



STATE OF WASHINGTON  
DEPARTMENT OF LABOR AND INDUSTRIES  
PO Box 44000 • Olympia, Washington 98504-4000

July 19, 2014

Dr. Rafael Moure-Eraso, Chair  
U. S. Chemical Safety and Hazard Investigation Board  
2175 K Street, NW; Suite 650  
Washington, DC 20037-1809

Dear Dr. Moure-Eraso:

Thank you for the receipt of the U. S. Chemical Safety Board (CSB) Investigation Report on the April 2, 2010 Tesoro Anacortes catastrophe. I first want to thank the CSB field staff for working in partnership with the state of Washington Occupational Safety and Health Staff to share facts and evidence to help advance public and worker safety and health incident prevention.

We note that our occupational safety and health compliance investigation report issued in November 2010 arrived at many similar root cause concerns that the CSB has detailed in its May 2014 report and agree in general with the CSB root cause discussion of the issues leading to the incident and to so many preventable worker deaths.

Regarding the CSB report recommendations to Washington State Dept. of Labor and Industries, Division of Occupational Safety and Health (WADOSH):

**CSB Recommendation 2010-08-I-WA-R8**

*Perform a verification audit at all Washington petroleum refineries to ensure:*

- a. Prevention of HTHA equipment failure and safe operation of the equipment. Audit HTHA prevention and process condition monitoring techniques used at all Washington petroleum refineries. Verify that all affected equipment in use meets the requirements contained in Recommendation 2010-08-I-WA-R10;*
- b. For nonroutine work, a written hazard evaluation is performed by a multidisciplinary team and, where feasible, conducted during the job planning process prior to the day of the job execution. Verify that each facility has an effective written decision-making protocol used to determine when it is necessary to shut a process down to safely perform work or conduct repairs. Ensure the program reflects the guidance in the CCPS Risk Based Process Safety book related to hazardous nonroutine work; and c. Effective programs are in place to control of the number of essential personnel present during all hazardous nonroutine work.*

WADOSH staff have reviewed this recommendation and we have determined that the agency will contact the state's refineries operators and request a response to the three items contained in Recommendation 2010-08-I-WA-R8 for our review. Based on the responses received any necessary further actions will be determined within the regulatory authority which exists at that time.

**CSB Recommendation 2010-08-I-WA-R9**

*Effectively participate in the Tesoro Anacortes Refinery process safety culture survey oversight committee as recommended under recommendation 2010-08-I-WA-R15. Incorporate the expertise of process safety culture experts in the development and interpretation of the safety culture surveys. Ensure the effective participation of the workforce and their representatives in the development of the surveys and the implementation of corrective actions.*

Washington DOSH staff will participate in the Tesoro Anacortes Refinery Process Safety Culture Survey Oversight Committee if it is established by Tesoro Anacortes and when Tesoro invites our participation.

Our point of contact on these recommendations will be Jeff Killip, Industrial Hygiene Technical Policy Manager for the Washington State Dept. of Labor and Industries, Division of Occupational Safety and Health. His contact information is 360.902.5530 and [Jeffery.Killip@lni.wa.gov](mailto:Jeffery.Killip@lni.wa.gov)

Sincerely,



Anne F. Soiza  
Assistant Director

cc: Joel Sacks, Director  
David Puente, Deputy Asst. Director  
Christina Morgan, Recommendations Specialist, CSB  
Kim Nibarger, United Steel Workers

Bcc: Jeff Killip  
Amy Leneker  
Craig Blackwood  
Alan Lundeen, Technical Services and Standards, DOSH

JAY INSLEE  
Governor



STATE OF WASHINGTON  
Office of the Governor

August 14, 2014

Dr. Rafael Moure-Eraso, Chair  
U.S. Chemical Safety and Hazard Investigation Board  
2175 K Street NW, Suite 650  
Washington, DC 20037-1809

RE: CSB Rec. Nos. 2010-08-1-WA-R5 through R7

Dear Dr. Moure-Eraso:

Thank you and your staff at the U.S. Chemical Safety Board (CSB) for the thorough Investigation Report of the April 2, 2010, Tesoro Anacortes catastrophe. The report complements the findings of the Department of Labor and Industries (L&I) identified in their November 2010 Investigation and adds further to the prevention knowledge gained in that investigation. I am pleased this catastrophic event has received such significant attention as the prevention of future environmental and worker safety and health chemical release events in Washington is of the utmost importance to me.

The report identified three specific recommendations for my consideration. The text of those recommendations is included in the appendix. Each is addressed below.

***CSB Recommendation 2010-08-1-WA-6 Response***

This recommendation would require the establishment of a well-funded, well-staffed, technically qualified regulator and periodic market analyses and benchmark reviews to ensure the compensation system remains competitive with Washington's petroleum refineries.

Keeping workers safe at their place of employment is a high priority for my administration. L&I has a skilled and dedicated team committed to workplace safety. However, PSM inspections include very technically complex challenges. Therefore, I have asked L&I to review the size, quality and training of staff to ensure they have the necessary resources to help employers understand the requirements for a safe workplace and to enforce these standards. Moving forward, I expect the Department to continue to assess and refine program resources so that they keep up with technological and industry advances.

***CSB Recommendation 2010-08-1-WA-5 and 2010-08-1-WA-7 Response:***

These recommendations suggest the Governor (1) revise existing regulations for petroleum refineries to promote continuous process safety improvements through six additionally rigorous requirements and (2) work with the regulator, petroleum refining industry, labor, and other

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relevant stakeholders to develop a system to collect, track, and analyze leading and lagging process safety indicators to promote continuous process safety improvements.

As a result of this report, L&I will be initiating conversations with business and labor stakeholders to review the complete list of CSB recommendations. Additionally, L&I will be reviewing similar efforts from the Occupational Safety and Health Administration, other states, and industry best practices to identify opportunities to further reduce or eliminate hazards associated with the catastrophic release of highly hazardous chemicals for all workplaces covered under Washington's Process Safety Management of Highly Hazardous Chemicals rules. The goal would be to significantly reduce the likelihood that this level of tragedy happens again.

Thank you for submitting your staff's substantive work and opinions on advising the state of Washington. We are fully committed to the prevention of all unnecessary worker fatalities, injuries and illnesses for our workers in Washington State. If you have any questions, please contact Joel Sacks, Director, Department of Labor and Industries at (360) 902-4203 or [joel.sacks@lni.wa.gov](mailto:joel.sacks@lni.wa.gov).

Very truly yours,



Jay Inslee  
Governor

Enclosure

cc: The Honorable Patty Murray, U.S. Senate  
The Honorable Maria Cantwell, U.S. Senate  
The Honorable Rick Larsen, U.S. House of Representatives  
Joel Sacks, Director, Dept. of Labor and Industries  
Anne F. Soiza, Assistant Director, Dept. of Labor and Industries, DOSH  
Christina Morgan, Recommendations Specialist, CSB  
Dan Tillema, Investigations Team Lead, CSB



Appendix: CSB Recommendations to the Governor of the State of Washington

**CSB Recommendation 2010-08-I-WA-6**

*Establish a well-funded, well-staffed, technically qualified regulator with a compensation system to ensure the Washington Department of Labor and Industries regulator has the ability to attract and retain a sufficient number of employees with the necessary skills and experience to ensure regulator technical qualifications. Periodically conduct a market analysis and benchmarking review to ensure the compensation system remains competitive with Washington petroleum refineries.*

**CSB Recommendation 2010-08-I-WA-5**

*Based on the findings in this report, augment your existing process safety management regulations for petroleum refineries in the state of Washington with the following more rigorous goal-setting attributes:*

*a. A comprehensive process hazard analysis written by the company that includes:*

*i. Systematic analysis and documentation of all major hazards and safeguards, using the hierarchy of controls to reduce those risks to as low as reasonably practicable (ALARP);*

*ii. Documentation of the recognized methodologies, rationale and conclusions used to claim that safeguards intended to control hazards will be effective;*

*iii. Documented damage mechanism hazard review conducted by a diverse team of qualified personnel. This review shall be an integral part of the Process Hazard Analysis cycle and shall be conducted on all PSM-covered process piping circuits and process equipment. The damage mechanism hazard review shall identify potential process damage mechanisms and consequences of failure, and shall ensure effective safeguards are in place to control hazards presented by those damage mechanisms. Require the analysis and incorporation of applicable industry best practices and inherently safer design to the greatest extent feasible into this review; and*

*iv. Documented use of inherently safer systems analysis and the hierarchy of controls to the greatest extent feasible in establishing safeguards for identified process hazards. The goal shall be to drive the risk of major accidents to As Low As Reasonably Practicable (ALARP). Include requirements for inherently safer systems analysis to be automatically triggered for all Management of Change and Process Hazard Analysis reviews, prior to the construction of new processes, process unit rebuilds, significant process repairs, and in the development of corrective actions from incident investigation recommendations.*

*b. A thorough review of the comprehensive process hazard analysis by technically competent regulatory personnel;*

*c. Required preventative audits and preventative inspections by the regulator;*

*d. Require that all safety codes, standards, employer internal procedures and recognized and generally accepted good engineering practices (RAGAGEP) used in the implementation of the regulations contain adequate minimum requirements;*

*e. Require an increased role for workers in management of process safety by establishing the rights and responsibilities of workers and their representatives on health and safety-related matters, and the election of safety representatives and establishment of safety committees (with equal representation between management and labor) to serve health and safety-related functions. The elected representatives should have a legally recognized role that goes beyond consultation in activities such as the development of the comprehensive process hazard analysis, management of change, incident investigation, audits, and identification and effective control of hazards. The representatives should also have the authority to stop*

*work that is perceived to be unsafe or that presents a serious hazard until the regulator intervenes to resolve the safety concern. Work force participation practices should be documented by the company to the regulator; and*

*f. Requires 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.*

**CSB Recommendation 2010-08-I-WA-7**

*Work with the regulator, the petroleum refining industry, labor, and other relevant stakeholders in the state of Washington to develop and implement a system that collects, tracks, and analyzes process safety leading and lagging indicators from operators and contractors to promote continuous process safety improvements. At a minimum, this program shall:*

*a. Require the use of leading and lagging process safety indicators to actively monitor the effectiveness of process safety management systems and safeguards for major accident prevention. Include leading and lagging indicators that are measureable, actionable, and standardized. Include indicators that measure safety culture, such as incident reporting and action item implementation culture. Require that the reported data be used for continuous process safety improvement and accident prevention;*

*b. Analyze data to identify trends and poor performers and publish annual reports with the data at facility and corporate levels;*

*c. Require companies to publicly report required indicators annually at facility and corporate levels;*

*d. Use process safety indicators (1) to drive continuous improvement for major accident prevention by using the data to identify industry and facility safety trends and deficiencies and (2) to determine appropriate allocation of regulator resources and inspections; and*

*e. Be periodically updated to incorporate new learning from world-wide industry improvements in order to drive continuous major accident process safety improvements in Washington.*