

Federal Advisory Committee Act
Clean Air Act Advisory Committee
Mobile Sources Technical Review Subcommittee

Co-Chairs: Michael Walsh and Robert Sawyer Designated Federal Official : Gregory Green

Minutes of the Subcommittee's Meeting on February 13, 2002

Alexandria, Virginia

DRAFT

Introduction and Opening Remarks

Michael Walsh (consultant) called the meeting to order at 9:00 a.m. and welcomed attendees. Packets were distributed to members and observers that included the meeting's agenda, handouts of presentations, a welcome message and background information for observers, the meeting evaluation form, information on the members of the Subcommittee, an MSTRS Workgroup organization chart, reports from the Workgroups, the MSTRS newsletter, and a meeting calendar.

Margo Oge (EPA) gave opening remarks on the importance of the work being done in the Subcommittee. She discussed EPA's priorities for testing on-road and non-road diesel engines, as well as developing and marketing in-use assessment tools. She also summarized non-regulatory, volunteer programs for these sources, such as the retrofit program, the commuter choice program, and "green" vehicles, which all focus on reducing criteria pollutants and improving fuel economy.

Mr. Walsh reviewed business items for the meeting. The minutes from the October 24, 2001 meeting will be accepted pending corrections to the attendance list. Bob Sawyer (University of California) emphasized the importance of in-use testing and the increasing need to develop in-use assessment tools.

Presentations on In-Use Testing

- Ms. Khesha Jennings (EPA) gave the presentation "In-Use Heavy-Duty Diesel Testing Program." She discussed the FY01 program purpose, testing process, vehicle procurement methods, and program results. She emphasized the cost-effectiveness of on-road testing compared with lab dynamometer tests. In 2002, the program will expand to include heavy-duty non-road engines. She also explained that the program uses ROVER which does not yet have the capability to measure particulate matter, but it can measure smoke.

- Mr. Dennis Johnson (EPA) gave the presentation "ROVER Been There, Recorded That...A Description of the Real-time On-Road Vehicle Emissions Reporter." He presented the history of the development of ROVER, and highlighted the advantages of real-time display. He described the range of vehicles and engines tested with ROVER since 1995, and that EPA and others have shown ROVER correlates with gasoline and diesel, chassis and engine FTP testing in the laboratory. He also explained

that while ROVER currently may not have the resolution to detect ultra-low emissions, it can help pinpoint the occurrences and causes of high emissions in low-emission vehicles in the laboratory and in real-world operation. ROVER has not been used with remote sensing.

- Mr. Gene Tierney (EPA) and Mr. Carl Fulper (EPA) gave the presentation “Portable Emissions Measurement Strategy.” They discussed the advantages of in-use testing and obtaining real-time data, as opposed to relying exclusively on laboratory and historical data. They presented the Simple Portable Onboard Test (SPOT) that will be used on non-road equipment, and discussed progress in developing protocols for testing particulate matter. There is currently very little non-road data, but this equipment has more than doubled the data in a short amount of time. The flow measurement device under development for SPOT is self-cleansing because of increased particulate matter emissions. Evaporative emissions are not currently included in the portable measurement strategy, but researchers would be interested in a cost-effective way to incorporate them in the future.

A discussion ensued about incorporating real-time data into the New Generation Model (NGM) that may replace MOBILE6 in the future. Current models are configured so that users can obtain data under specific conditions. The NGM will also provide this on three different scales using a modal approach and emissions estimators. Comments were made that driver variability and fuel sampling are important aspects in the new emissions measurement strategy.

- Dr. Mridul Gautam (WVU) gave the presentation “In-Use, On-Road Emissions Testing of Heavy-Duty Diesel Vehicles: Challenges and Opportunities.” He summarized the purpose of in-use measurements, the available tools, data needs and challenges, and current research. Dr. Gautam discussed WVU’s Mobile Emissions Measurement System (MEMS) and also talked about the development of a new generation of compact gaseous emissions measurement sensors and exhaust flowrate measurement systems. He presented the setup and effectiveness of MEMS, and its implementation on heavy-duty on-highway vehicles, non-road equipment, and stationary and portable engines. He highlighted errors in ECU torque (and “percent load”) broadcast in on-highway heavy-duty vehicles. He also presented information on a state-of-the-art in-use, on-board Real-time Particulate Mass Monitor, RPM 100 that was recently used, in tandem with the MEMS, for collecting PM mass emissions from D11 track-type dozer operating at a strip mine. Group members discussed errors associated with using the currently available technology for in-use on-board emissions measurement.

- Mr. Karl Oestergaard (Horiba) gave the presentation “The Horiba Approach to On Board Measurements.” He discussed past experiences with on-board systems, explained the configuration of the 2000 system, and reviewed some of the data collected. There are no plans to report NO and NO₂, nor is the system equipped to report particulate matter. The current demand has been for CO₂ and NO_x. Group members discussed proportional sampling alternatives to measuring PM and the availability of measuring tools.

- Mr. Dan Harrison (EPA) gave the presentation “EPA’s Light-Duty In-Use Compliance Program.” He talked about the recall rate of vehicles, goals for the compliance program, the process for light-duty in-use testing, and the advantage of in-use testing to reduce recall rates. Recalls can be found on EPA’s website.
- Mr. Tom Cackette (CARB) gave the presentation “In-Use Testing Programs in California.” He described the Board’s testing capabilities and the annual testing volume for light, medium, and heavy-duty vehicles. CARB also has testing capability for recreational marine engines, and is installing a utility engine testing facility. In-use compliance testing is targeted at engine families with suspected emission problems. These include higher mileage light and medium duty vehicles, and new small engines. Testing of heavy duty engines focuses on NTE compliance and verifying after-treatment devices. Roadside smoke testing of heavy diesels, and Smog Check, focus on assuring proper in-use maintenance.
- Mr. Rob Wilson (Sensors) gave the presentation “On-Road, In-Use Emission Test Systems.” He described the benefits of on-vehicle testing, and summarized the three-year Ford-Sensors partnership. Mr. Wilson also presented EPA’s 2001 Sensors Emission Technology gasoline and diesel (SEMTECH-G and SEMTECH-D) study. He concluded with a description of new technologies available for on-vehicle testing.
- Ms. Susan Field (Toyota) gave the presentation “New Generation Model Status Report” to update the Subcommittee on the Modeling Working Group. She briefly described the New Generation Model (NGM) and the EPA’s timeframe for implementing it. She also explained the results of a survey that had been sent out to the Workgroup members about the NGM, and discussed concerns the workgroup had about implementing the model. Discussion ensued about how a data-driven model will project future emissions; Mr. Tierney explained that the methods for projecting emissions are the same in both the NGM and other models. He also said that if NGM was not ready within the projected timeline, MOBILE6 would be the default model. However, MOBILE6 would not be updated, and all resources would be used to complete the NGM.

Wrap-Up

The next meeting of the MSTRS is scheduled for June 12, 2002 in Alexandria, VA. The meeting adjourned at 3:00 p.m.

Attachments:

List of attendees (members, alternates, speakers, and staff)

List of observers

Attendees (Members, Alternates, Speakers, and Staff)

Name	Organization
Ron Benton	Shell Oil Products US
Bruce Bertelsen	MECA
Kathy Boyer	EC/R, Inc.
Kelly Brown	Ford Motor Company
Robert Brown	Ford Motor Company
John Cabaniss	AIAM
Tom Cackette	CARB
Ann Deering	EC/R, Inc.
John Elston	New Jersey
Susan Field	Toyota
Carl Fulper	EPA
Jerry Gallagher	J. Gallagher Associates
Dick Gibbs	New York
Gregory Green	EPA
Mridal Gautam	West Virginia University
Cheryl Hogan	EPA
Khesha Jennings	EPA
John Johnson	Michigan Tech University
Tim Johnson	Corning, Inc.
Rich Kassel	NRDC
Don Keski-Hyynila	DDC
Ted Kotsakis	Oregon
Reg Modlin	DaimlerChrysler

Brian Morton	EC/R, Inc.
Karl Oestergaard	Horiba Instruments
Margo Oge	EPA
Paul Rasmussen	EPA
Mike Rodgers	Georgia Tech
Bob Sawyer	University of California
Bob Schaefer	BP Global Fuels Technology
Gene Tierney	EPA
Michael Walsh	Consultant

Observers

Name	Organization
Cass Andary	Alliance
Robert Babih	GM
Rick Barrett	Colorado
Jim Blubaugh	EPA
Tom Darlington	AIR, Inc.
Tim DeFries	Eastern Research Group
Chuck Freed	EPA
Charlie Gorman	ETI
Douglas Greenhawk	NADA
John Guy	EPA
Kevin Hallstrom	Engelhard
Dan Harrison	EPA
Joe Iannotti	New York
Ross Jenkins	Parsons

Dennis Johnson	EPA
Glen Kedzie	ATA
Korby Koch	Caterpillar
Kevin Kokrda	EMA
David Lax	API
Raj Mago	International Trucking
Bob Maxwell	Consultant
Vince Mow	Waekon
Vincent Porcaro	Parsons
Andrew Reading	Sensors, Inc.
Keisuke Sano	Toyota
Allen Schaeffer	Diesel Technology Forum
Bob Shaw	DaimlerChrysler
Warren Slodowske	International Trucking
Tom Snyder	ANL
Suanne Thomas	VW
Bill Trestrail	International Trucking
Rob Wilson	Sensors, Inc.
Andy Vaichekauskas	Mitsubishi
