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Oil industry funding study to contradict cancer claims / Research will analyze effects of benzene on workers in China

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Concerned that research linking benzene to cancer could lead to expensive and strict controls on the petroleum industry, five major oil companies are funding a multimillion-dollar study to counter the findings, documents obtained by the Houston Chronicle show.

The study, launched in 2001 in Shanghai, China, with as much as \$27 million from BP, ChevronTexaco, ConocoPhillips, Exxon Mobil and Shell Chemical, will analyze benzene's effects on the blood and bone marrow, and its ability to cause cancer in workers.

The research is expected to be completed in 2007, according to the American Petroleum Institute, which is overseeing the funding group.

But in depositions, proposals to oil companies and other documents collected by a Houston law firm in unrelated lawsuits and provided to the Chronicle, the results of the study already have been predicted.

And while the actual data may be years away, the conclusions are expected to contradict earlier research linking low- and mid-levels of benzene to cancers and other blood diseases - findings that could spawn tighter regulations.

"The proposed research is an investigation ... to respond to allegations from a nationwide study of benzene exposed workers," read a proposal sent to Craig Parker, manager of toxicology and product safety for Marathon Oil Corp.

For years, benzene has been known as a human carcinogen associated with leukemia, though there is disagreement about what level and what length of time a worker has to be exposed to contract cancer. In 1997, new research conducted by the National Cancer Institute in Shanghai provided evidence that workers exposed to average levels of benzene had a risk of developing non-Hodgkin's lymphoma more than four times greater than the general population.

Soon after, industry experts started visiting China to map out a follow-up study.

Financial consequences

Oil companies have a vested interest in such results because of the financial consequences. If lower levels of benzene are shown to cause disease, the concentration allowed in the workplace, in gasoline, or in communities could be lowered.

Among the concerns identified in the consortium's pitch for funding in the late 1990s were increased litigation, more stringent cleanup standards and the reformulation of gasoline. Benzene is a natural component of gasoline.

"Every time somebody regulates benzene, it has an impact on gasoline production," said Gerhard Raabe, a toxicologist who, as an employee of Mobil Oil and chair of a petroleum institute committee, visited various companies seeking funding in the late 1990s. His comments were part of a deposition taken by attorney Lance Lubel in 2004.

"There is a whole bunch of business reasons (for) getting a good scientific answer as to what ... are the risks," he said.

The proposal received by Marathon Oil stated that the benzene research was expected to provide scientific support for the lack of a leukemia risk to the general population, evidence that current occupational exposure limits do not create a significant risk to workers and proof that non-Hodgkin's lymphoma could not be caused by benzene exposure.

Otto Wong, one of the investigators in the industry-funded Shanghai study, said he had no preconceived ideas of the study's results. "That's not my wording," said Wong, who works for Applied Health Sciences, Inc., in San Mateo, Calif. His firm, along with Fudan University in Shanghai and the University of Colorado Health Sciences Center, is in charge of the research.

"The obvious reason (we are doing the study) is to learn more about benzene and other chemicals in the development of leukemia and other diseases," he said.

However, Wong said he had opinions about what he might find based on previous research.

"I do know benzene and non-Hodgkin's lymphoma quite well, and there is one study that says there is an association, and all other studies say no," Wong said. "Based on what we do know, we do have some opinion, we have some idea of what the situation will be, but no one can predict how a particular study will turn out."

According to a draft copy of the agreement with the companies funding the research, the data will be shared with an oversight committee, and that group can decide to terminate the study if two-thirds of the participating companies agree.

Parts of study questioned

Jonathan Ward, a toxicologist at the University of Texas Medical Branch at Galveston who studies the effects of another industrial chemical, 1,3-butadiene, on workers' genes, said some parts of the study appeared scientifically inappropriate.

It seems to me that "they are selling this study to whoever is going to pay for it, and are promising a result in advance," Ward said.

At least one company - Dow Chemical Co. - decided not to contribute to the study.

In a deposition taken in July 2004, James J. Collins, the head of epidemiology for the company, said he told Dow management that the study's design could generate a statistical bias in terms of risk.

Collins, however, said he was unsure whether his viewpoints influenced the company's decision.

Officials with Dow could not be reached for comment Thursday night. A spokesman for Exxon Mobil said he could not comment on a document produced by another company that he had not seen.

New data being generated

The American Petroleum Institute overseeing the industrial consortium released the following statement Thursday: "The investigators conducting the study have full control over the study design, research, and all interpretations and conclusions that may be drawn from the data when the study is completed."

In the meantime, science continues to generate more information about the effects of benzene. Just last year, a paper published in Science showed for the first time that benzene had toxic effects on blood cells at 1 part per million - the level workers in the United States are allowed to be exposed to over an eight-hour workday. Workers in China are exposed to much higher levels.

"We need and would like to see other studies to see if we get the same results," said Luoping Zhang, one of the paper's authors and a public health specialist at the University of California at Berkeley. "We have no objection if industry has money to support another study, we want to see if they can reproduce the same results."