

Final Report
DOE Grant No. DE-FG02-06ER64170
Act as NARSTO Management Coordinator and Conduct Research
In Support of NARSTO Activities
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Period Covered by this Report: September 1, 2009 to June 30, 2011

Introduction and Background

This grant funded the position of NARSTO Management Coordinator. NARSTO was a public-private partnership with members from government, utilities, industry, and academe in Canada, the United States and Mexico. NARSTO planned and coordinated independently sponsored projects and tasks designed to identify and resolve policy-relevant science questions related to

- a) Anthropogenic and biogenic air-pollution sources and emissions,
- b) The complex physical and chemical processes affecting the accumulation of pollutants in the troposphere (including greenhouse gases and aerosols),
- c) The potential of certain pollutants to react and generate oxidants and fine particles in the troposphere,
- d) The development, intercomparison, and application of atmospheric models,
- e) The development of monitoring studies and methodologies needed to assess emission control effectiveness for selected greenhouse gases and aerosols, air pollutants and their precursors, and
- f) The attainment of the national air-quality and climate-stabilization goals and standards established by each member Nation

DOE's funding of NARSTO ceased December 31, 2010 with the expiration of a no-cost extension of grant DE-FG02-06ER64170; thus, the NARSTO Executive Steering committee voted in July 2010 to terminate NARSTO effective that date. However, certain activities continued through June 2011. These activities were supported with funds contributed by various NARSTO members.

In meeting NARSTO's goals, the Management Coordinator engaged in a number of continuing and ad hoc activities. Final disposition of these activities is summarized below:

CONTINUING ACTIVITIES

The NARSTO Website Through December 2010, NARSTO maintained a website which contained current information on present and past NARSTO projects as well as reference materials that supported various NARSTO reports. The website also provided

password-protected access to draft NARSTO documents. In order to maintain long-term access to NARSTO research and reports, the NARSTO website was transferred to Oak Ridge National Laboratory. This transfer was completed June 30, 2011. In addition, all physical documents related to NARSTO were shipped to ORNL for archiving.

The NARSTO Newsletter Production of the NARSTO Newsletter ceased with the 2009 Winter/Spring issue. Past issues remain available at www.narsto.org.

Quality System and Data Management The NARSTO data archive and the Quality Systems Science Center (QSSC) were located at Oak Ridge National Laboratory and were separately funded by the Department of Energy. This activity ended with NARSTO's termination; however, all data remain available

Annual and Specialty Meetings The final meeting of the NARSTO Executive Assembly was held May 5 and 6, 2010 in Toronto, Ontario, Canada. Materials from the final meeting can be found on the NARSTO website: www.narsto.org.

Publications and Planning Documents NARSTO's final technical assessment, *Technical Challenges of Multipollutant Air Quality Management*, was published by Springer in 2010. See **Publications** below.

AD HOC ACTIVITIES

In addition to these enumerated responsibilities and on-going activities, the Management Coordinator engaged in a number of ad hoc activities relating to NARSTO's mission:

1. Complete the NARSTO Multi-Pollutant Accountability Assessment. As noted above, the assessment was published in 2010.
2. Improve Emission Inventories in the Three NARSTO Counties. This activity was completed in November 2008, and was summarized in a previous progress report.
3. Strengthen Collaboration between NARSTO and the Health Effects Community. Activity terminated.
4. Establish Air Quality – Climate Interactions as a NARSTO Initiative. NARSTO's final assessment included a discussion of the effects of air pollution on climate and vice versa. See **Publications** below.
5. Achieve increased engagement with Canada and Mexico. Activity terminated.
6. Increase the Involvement of Industrial Members in NARSTO Activities. Activity terminated.
7. Conduct Research in support of NARSTO's mission and objectives. This activity was completed with publication of NARSTO's final technical assessment.

8. Conduct a Review of the NARSTO Program. Activity completed. The final report is available on the NARSTO website: www.narsto.org.

Publications

Pennell, W.T. and G.M Hidy: 2010, "A Summary of the 40th Annual A&WMA Critical Review: Multi Pollutant Air Quality Management", *EM*, June, pp. 52-55.

Hidy, G.M. and W.T. Pennell: 2010, "Multipollutant Air Quality Management", *J. Air & Waste Manage. Assoc.*, **60**, pp. 645-674.

Pennell, W.T.: 2010, "Technical Challenges of Multipollutant Air Quality Management: A Summary for Policymakers", in *Technical Challenges of Multipollutant Air Quality Management*, Hidy, G.M., J.R. Brook, K.L. Demerjian, L.T. Molina, W.T. Pennell, and R.D. Scheffe, Eds, Springer, Dordrecht.

Jacob, D.J., D.J. Mauzerall, and W.T. Pennell: 2010, "Global Change and Air Quality", in *Technical Challenges of Multipollutant Air Quality Management*, Hidy, G.M., J.R. Brook, K.L. Demerjian, L.T. Molina, W.T. Pennell, and R.D. Scheffe, Eds, Springer, Dordrecht.

Brook, J.R., M.D. Moran, W. Pennell, and L. Craig: 2010, "Elements of Air Quality Management: Atmospheric Science Tools for Developing Effective Policy", in *Air Pollution: Health and Environmental Impacts*, B. Gurjar, L. Molina, and C.S.P. Ojha, Eds, CRC Press, Boca Raton, FL.

Presentations

Hidy, G.M and W.T. Pennell: 2010 Critical Review, Multipollutant Air Quality Management, 103rd Annual Conference of the Air and Waste Management Association, June 21-25, 2010, Calgary, Alberta, Canada.