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Government Has an Essential Role in Oil Refinery Safety and the Environment

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As a chemical engineer who worked for 37 years in the oil industry, I believe we need stronger federal regulation of hazardous air pollutants to insure the health and safety of workers and citizens in the vicinity of all U.S. refining facilities. While some refiners have instituted best practices, many are not yet creating an environmental-awareness culture, and they need the prodding of the new hazardous air-pollution standards that were proposed by the U.S. Environmental Protection Agency in May.

The oil industry has pushed back, claiming that the standards are unnecessary and too expensive, even though EPA analysts have determined that the costs of petroleum products would not rise if the proposed standards were finalized as they are.

EPA scientists have determined that more than one million Americans who live near the 143 operating refineries in the U.S. would have a significantly lower risk of cancer from the air pollution coming from refineries -- so the health benefits of the proposed rule are clear and necessary.

Following a career in the refining industry, including 19 years with Exxon Corporation, I am currently on the Board of Directors of Air Alliance Houston, an organization working to improve air quality in the Houston region. Based on my experience, I would like to draw some parallels between the current EPA initiatives to reduce hazardous air pollutants and earlier government efforts by the Occupational Safety and Health Administration and other agencies to reduce personal injuries in refineries.

In 2011, according to the U.S. Bureau of Labor Statistics, the oil refining industry had an injury and illness rate of 1.1 per 100 full-time workers versus 4.4 per 100 for the U.S. manufacturing sector overall.

I think most oil companies realized that safety regulations helped the bottom line through reducing lost time due to injuries and the costs of medical care while improving employee morale. The benefits more than compensated for the costs and efforts to implement safe working practices.

This changed culture around implementing strong safety measures, which led to declining rates of injury over decades, came about through a combination of strong government regulations coupled with industry management commitment.

I am convinced that the exemplary safety results in the refining industry today would never have been achieved if the management of the majority of the refining companies had not embraced safety as a part of their culture. These leading companies have integrated safe working practices and procedures into every facet of plant design, construction, operations and maintenance, with thorough and ongoing training for all employees and contractors. Most of the refiners with leading safety records make safe work habits one of the criteria used in employee performance evaluations. As a result, every employee knows that his or her safety performance will impact pay and advancement opportunities.

When dealing with broad issues like safety and pollution, it is important to recognize the wide variation in results achieved by different refiners. Some have achieved remarkable pace-setting results in both safety and air quality. But, admittedly, not all refiners are equally committed to safety, and that's why government regulations with strong enforcement are necessary. And, unfortunately, the attention paid to air pollution by refineries has lagged behind safety.

In general, refiners are still in the mode of resisting new government regulatory initiatives and are not acknowledging that reducing pollution is not only good for the environment, but also has an economic return. It is not sufficient to just address current operations in order to establish effective emissions reduction programs. Improvements must begin at the plant design stage in order to eliminate or minimize flaring by integrating flare gas recovery systems, design for smooth start-up and shutdown of process units without flaring, and designing coking units with

completely enclosed coke handling systems, to mention a few important areas. Procedural changes and new technology must also extend to plant maintenance. For example, improved monitoring and repair of the seals on floating-roof tanks is essential, as is the use of modern infrared sensors for detecting leaks at valves, pumps and flanges.

Therefore, I strongly endorse the proposed new EPA rules and encourage refiners to stay ahead of the regulatory curve by changing their work culture to get their employees trained and committed to maintaining a healthy environment for everyone.

Once these new environmental regulations are in place, I believe that most refiners will gradually establish their own programs to train and enforce environmental awareness and practices among their employees and contractors, similar to the highly successful in-house safety programs. It is this in-house cultural change that will ultimately result in exemplary performance and put the refining industry in the lead on the environment, just as has occurred in safety.

This blog post is part of a series produced by The Huffington Post and Earthjustice on air pollution from oil refineries. The series coincides with the beginning of the 60-day comment period following the EPA's new proposed legislation to curb such pollution.