Root Cause Determination	At (4)(e), the text currently reads: "A list of any DMR(s), PHA(s), SPA(s), …" Corrective Action: Consider adopting the following text: *" A list of any relevant analyses, such as DMR(s), PHA(s), SPA(s)…."*	possible analyses increases the likelihood of those sources being reviewed by the team and can attest to the thoroughness of an investigation.
38	25	Incident Investigation—Root Cause Determination	Issue: At (4)(g), the team's recommendations should include interim measures that will prevent a recurrence or similar incident until final corrective Actions can be implemented. This is the CA text at (o)(6). This sentence was incorrectly place by WA into (5), which has to do with the employer's resolution of report recommendations. Corrective Action: Consider moving the text from (5) to (4)(g), as follows: "*Any recommendations resulting from investigation, including interim measures that will prevent a recurrence or similar incident until final corrective Actions can be implemented*."	The investigation team develops recommendations and the employer acts on the recommendations. WA mixed these roles up at (4) and (5).
39	25	Incident Investigation—Root Cause Determination	Issue: At (7), investigation reports are "…upon request, reviewed with employees whose job tasks are affected by the incident" Corrective Action: Consider removing "upon request" and revising to read "…reviewed with employees whose job tasks are affected by the incident in a timely manner."	A clear requirement to review the final investigation report with all employees directly affected by an incident increases the likelihood of the learnings from an investigation being understood and effectively applied. Without an expressed requirement for the employer, employees are less likely to be involved in a discussion of the incident's causes or corrective Actions.

40	26	Incident Investigation—Root Cause Determination	Issue: The following text is missing at (10): "*The employer must implement all recommendations that result form the investigation and HCA in accordance with the Implementation section*XXX" Corrective Action: Consider adopting the CA text.	A requirement pertaining to implementation appears in the HCA and DMR subsections of the WA proposal. By dropping this requirement from the Incident Investigation subsection, WA has introduced an internal "difference" within the proposed regulation regarding the obligation of the employer to implement recommendations made by an Incident Investigation team. This difference could be interpreted to mean that the team's recommendations are not necessarily bound by the timelines and other requirements of the WA *Implementation* subsection.
41	26	Emergency Planning and Response	Issue: The sentence at (2) is not properly constructed; it is also not clear what "document the nature and agreement" means. Corrective Action: Consider using the following text at (2): "… must develop, implement and maintain a written agreement between itself and each external emergency response organization regarding the assistance that the external organization is expected to provide."	The West, Texas explosion that resulted in the deaths of 13 first responders illustrates the importance of emergency response requirements in the PSM regulation, particularly with regard to pre-planning. Requiring a written agreement, along with documentation of activities, will help meet this objective.
42	27	Compliance Audits	Issue: The following CA text is missing at (5): "*The employer must implement all recommendations in accordance with the Implementation section*." Corrective Action: Consider adopting the CA text.	A requirement pertaining to implementation appears in the HCA and DMR subsections of the WA proposal. By dropping this requirement from the Compliance Audits subsection, WA has introduced an internal "difference" within the proposed regulation regarding the obligation of the employer to implement recommendations made as part of a Compliance Audit. This

				difference could be interpreted to mean that Compliance Audit recommendations are not necessarily bound by the timelines and other requirements of the WA *Implementation* subsection.
43	27	Trade Secrets	Issue: At (1), the text requires the employer to provide only a limited set of information to employees and employee representatives. It leaves out key information from all other PSM sections that is necessary for meaningful participation in the PSM program by employees and employee representatives. Corrective Action: At (1), consider replacing the text with the following: "*Employers must make all information necessary for complying with this chapter available to employees and employee representatives responsible for, or participating in, the development, implementation or maintenance of each PSM element set forth in this chapter."*: At (2), correct the reference to WAC 296-901-14018 and consider replacing the text with the following: *" The employer may require an individual to enter into a confidentiality agreement for information that meets the definition of a trade secret as set forth in WAC 296-901-14018, Trade Secrets."* At (3), consider replacing the text with the following: "*Subject to the rules and procedures set*	Some refinery employers in CA are requiring employees and employee representatives to sign confidentiality agreements for PSM policies and procedures developed under the new PSM regulation. This is preventing refinery workers and their representatives from sharing and developing best process safety practices. We also believe it represents an inappropriate application of the trade secret provisions of CCR Tile 8, Section 5194(i) (CA Hazardous Communication Standard), which are intended to (1) protect the identity of unique chemical ingredients, and (2) provide a mechanism for health care professionals to access this unique chemical information on an as-needed basis. It's possible that the extensive Trade Secret subsection proposed in WA could be used by employers to bar employees from accessing important PSM information and from sharing best practices in the development, implementation and maintenance of PSM policies and procedures.

			forth in WAC 296-67-117, the employer must provide employees and their designated representatives access to trade secret information."	
44	30	Damage Mechanism Review	Issue: At (11)(f), the following text has been added: "Operating metrics, instrumentation and alarm, and other related equipment that could cause, worsen, or mitigate damage mechanism." The intent of including the term "metrics" here is not clear. Corrective Action: Consider using another word in place of "metrics"; perhaps "data", "conditions", "variables" or "parameters" would add clarity.	"Metrics" typically applies to information that is gathered and measured against a standard value or established goal. Operating conditions to be avoided would be a more likely product of a DMR.
45	31	Damage Mechanism Review	Issue: At (7), investigation reports are "…upon request, reviewed with employees whose work assignments are within the unit described in the DMR" Corrective Action: Consider removing "upon request" and revising to read "… reviewed with employees whose work assignments are within the unit described in the DMR"	A clear requirement to review the final DMR report with all employees directly affected increases the likelihood of the learnings from a DMR being understood and effectively applied. Without an expressed requirement for the employer, employees are less likely to be involved in a discussion of the process unit's integrity and safety.
46	33	Hierarchy of Hazard Controls Analysis (HCA)	Issue: The implementation requirement has been amended from: "*The employer shall implement all*	To avoid ambiguity, the implementation text in the HCA subsection should reflect the exact wording of the implementation text in the DMR

			recommendations in accordance with subsection (x)," to read: "*The employer must implement all recommendations."* Corrective Action: Consider using the following wording for this sentence here (and for each subsection where a PSM team generates recommendations that link to the *Implementation* subsection; i.e., PHA, SPA, DMR, HCA, Incident Investigation and Compliance Audits): *The employer shall implement all recommendations in accordance with the Implementation section (XXX)*	subsection.
47	33	Process Safety Culture Assessment (PSCA)	Issue: The CA text has been altered at (3), effectively shifting the safety culture consultation function from the PSCA team to the employer. Corrective Action: Consider adopting the following CA language: "*The employer shall provide for employee participation, pursuant to subsection (q). The team must consult with at least one employee or another individual with expertise in assessing process safety culture in the petroleum refining industry."*	The PSCA consultation function is a responsibility of the PSCA team, not the employer. This distinction is reflected in the CA text at (3).
48	34	Process Safety Culture Assessment (PSCA)	Issue: A designee of the refinery manager is given the authority to sign-off on PSCA reports, collective plans and Interim Assessments. Corrective Action:	Process safety must be a core value at all company levels. Process safety culture is considered a "critical driver of process safety performance."[4] Comprehensive PSC Assessments are essential in order to evaluate whether the refinery prioritizes its process safety

			Strike “or designee” at (8)	management performance alongside other demands such as cost control, production demands and competitiveness. The PSCA signatory requirement will ensure that a refinery manager, as the top company representative at the refinery, is knowledgeable about and accountable for the refinery’s process safety culture and understands corrective Actions needed. This requirement helps ensure the manager’s effective process safety leadership. The requirement is also important because changes in refinery ownership, corporate leadership, technologies, management systems, and the economy can result in turnover in refinery managers. The requirement will help ensure a new manager’s familiarity with the refinery’s existing safety culture and workforce as well as her or his accountability. Elimination of the word “designee” will avoid ambiguity because the management position and background of the designee is not identified and delegation of this responsibility would not ensure that important culture information would reach the refinery manager or accountability of the manager.
49	36	Management of Organizational Change (MOOC)	Issue: There is a comma missing in line two at (2), at “…classification of employees**,** changing shift duration…” Corrective Action: Consider inserting a comma between “employees”	This is a grammatical error in the CA text that has been transmitted to the WA text.

			and "changing."	
50	36	Management of Organizational Change (MOOC)	Issue: At (5), the refinery manager or designee are responsible for certifying the MOOC is accurate and complies with the site MOOC procedures, but there is no expressed requirement to address the team's recommendations or implement Action items before the change is made. In addition, authority is delegated inappropriately to a "designee." Corrective Action: Consider adding at (5), or elsewhere, as appropriate, text detailing the refinery manager's responsibility to assure completion of Action items prior to an organizational change: "… that all recommendations have been addressed, that all Action items are complete…" Strike "or designee" at (5).	In order to effectively manage organizational change, the MOOC section should contain all basic principles of the MOC section. Action item management is directly addressed in MOC, and similarly, should be in MOOC. The refinery manager certification requirement will ensure accountability for the MOOC assessment and compliance with section's requirements. Elimination of the word "designee" will avoid ambiguity because the management position and background of the designee is not identified and delegation of this responsibility would not adequately ensure accountability. Reference to "section" rather than "subsection" is correct – refers to WAC-XX-XXX, instead of only subsection (5).
51	37	Process Safety Management Program	Issue: At (4), leading and lagging indicators are "process safety indicators." This subsection is missing a list of indicators. A specific set of process safety indicators should be tracked, documented, assessed against industry best practices, and reported to the public. This is required in the California Accidental Release Program (Cal/ARP) updates for Program 4, Petroleum Refineries, adopted Oct 2017.	The CSB recommended rules that would the "reporting of information to the public to the greatest extent feasible such as a summary of the comprehensive process hazard analysis which includes a list of safeguards implemented and standards utilized to reduce risk, and process safety indicators that demonstrate the effectiveness of the safeguards and management systems." The CSB further recommended establishing a program that "collects, tracks and analyzes process safety

			Corrective Actions: At (4), consider adding the following text: "*The employer must develop, implement and maintain an effective program to track, document, and assess the following process safety performance indicators against industry best practices:* *Past due inspections for piping and pressure vessels;* *(a) Past due PHA corrective actions, including corrective actions resulting from SPAs and HCAs;* *(b) Past due Incident Investigation corrective actions;* *(c) The number of major incidents and incidents that could reasonably have led to major incident;* *(d) The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair; and* *(e) The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems, including the date the temporary piping repair was installed and the date the permanent repair is to be completed."* At (5), consider adding the following text: *"For purposes of this section, past due is defined by RAGAGEP."* At (6), consider adding the following text: "*Within the first three months of each calendar year, the employer must post the process safety performance indicators described in subsection (4) a-f and their assessment against RAGAGEP to a website that is readily accessible without charge*	leading and lagging indicators from operators and contractors to promote continuous process safety improvements," including publicly reporting "required indicators annually at facility and corporate levels."

			the public." Issue: There is a need to ensure continuity of PSM information when a refinery is sold to a new owner. Corrective Action: At (7), consider adding the following text: "*Physical custody of all DMR reports must remain at the refinery over the life of process units. The refinery owner who either transfers ownership of the refinery or selects new management shall be responsible for assuring that all DMR reports are formally transferred to successors in interest and/or new management. The new owner and new management shall be responsible for retaining all DMR reports transferred to them."*	This clarification was recommended by CSB Board Member Rick Engler during a rulemaking stakeholder meeting based on his experience with refinery incident investigations. The absence of such a provision could leave a new owner/manager without adequate information about conditions of process units or equipment and could hamper future incident investigation efforts.
52	38	Implementation	Issue: The WA text replaces the term "recommendations" in (1) as used in the CA text, with the phrase, "process safety performance indicators." Corrective Action: Consider adopting the CA text: use "recommendations" rather than" process safety performance indicators."	The use of the phrase "process safety performance indicators" rather than "recommendations" represents a fundamental flaw in the logic and effectiveness of the PSM proposal. In six subsections of the WA proposal and the CA regulation (PHA, SPA, DMR, HCA, Incident Investigation and Compliance Audits) PSM teams are charged with developing *recommendations*, to which the employer must respond according to the requirements of the *Implementation* subsection. PSM teams do not develop "*process safety performance indicators*." By introducing this phrase at (1) in the *Implementation* subsection, the WA proposal

				creates a disconnect between the recommendations of the PSM teams and the obligation of the employer to take corrective action in response to those recommendations, as required by the provisions of the implementation subsection. This could allow the employer to effectively disregard the recommendations of the PSM teams. This represents a critical failure in the logic and structure of the PSM proposal.
53	38-40	Implementation	Issue: At (3) the employer is given the opportunity to reject the recommendations of PSM teams, which are made-up of both management and labor representatives. Corrective Action: At (3), strike the proposed text, including sentences at (a), (b) and (c). At (4), the text reads *"The employer may change a team recommendation for a safeguard if an alternative safeguard provides an equally or more effective level of protection".* Corrective Action: At (4), consider using the following text: *"The employer may implement an alternative corrective action for a recommendation if the employer can demonstrate in writing that the alternative measure will provide an equivalent or higher order of inherent safety. The employer may implement an alternative corrective action for a*	Providing a vehicle for rejecting (rather than simply changing) the recommendations made by PSM teams opens the possibility that any team recommendation, despite its necessity, could be rejected by the employer. The employer might elect to implement an alternative corrective action, but this does not change the PSM team's recommendations. The recommendation still stand; the employer's action does not affect the content of the recommendations. The proposed text confuses the role of the PSM teams in making

			recommended safeguard if the employer can demonstrate in writing that the alternative safeguard will provide an equally or more effective level of protection."	recommendations and the role of employer in implementing corrective actions.
			At (5), a mechanism is needed by which PSM teams are made aware of corrective actions by the employer that differ from the recommendations made by the team. It is important that PSM team members are afforded the opportunity to comment on the employer's choice of corrective action(s). Corrective Action: At (5), consider using the following text: *(1) "Prior to implementing a corrective action, the employer must:* *) Communicate the anticipated corrective action to all team members for comment* *) Document all written comments received from team members; and,* *) Document a final decision for each recommendation and communicate it to all team members"*	Communicating back to PSM team members completes the recommendation and corrective action "decision-loop" and requires improved accountability by the employer to the PSM teams. This information is essential for the teams to improve their effectiveness and, if necessary, for DOSH to apply in investigating a process incident, particularly in cases where the employer elected to change a PSM team recommendation, and when the team provided additional comment regarding the employer's choice of corrective action(s).
			At (10), a superfluous phrase has been added to end of the sentence. Corrective Action: Consider striking the following phrase: "…*that is in infeasible to do so."* At (13), a requirement to communicate to the PSM	The implications of delaying a corrective action that has been recommended by a PSM team can be significant. Deferred maintenance, for example, can result if a process failure. It is necessary for PSM team members to know that outcome of their recommendations. This information is also important for DOSH in

			team members for comment is missing. Corrective Action: Consider adding the following phrase: "…*be provided to all team members for comments and must…"* At (15) there is a need for language requiring the employer to retain documentation of PSM team recommendations and the corresponding corrective actions and their implementation taken by the employer.) At (15), consider adding the sentence, "All recommendations, corrective actions, timelines, MOCs and other documentation generated pursuant to this section must be retained for the life of the process."	investigating a process incident. The Implementation section is where all of the work of PSM is translated from paper into actual process safety improvements. Documenting the final implementation step is essential for the employer, employees, and DOSH to understand the safety of a process and its changing status over time. Documentation is the foundation of transparency and accountability, which is essential to an effective regulation, and to continuous improvement in process safety management. Implementation documents for a process and its related equipment are also essential to any investigation by DOSH into a process safety incident.

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Item	Page	Subsection	Comment
1	1	Purpose/Scope	In Scope, WA has appropriately focused the proposed changes on the petroleum refining industry. Refineries contain millions of barrels of highly hazardous materials, and due to the size, complexity, number of workers and community members potentially affected, and amount of change with the facility on a daily basis, refineries should be the subject of increased focus.
2	6	Employee Collaboration	Replacement of "Employee Participation" with "Employee Collaboration" is a significant and meaningful change. Collaboration speaks directly to the original intent of the Employee Participation element. Workers have not been provided an adequate say in PSM program development, and this clarification will give workers greater influence over safety in their workplaces. Also, Employee Collaboration is rightly emphasized in each applicable section throughout the rule.
3	8	Employee Collaboration	At (4)(a)(iv), the employer is required to develop "measures to ensure that employees who exercise stop work authority as described in this part are protected from intimidation, retaliation, or discrimination." This provision will encourage employees to take proactive Stop Work procedures without fearing that doing so could jeopardize their job. This "lowers the barrier" for employees to take action, which will help ensure that Stop Work procedures are actually used in practice. This will improve process safety and the implementation of the new regulation.
4	7	Employee Collaboration	At (4), the employer is required to consult with the employees in developing effective Stop Work procedures. Effective Stop Work procedures, including thorough documentation of instances where Stop Work is exercised, will encourage workers to voice their concerns and have their issues addressed, rather than remain silent, accept a known hazard, and potentially be injured in the workplace or allow a potential process safety hazard to go uncorrected.
5	12	Process Hazard Analysis (PHA)	At (5), the concept of a Safeguard Protection Analysis (SPA) is rightly incorporated into the PSM rule. Some refineries already use an SPA work process; since SPA represents a best practice, it should be a required part of a PHA.
6	15	Operating	At (1)(c)(vi) the rule requires the employer to include in

		Procedures	the Operating Procedures a provision pertaining to the "minimum number of personnel required to safely execute the procedure." This provision will improve process safety by establishing minimum staffing levels for procedures and helping to prevent personnel, including management, from taking "short cuts" with insufficient numbers of personnel.
7	16	Training	In the Training subsection, as well as other subsections, WA has recognized the significance of an *effective* training program for both operations and maintenance employees. Requiring documentation of the trainer and means used to verify understanding creates an auditable program, useful in any continuous improvement effort.
8	17	Contractors	At (2)(e), WA recognizes the importance of refinery employers retaining a log of injuries and illnesses experiences by employees of contractors. Knowledge of this record will indirectly improve safety and health practices among contractor employers and will help improve oversight of contractor safety and health by refinery employers.
9	17	Contractors	In the Contractors subsection, WA has recognized the significance of an *effective* training program for contract company employees. Requiring documentation of the means used to verify understanding creates an auditable program, useful in any continuous improvement effort.
10	18	Prestartup Safety Review	At (1), WA has made an important addition in specifying all prestartup safety review items have been resolved and all systems and components are in place and working properly. Starting a unit with incomplete systems process systems compromises the design of the facility and the safety of the workers.
11	19	Mechanical Integrity	At (1), WA has made a significant improvement in the application of PSM by clarifying that *all* process equipment is to be included in a refinery's mechanical integrity program.
12	21	Mechanical Integrity	At (6)(b), WA has made significant improvement by requiring evaluation of substantially similar equipment when a deficiency is found in one piece of equipment.
13	21	Mechanical Integrity	At(6)(c), WA has rightly specified all affected equipment will be inspected after a detrimental processing event.

14	22	Hot Work Permit	At (4), adding a requirement to retain hot work permits for one year increases auditability of the permitting program.
15	22	Management of Change	At (1), WA has clarified requirements by expressly including temporary repairs as part of the management of change (MOC) work process.
16	23	Management of Change	At (7), WA has significantly improved the effectiveness of the MOC work process by requiring sign-off by the employer that the "MOC evaluation is safe, complete, and all action items are completed prior to executing the change." This is clearer that MOC considerations being "documented and addressed," as required at (2), and will improve the safety and accountability of the MOC process.
17	23	Management of Change	At (8), WA has significantly improved the effectiveness of the MOC work process by requiring a damage mechanism review (DMR) and hierarchy of hazard controls analysis (HCA) for each major change.
18	24	Incident Investigation	At (8), WA has appropriately established a timeline for completion of the investigation team's written report. Establishing a timeline ensures the report is issued and corrective actions established in a timely manner.
19	25	Incident Investigation	At (9), WA has required an HCA for each recommendation resulting from an incident investigation. This significantly improves the effectiveness of corrective actions from an investigation, in that a rigorous system is used to identify higher-order safeguards that may be applied.
20	25	Incident Investigation	At (9), WA has required an HCA for each recommendation resulting from an incident investigation. This significantly improves the effectiveness of corrective actions from an investigation, in that a rigorous system is used to identify higher-order safeguards that may be applied.
21	25	Incident Investigation	At (10), WA has required retention of investigation reports for the life of the process. Keeping investigation reports allows reference and auditing and is a critical if a continual improvement program is to be effective.
22	25	Emergency Planning and Response	At (1), WA has required appropriate planning and procedures for handling small releases. This is important because small releases represent the majority of incidents and can sometimes escalate into larger releases if not

			properly controlled.
23	25	Emergency Planning and Response	At (2), while we have recommended test changes to clarify this paragraph, WA's proposed requirements will help improve the effectiveness and safety of an emergency response to a refinery by external response organizations.
24	25	Compliance Audits	At (2), WA has required the employer to consult with operators in each audited process and document the findings and recommendations from these consultations. This is important in evaluating the effectiveness of the audit, in that the audit findings can be compared with workers' input.
25	26	Compliance Audits	At (4), WA has required the employer to make the audit report available to employees and their representatives and respond in writing to any written comments submitted by same. These are all important when trying to ensure the validity and effectiveness of the auditing process. Without a feedback process, the objectivity and thoroughness of the report could be uncertain.
26	26	Damage Mechanism Review	Adoption of the concept of a rigorous damage mechanism review is an important step in improving process safety for refineries. This is another example of an industry best practice integrated into PSM requirements.
27	29	Hierarchy of Hazard Controls Analysis	Adoption of HCA concepts requires the employer to methodically evaluate the refinery, in an effort to identify opportunities to improve the effectiveness of safeguards and incorporate inherently safer technologies.
28	32	Process Safety Culture Assessment	Process safety culture is not a new concept. Integrating safety culture assessment into PSM the rules in order to improve a site's current culture and develop actions to drive a safer "Way things are done around here" is an absolutely necessary element of an effective safety program. Where honest effort, adequate resources and employee involvement have been invested in culture assessment efforts, positive results have been realized.
29	33	Human Factors	Adoption of requirements for the employer to evaluate and understand the interaction between the worker and the work environment is essential to improving process safety.

30	35	Management of Organizational Change	Adopting management of organizational change requirements is critical to avoiding negative impacts to process safety programs. Understanding how a proposed organizational change might affect a single position or a group of employees allows identification of problems before they are implemented. MOOC is an essential part of any effective MOC work process.
31	36	PSM Program	Adopting the requirements in the PSM Program section make it clear that the refinery's PSM program needs to be integral to every piece of the facility's operation, a concept that needs to be supported from the highest level of site management.
32	36	Implementation	Adopting PSM language that includes clear timelines for completion of reports and implementation of corrective actions is an essential part of ensuring that opportunities for process safety improvements are addressed in a timely manner. In the absence of clear time requirements, an action plan following an incident investigation, for instance, might not be assigned and implemented for months, if not years, after the incident. The timeframes proposed in the draft Implementation section are reasonable and appropriate.

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