



**COMMENTS OF THE AMERICAN PETROLEUM INSTITUTE**  
On  
The State of Washington – Process Safety Management for Petroleum Refineries -  
*Discussion Draft*

Submitted: May 14, 2018

The American Petroleum Institute (API) submits these comments in response to the availability of a discussion draft on a new chapter being prepared on Process Safety Management (PSM) for petroleum refining facilities by the WA Division of Occupational Safety and Health. API represents 620 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America’s energy, supports more than 10.3 million jobs and 7.6 percent of the U.S. economy (GDP).<sup>1</sup> The U.S. oil and natural gas industry has invested an estimated \$339 billion since 1990 toward improving the environmental performance of its products, facilities, and operations.<sup>2</sup>

API shares a common goal with Washington State Department of Labor and Industries (L&I) in creating and maintaining safe workplaces for Washington’s refinery employees and the surrounding communities. API members own and operate facilities throughout the country, including Washington, which will be directly affected by the new chapter/regulations. API and our members want to ensure that any final standard that may be adopted in the State of Washington is authorized under Washington law, reflects reasoned decision making fully supported by data, and is otherwise appropriate, flexible, cost-effective, and provides the clarity necessary to support effective facility compliance.

API is concerned that the proposed PSM standard singles out refineries for increased regulation particularly when L&I has not provided compelling data to show that WA refineries are unique from a process safety performance perspective from other process industries. Nor has L&I demonstrated that the existing safety regulations are inadequate or are not properly protecting the safety of the refinery workers, contractors and the local communities. L&I has the burden to show new or additional regulations are “reasonably necessary” and address a “significant risk of harm” – regulations should not be based on isolated incidents. If L&I determines that it has sufficient industry performance evidence to support changes to the WA PSM standard, then API recommends any regulatory proposals be based upon the following criteria:

---

<sup>1</sup> [http://www.api.org/~media/Files/Policy/SOAE-2018/SOAE2018\\_Report.pdf](http://www.api.org/~media/Files/Policy/SOAE-2018/SOAE2018_Report.pdf)

<sup>2</sup> <http://www.api.org/~media/Files/Publications/Environmental-Expenditures-2018.pdf>

- Be risk-based and performance-based (i.e., not prescriptive)
- Be fully supported by scientific data
- Address root causes of significant performance issues and incidents
- Be done only in conjunction with improved compliance assistance and better qualified and trained PSM inspectors
- Undergo rigorous cost-benefit analysis to clearly demonstrate that benefits to society exceed overall costs
- Provide adequate time and certainty for implementation
- Provide appropriate clarity and structure for compliance and enforcement
- Apply to all PSM regulated facilities

## **I. GOVERNMENT AND REGULATORY AGENCIES ARE IMPORTANT STAKEHOLDERS**

OSHA Process Safety Management (PSM) and EPA Risk Management Plan (RMP) regulations are the foundations for API's many refining-related safety programs. These regulations have primarily "performance-based" provisions versus "prescriptive" requirements that allow companies to select the most appropriate manner to achieve compliance for their unique situations. PSM and RMP regulations provide a framework for identifying and reducing risks at our facilities. This framework has been very helpful in laying the groundwork for the success of various API and API member company refining safety programs as evidenced by the safety statistics and other positive programs discussed below.

API believes the current federal PSM and RMP regulations are working, and WA state regulatory resources to improve refinery safety would be better devoted to increasing awareness of existing management and regulatory programs, enhanced training and compliance assistance, and other joint compliance-related efforts rather than attempts to create new regulations or revise existing regulations.

## **II. INFORMATION COLLECTION AND DISSEMINATION OF SAFETY DATA**

The common goal throughout our industry is that everyone goes home safely, and the community and the environment are properly protected. Safety is a core value of the API member companies – clear expectations are set that no one gets hurt and – in turn the companies translate this commitment into actions that build strong safety cultures where safety becomes a shared core value across the sites.

In addition, the API members strive for their sites to continuously improve safety performance. Member companies frequently review the performance metrics and discuss improvement opportunities across their entire organization. This includes all aspects of operational excellence, environmental performance, occupational safety, and process safety.

Occupational or personnel safety focuses on protecting the safety, health, and welfare of workers, often with education. This safety education focuses on preventing injuries and may include topics such as teaching workers proper lifting techniques, recognizing and avoiding hazards, utilizing advanced industrial hygiene technologies and other procedures for working safely.

For occupational safety, API compiles annual Occupational Injury & Illness and Process Safety Performance statistics. The API Workplace Injuries and Illnesses Safety (WIIS) report includes statistics on injuries and illnesses of both site employees and contractors, using data from the Bureau of Labor Statistics (BLS). The report has proven to be a useful tool that industry uses to benchmark their performance against their peers.

According to the 2016 Bureau of Labor Statistics (BLS), the total recordable incident rate for the manufacturing sector is 3.6 job-related injuries and illnesses per 100 full-time employees.<sup>3</sup> The 2016 total recordable incident rate for both company employees and onsite contractors working at petroleum refining facilities was 0.6 incidents per 100 full time employees.<sup>4</sup> In other words, refinery workers are 6 times safer than workers at manufacturing sites.

The table below, which is based on BLS data, provides a comparison of the injury rates for 2016 for the petroleum refining sector nationally to all industries (including state and local government), private industry (which performs better than the combined industry/government cohort), the construction industry, taxi service, and florists, all of which exhibit higher injury rates than the petroleum refining sector according to BLS. Indeed, the refining industry is among the best performing of industries for which BLS provided 2016 data.<sup>5</sup>

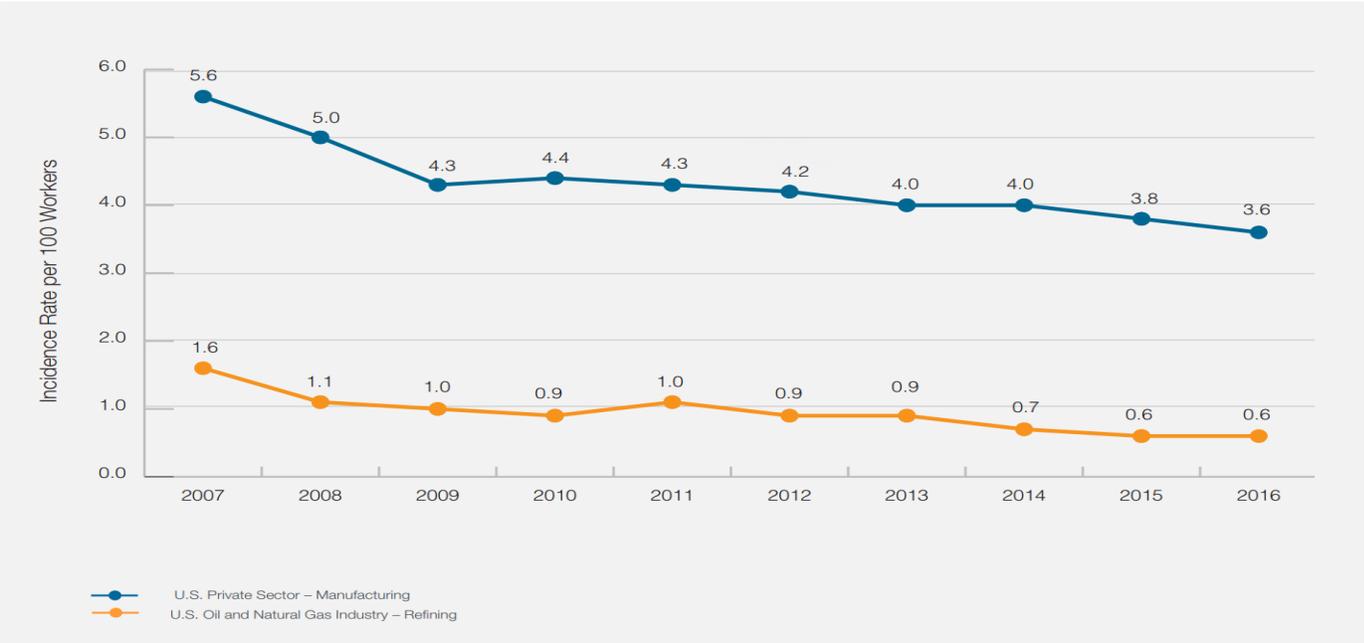
---

<sup>3</sup> <http://www.api.org/~media/Files/Publications/Workplace-Safety-2007-2016.pdf>

<sup>4</sup> Ibid.

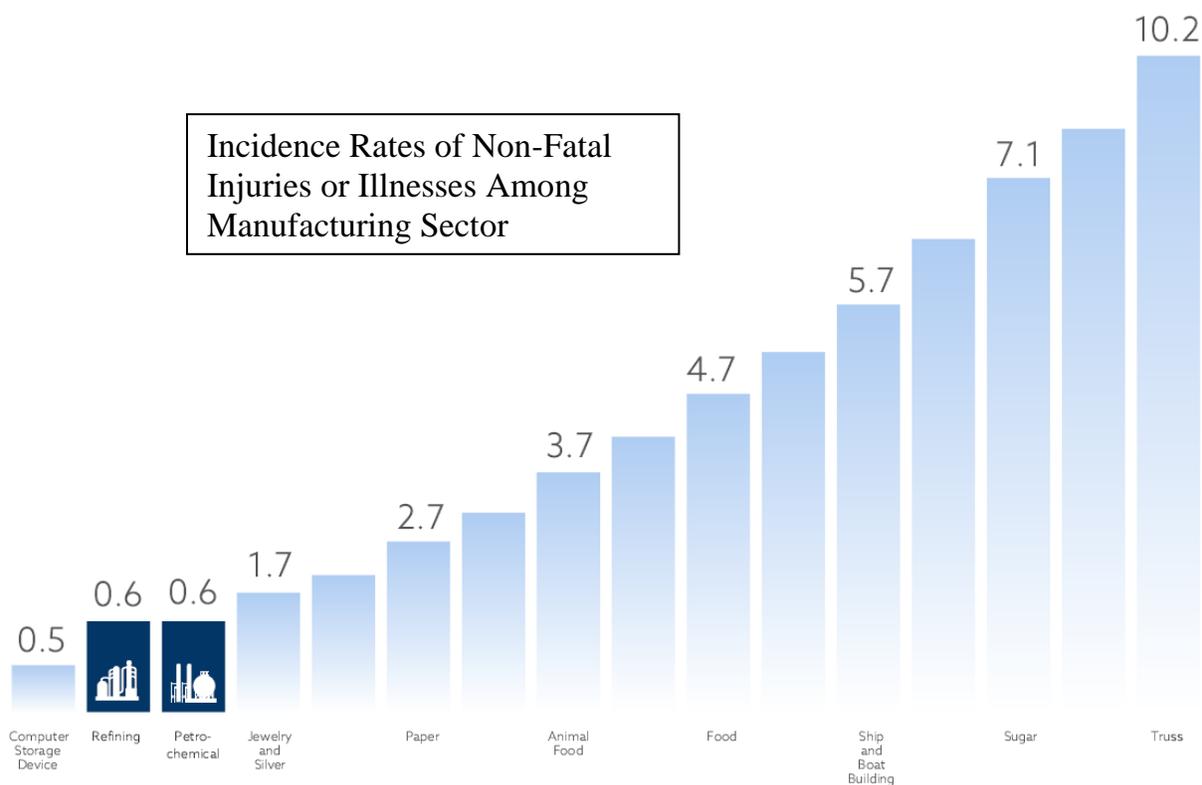
<sup>5</sup> <https://www.bls.gov/iif/>

Industry Sector	Total recordable cases	Cases with days away from work, job transfer, or restriction			Other recordable cases
		Total	Cases with days away from work	Cases with job transfer or restriction	
All industries including private, state, and local government	3.2	1.7	1.0	0.7	1.5
Manufacturing	3.6	2.1	0.9	1.1	1.5
Construction	3.2	1.9	1.3	0.6	1.3
Taxi service	2.8	1.9	1.6	0.3	0.9
Florists	1.1	0.5	0.2	-	0.7
Petroleum refineries	0.6	0.3	0.2	0.1	0.4



Source: API Workplace Injuries and Illnesses Safety Report

When comparing our industries to those within manufacturing, the refining and petrochemical industries are ranked #2 and #3 out of 520 other manufacturing sectors.



\*Per 100 Full-Time Employees  
Bureau of Labor Statistics; Industry, Injury, and Illness Data 2016, Summary Table 1

In addition to occupational safety, API has been collecting process safety data for the last several years. Process safety involves applying good operating, engineering, maintenance, inspection and other proven practices to the management of risks associated with the refinery manufacturing processes.

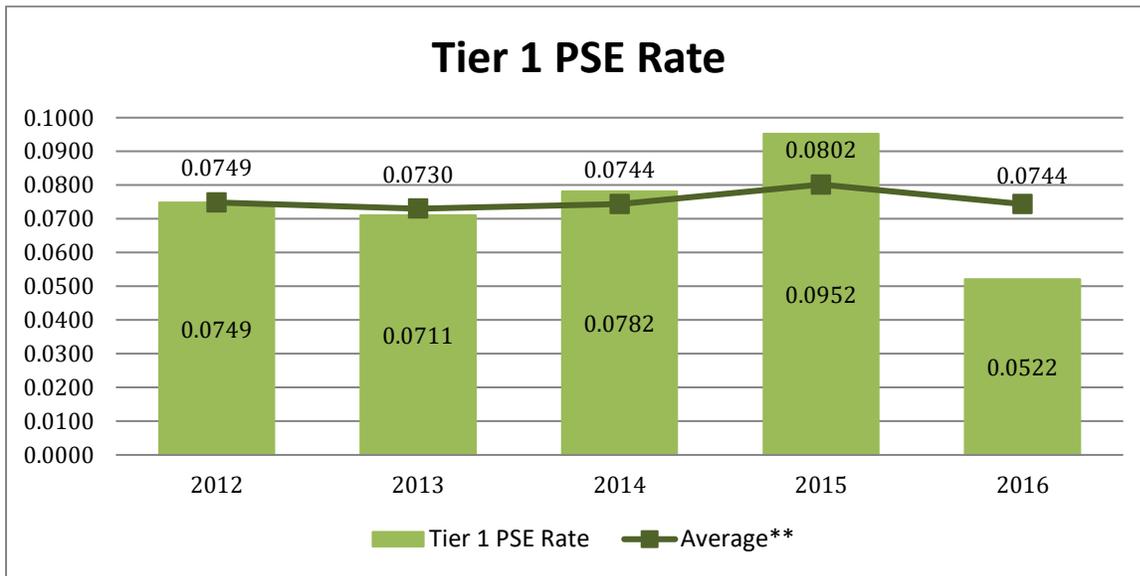
Process safety performance is measured using an API/ANSI Standard RP 754: *Process Safety Indicators for the Refining and Petrochemical Industries*. This recommended practice provides the basis for industry reporting of leading and lagging process safety indicators, as well as methods for establishing performance metrics for identifying such indicators. This comprehensive standard allows facilities, companies and the refining industry to improve process safety performance, reduce risk and measure performance in a consistent method.

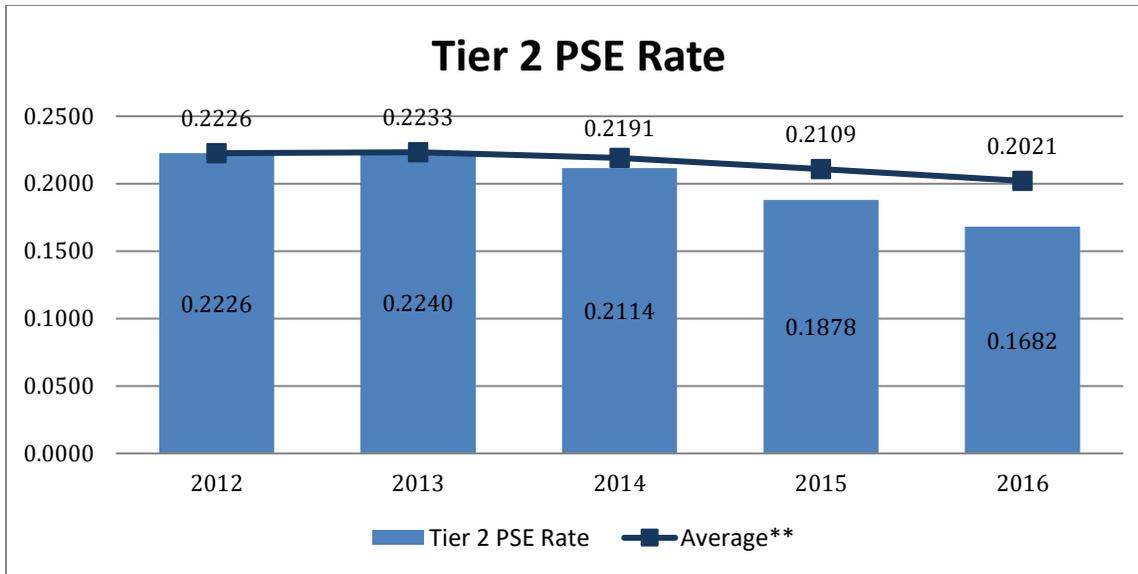
API annually collects process safety event data from companies that volunteer to participate and publishes that data, so the companies can benchmark their process safety performance against their industry peers. For 2016, 91% of the U.S. refining capacity participated in the survey. The table and chart below illustrate the improving process safety performance. As you can see from this chart, our process safety performance has improved over the past five years. In addition, the data provides trends that assist

industry in determining where opportunities exist for process safety performance improvements.

### U.S. Refining (API) PSE Summary

	2012	2013	2014	2015	2016	5-Year Average
Number of Companies	23	25	26	33	33	28
Number of Refineries	78	80	85	95	96	87
Refinery Capacity Response Rate	89%	87%	90%	93%	91%	90%
Tier 1 PSEs Reported	106	100	118	147	80	110
Tier 1 PSE Rate per 200,000 Workforce Hours	0.0749	0.0711	0.0782	0.0952	0.0522	0.0744
Tier 2 PSEs Reported	315	315	319	290	258	299
Tier 2 PSE Rate per 200,000 Workforce Hours	0.2226	0.2240	0.2114	0.1878	0.1682	0.2021





Source: API Process Safety Event (PSE) Public Reporting per API RP 754

### III. API REFINING SAFETY STANDARDS

The refining industry has made significant investments in programs, training, standards and practices, and equipment that have led to safety performance improvements. These investments continue as part of the industry’s overall continuous improvement effort.

API has developed and maintains more than 180 refining safety and operational standards and recommended practices under its American National Standards Institute (ANSI) accredited program. API and its member companies are committed to ensuring that all industry standards contain the latest science and technologies; that they recognize proven industry practices and incorporate lessons-learned from past incidents and near misses. These standards have been incorporated by reference into Federal, State and International regulations. These resources are published and updated to reflect the latest science, technologies and enhanced practices and procedures.

### IV. EDUCATION AND COLLABORATION FOR CONTINUOUS IMPROVEMENT

API hosts a variety of meetings for safety and standards communities throughout the year. These meeting provide a forum for safety practitioners and technology specialists to share information, practices, lessons-learned, etc. to improve safety performance.

Examples of popular API refining conferences include:

- API Tanks, Valves, and Piping Conference & Expo

- API Inspection and Mechanical Integrity Summit

In addition, API continually offers a variety of training to all levels of employees within their companies; this includes safety leadership training for their executives and upper management, process safety training for employees on a regular interval and safety training for new employees. API-U is a program within API that conducts training and qualifies trainers. API-U also provides ELearning, the online format of which enables workers to easily continue their professional development. Courses include mechanical maintenance, electrical maintenance, instrumentation & controls and safety. API manages these programs to ensure that the training received by industry is consistent and of the highest quality.

API also offers certification programs for performing tasks and inspections that are integral to maintaining a safe work environment and improving safety performance. An example of this is API's Individual Certification Program, which certifies individuals to properly perform inspections on pressure vessels, process piping, tanks, corrosion, and risk-based inspection methodologies.

Another very successful API safety program is a formal service that uses qualified, highly experienced 3<sup>rd</sup> party assessors to evaluate and provide feedback on refinery process safety systems. These assessments evaluate both the robustness of the management system and the level of execution of the safety systems in the refinery.

Industry efforts coupled with existing regulatory requirements work well to make the U.S. refining industry among the safest manufacturing sectors.

## **V. CONCLUSION**

API shares a common goal with L&I in creating and maintaining safe workplaces for Washington refinery employees and our surrounding communities. API is proud of the safety performance of the API members and the commitment to safety that we get from our employees and contractors. This type of performance can only be achieved when you 1) have a strong culture of safety and 2) understand and properly manage the risks involved in the refining processes. Refineries use the existing regulatory framework to implement effective and robust practices and procedures to ensure the workers are operating the equipment safely.

As noted above, the refining industry has invested, and continues to invest, significant resources at both the individual company and industry levels to improve both occupational and process safety performance. These investments include:

- Developing new and updating existing refinery safety consensus standards
- Sponsoring efforts to advance and share new/improved technologies, practices and procedures
- Implementing leading and lagging metrics to enhance the process safety performance
- Conducting industry technical forums and providing other mechanisms to share lessons-learned from incidents and near misses
- Evaluating industry safety data to identify performance improvement opportunities
- Offering a service that uses qualified, highly experienced 3<sup>rd</sup> party assessors to evaluate and provide feedback on plant process safety systems

Given the proven safety performance of the U.S. refining industry, and the lack of any compelling data provided by L&I, API does not support L&I's plan to develop broad process safety management regulations targeting the state's five refineries. If L&I believes that PSM performance improvements are needed, API supports devoting L&I resources towards areas such as additional compliance assistance programs, hiring inspectors knowledgeable in PSM and refinery operations, and training to enhance the competency of inspectors/regulators.

Should you have any questions about the API comments, please contact me at 202/682-8176 ([Chittim@api.org](mailto:Chittim@api.org)). Thank you for the opportunity to provide input on these important topics.

Sincerely,



Ron Chittim  
Manager – Downstream/Refining

API | 1220 L Street, NW | Washington, DC 20005  
202.682.8176 P | [Chittim@api.org](mailto:Chittim@api.org)