

FOR RELEASE: 3:00 PM, April 12, 2012
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STUDY FINDS FEW HEALTH EFFECTS FROM NEW TECHNOLOGY DIESEL ENGINES:

(Boston, April 12, 2012) The first results of the most comprehensive study ever undertaken of the health effects of exposure to new technology diesel engines has found no evidence of gene-damaging effects in the animals studied, and only a few mild effects on the lungs, according to a report issued today by the Health Effects Institute (HEI)¹. The study – the Advanced Collaborative Engine Study (ACES) – is exposing rats and mice for 16 hours a day to emissions from a heavy duty diesel engine meeting stringent 2007 US EPA standards that reduce emissions of fine particles and other pollutants by over 90% from levels emitted by older engines.

The study found that exposures lasting one, three, and in some cases up to twelve months had effects on only a few of the many health markers tested; exposures will continue for the life time of the rats. The few effects that were reported for the rats were mild hyperplasia (cell proliferation) in the lungs and slightly reduced lung function, and were most consistent with exposure to nitrogen oxides in the engine exhaust, which are being further reduced under 2010 US EPA standards now in effect.

These results are expected to play an important role in upcoming risk reviews by international and US agencies of older and new technology diesel engines, including a review of the carcinogenicity of diesel exhaust in June, 2012 by the International Agency for Research on Cancer (IARC) in Lyon, France. “We will be communicating these results to IARC, the US National Toxicology Program, and US EPA in order to ensure that the significant improvements in emissions and effects for these new diesel technologies are considered and compared with the data on older engines when those agencies reach their conclusions,” said Dan Greenbaum, President of HEI.

The study - *HEI Research Report 166: Advanced Collaborative Emissions Study (ACES) Subchronic Exposure Results: Biologic Responses in Rats and Mice and Assessment of Genotoxicity* - was conducted by Drs. Jacob D. McDonald of the Lovelace Respiratory Research Institute, Albuquerque, New

¹ The Health Effects Institute is an independent, non-profit research institute funded jointly by the US Environmental Protection Agency and industry to provide credible, high quality science on air pollution and health for air quality decisions. HEI sponsors do not participate in the selection, oversight or review of HEI science, and HEI's reports do not necessarily represent their views.

Mexico, Jeffrey C. Bemis of Litron Laboratories, Rochester, New York, and Lance M. Hallberg of the University of Texas Medical Branch, Galveston, and their colleagues. Their work was overseen by independent experts on the HEI ACES Oversight Committee, and its comprehensive description of all findings was then subjected to intensive peer review by a separate expert ACES Review Panel who had had no part in the conduct of the study. In their Commentary on the study the Review Panel concluded:

“Overall, these results indicate that rats exposed to one of three levels of diesel exhaust from a 2007-compliant engine for up to 12 months, for 16 hours per day, 5 days a week, with use of a strenuous operating cycle that was more realistic than cycles used in previous studies, showed few biologic effects related to diesel exhaust exposure.”

ACES is a comprehensive effort, supported by a wide range of public and private entities² and conducted under the independent oversight of HEI and the Coordinating Research Council (an Atlanta-based non-profit specializing in emissions characterization). The overall goals of ACES are to test the emissions of new technology diesel engines to determine not only whether they are achieving the expected substantial reductions in emissions and health effects, but also whether the new control technologies (that include particle filters and ultra-low sulfur diesel fuel) are resulting in unintended increases in some components of the emissions. An earlier ACES report (available at www.crao.org) found substantial reductions in particulate matter and other pollutants in the emissions from 2007 engines. Emissions characterization is also underway on 2010-compliant engines, which are expected to substantially further reduce levels of nitrogen oxides.

In the health studies, rats will continue to be exposed for their lifetime. In 2013, these investigators, along with others investigating potential vascular effects, will submit a comprehensive final report for peer review, providing the first systematic look at the effects of long-term exposure to diesel exhaust emitted by these new technology diesel engines. Full copies of today’s Report and the HEI Commentary are available at www.healtheffects.org. Please contact Dan Greenbaum or Bob O’Keefe at 617 488 2311 for any further questions.

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² The US Department of Energy, US Environmental Protection Agency, California Air Resources Board, Engine Manufacturers Association, American Petroleum Institute, and manufacturers of emission control equipment