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ORAL TESTIMONY

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BEFORE THE UNITED STATES SENATE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

DIRKSEN SENATE OFFICE BUILDING, ROOM 406, 10:00 AM

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Chairman Boxer, Ranking Member Vitter, distinguished members of the Committee, thank you for the opportunity to appear before you today. My name is Michael Wilson and I serve as Chief Scientist in the California Department of Industrial Relations, within the state's Labor and Workforce Development Agency. Our Department is charged with protecting the health and safety of California's 18 million workers. We are a core member of the Governor's Interagency Refinery Task Force, whose views I represent today.

As you may know, on August 6, 2012 the Bay Area's Chevron Richmond refinery experienced a catastrophic failure of a corroded pipe. The pipe emitted an explosive vapor cloud that rapidly expanded through the unit to about the size of a football field. It engulfed 19 workers, who avoided injury or death by escaping into other areas of the plant about 90 seconds before the cloud ignited. One Chevron firefighter escaped through the ensuing fire wearing protective clothing.

The resulting smoke plume spread well beyond the refinery confines and ultimately caused some 15,000 people in nearby communities to seek medical attention for symptoms related to possible exposure to the combustion products.

Immediately following the incident, Governor Jerry Brown established an Interagency Working Group on Refinery Safety, made up of 13 state agencies and departments, and charged the Group with figuring out what went wrong in Richmond and what should be done to prevent an incident such as this from happening again. The Working Group spent the next 18 months gathering input from the public and from technical experts in industry, labor, the U.S. Chemical Safety Board, emergency responders, and regulatory agencies.

Last month, the Working Group released the final report of its findings and recommendations, entitled *Improving Public and Worker Safety at Oil Refineries*.⁽¹⁾ The Report addresses both incident *prevention* and *emergency response*. Nine prevention recommendations include:

- 1) Improve coordination of regulatory activities to avoid duplication;
- 2) Improve the flow of relevant information from refineries to agencies and to the public;

¹ Governor Edmund G. Brown, Jr. *Improving Public and Worker Safety at Oil Refineries: Report of the Interagency Working Group on Refinery Safety* (February 2014) Available: <http://www.dir.ca.gov/dosh/interagency-refinery-task-force.html> (Accessed March 2, 2014).

- 3) Improve overall safety and security by requiring the adoption of inherently safer systems, wherever feasible;
- 4) Improve incident investigations by requiring root cause analyses after significant incidents;
- 5) Improve methods for detecting problems early, such as pipe corrosion, by requiring facility-wide hazard reviews;
- 6) Improve the safety culture at refineries by requiring facility-wide safety culture assessments;
- 7) Improve the integration of human factors into safety systems, such as worker training, experience, and fatigue;
- 8) Strengthen regulatory enforcement capacity to ensure adequate oversight; and
- 9) Improve community access to air quality monitoring data around refineries.

Relevant to today's hearing, the Report is noteworthy because—like Executive Order 13650—it expands the focus of chemical safety from requiring industry to install protections around hazards to requiring industry to continuously evaluate and reduce those hazards, wherever feasible.

The Report concludes that in complex industrial operations, prevention is best achieved through the application of a hierarchy of controls, in which inherently safer design is the primary objective. The Report grounds this recommendation in the industry's own guidance documents, as published by the Center for Chemical Process Safety, within the American Institute of Chemical Engineers.⁽²⁾

Of course, like any industrial process, inherently safer design is not a perfect science. If improperly applied, it can shift risks along a production or process chain. It can sometimes be difficult and expensive to implement in older facilities, such as California's refineries.

Despite these challenges, inherently safer design is increasingly recognized by industry leaders as the most effective and enduring defense against potential accidents, natural disasters, or acts of sabotage. Many industry leaders have adopted this approach, perhaps most notably, for example, in their successful efforts to replace pressurized tanks of highly toxic and mobile chlorine gas with sodium hypochlorite, otherwise known as bleach. This is an example of inherently safer design through chemical substitution.

The Governor's report concludes that "improving refinery safety is a goal strongly shared by government, industry, workers, and communities." It calls on government agencies and industry to "work together to develop and implement a culture that fosters inherent safety, including stronger accident prevention and hazard reduction measures."⁽³⁾ We are now moving forward in our regulatory processes to implement the Report's recommendations.

We are heartened to see action on chemical safety and security at the Federal level. We strongly encourage Federal OSHA, the U.S. EPA, and the Department of Homeland Security to continue their collaboration and—wherever possible—incorporate strategies to prevent risks through the application of inherently safer design within a hierarchy of controls.

The State of California offers our support to your efforts in moving this important initiative forward. Thank you very much for your attention this morning. I would be happy to answer any questions.

² Amyotte, PR, et al. Incorporation of Inherent Safety Principles in Process Safety Management. *Proceedings of the 21st Annual International Conference of the Center for Chemical Process Safety* (p. 178). See page 29 in Brown, *op cit* at 1.

³ Brown, *op cit*. p. 34.