



Testimony

April 5, 2013

Senator Loni Hancock and Assemblymember Nancy Skinner
Public meeting on the Chevron Refinery fire in Richmond, CA, in August 2012.
Richmond City Council Chambers
Civic Center Campus, 440 Civic Center Plaza
Richmond, CA 94804

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Senator Hancock, Assemblymember Skinner, Members, thank you for convening the meeting today and for providing the opportunity for me to present some of the findings of our summary report commissioned by the Governor's Interagency Task Force on Refinery Safety.

My name is Mike Wilson, and I'm the Director of the Labor Occupational Health Program at UC Berkeley and the Associate Director for Integrative Sciences of the Berkeley Center for Green Chemistry.

I speak to you today as a UC Berkeley public health scientist and as author of the report, but my remarks do not necessarily reflect the views of the Regents of the University of California or of UC Berkeley.

The Labor Occupational Health Program resides within the Center for Occupational and Environmental Health, which was established 35 years ago by the Legislature to serve as a bridge between the University and the State of California; to deploy the technical resources of the University in helping to solve the state's public and environmental health problems. The report you have today falls within that mission.

Overall, there were three overarching findings:

First, across the 10 meetings and in both Northern and Southern California, there was remarkable *similarity* in the problems people identified and the solutions they proposed.

Second, there was an overarching sentiment that the safety and environmental performance of the refineries needs to be *fundamentally* improved, not simply tweaked.

Third, there was broad agreement that those improvements would best be achieved through a suite of forward-looking regulations that improve transparency and public accountability in the industry.

The problems identified in the report fall into three general categories:

Category 1: Emergency Response

Category 2: Prevention

Category 3: Sustainability

I'd like to summarize three problems and three recommendations from each category.

Category 1: Preparedness, Monitoring and Emergency Response

1) In responding to a major refinery incident, public fire agencies carry financial burdens, draw on neighboring agencies for mutual aid coverage, and leave their own jurisdictions with fewer available resources.

Actions needed: California should evaluate strategies for refineries to “pre-pay” public fire agencies for emergency response and equipment costs, including payments for overtime to back-fill positions for the duration of an incident. When a refinery does not staff its own on-site fire department, the refinery should support costs of public fire agency training and equipment.

2) Regional air districts do not have sufficient capacity to monitor plant emissions on either a routine basis or during upset events, nor do they have the capacity to effectively communicate helpful information to the public.

Actions needed: California should require that air districts, in cooperation with the state Air Resources Board, effectively monitor air contaminants (including particulate matter) during both routine and upset refinery events and that they communicate this information to the public in multiple ways. The districts should be required to establish systems to communicate information to health care providers and emergency responders. Health warning levels for both

acute and chronic effects should be those established by the California EPA Office of Environmental Health Hazard Assessment (OEHHA) and should be calibrated for exposures to children and other susceptible groups. The refineries should carry the costs for the purchase and maintenance of state-of-the-art, real-time air monitoring and communications equipment.

3) Refinery safety is compromised by the use of transient, contract employees, who are generally less-well trained, less committed to safety, and less able and willing to speak up about safety hazards, compared to full-time, union-represented refinery workers.

Actions needed: California should require refineries to report the number of contract employees they hire each year, their duration of employment, their level of training, and the positions these employees fill. Local hiring requirements and incentives should be implemented, along with industry-supported and state-organized apprenticeship programs for residents of cities that host a refinery.

Category 2: Prevention

1) The refineries have not proactively communicated information on corrosion damage to government, workers, or the public.

Actions needed: California should require the refinery industry to conduct a comprehensive audit of corrosion damage, and the results should be reported publicly. A useful initial measure for providing information on corrosion damage is through reporting on the use of clamps and Management of Change (MOC) actions taken for each clamp. Ongoing auditing and public reporting of clamp usage, and its scheduled replacement time, should be required of the refineries to ensure that corrosion risks are identified, prioritized, and repaired.

2) Maintenance and safety problems identified by refinery workers are often not corrected for months or years.

Actions needed: California should require refineries to disclose to government, employee representatives, and to a publicly accessible database normalized information on (i) maintenance and safety requests made, (ii) corrective actions taken or not taken, (iii) outcomes, (iv) root cause of the maintenance or safety problem, and (v) the management individual accountable. A record of this type is needed to track refinery performance and identify best practices. Regulatory actions should be triggered based on the number of maintenance and safety requests left open and uncompleted over a defined period of time.

3) The Contra Costa County Industrial Safety Ordinance (ISO) is a nationally recognized regulatory program that has produced a marked decline in refinery incidents and could serve as a statewide model; there are also areas where it should be modernized and strengthened.

Action needed: California should evaluate the ISO for areas that are in need of modernization and strengthening, and then evaluate its efficacy as a statewide model.

Category 3: Sustainability

According to data reported by the federal Energy Information Agency, the sulfur content of crude oil imports into California refineries has increased steadily since 1985 and is expected to continue to do so. The data show that the sulfur content has increase from 1.05% in January 1985 to 1.35% in December 2012.

Sulfur impurities need to be removed prior to processing, which increases energy demands. Higher-sulfur crude oil produces toxic air contaminants (hydrogen sulfide and sulfur dioxide) and increased greenhouse gas emissions, and it increases the rate of corrosion throughout a refinery's mechanical systems.

Action needed: Require air districts to promulgate rules that prohibit increases in routine and episodic air emissions that result from the use of higher sulfur-content oil inputs. Consider rules that would bar or limit the importation of refined oil products.

B) Refineries are the largest energy-using industry in California and the most energy intensive industry in the U.S. The state's refineries have added energy intensive equipment, such as hydrogen plants and hydrotreaters, to process higher-sulfur crude oil inputs.

California industrial facilities emit about 23% of the state's greenhouse gases; refineries produce 40% of these industrial emissions, or about 10% of the state's total GHG emissions. One new refinery hydrogen plant can emit over one million tons of CO₂ annually.

Actions needed: California should (i) require refineries to conduct a comprehensive energy audit, report on the results, and establish a reduction schedule; (ii) require refineries to proactively replace old boilers, heaters, and other inefficient equipment, some of which were built over 50 years ago; (iii) require refineries to replace a portion of grid energy used each year with alternative energy sources; and (iv) evaluate and implement U.S. EPA recommendations for reducing greenhouse gas emissions in the refining industry.

C) Refineries are the largest industrial emitters of toxic air contaminants in California. The U.S. EPA Toxics Release Inventory (TRI) shows that refineries dominate by far the top 15 largest sources of toxic air emissions in both Northern and Southern California.

Refinery contaminants are dispersed regionally, causing population-wide health effects and reducing quality of life; residents of communities such as Richmond and surrounding cities are exposed to toxic air contaminants at high levels and suffer higher rates of asthma, cancer and other diseases, relative to rates in California as a whole.

Actions needed: California should require refineries to rapidly and continually reduce emissions through the use of Best Available Control Technologies (BACT) or Best Available Retrofit Control Technologies (BARCT), as defined under the Federal Clean Air Act.

Conclusion

In the 6 month period between August last year and January of this year, the California refinery industry reported 41 separate upset events, including fires, spills, mechanical failures and other problems, some of which endangered workers and surrounding communities. The industry is vitally important in California and should be operated efficiently and safely, with the best possible systems in place to protect worker, community and environmental health. That will require concerted action by the Legislature in the areas of monitoring and emergency response, prevention, and sustainability.

Thank you again for the opportunity to present these findings today, and I would be happy to take any questions.

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