

**Title: Environmental Stewardship: Expanding the Envelope of the BNL EMS through Voluntary Participation** - Robert J Lee, Vincent Lodestro, Deborah Bauer, Steve Ferrone, Peter D Pohlot, John Selva, Keith C. Klaus, Melvin J. VanEssendelft, John H. Taylor, Edward Murphy, George A. Goode, Anna Bou, Mark Davis, Leo Palumbo, Joel Scott, Walter H. Shaffer, Brian F. Briscoe

**Abstract:**

In 2001, Brookhaven National Laboratory's (BNL's) Environmental Management System (EMS) was the first Office of Science Laboratory to achieve site-wide third party certification to the ISO 14001 standard. BNL continues to maintain its EMS and in 2005 was certified to the ISO 14001 2004 standard. BNL continuously raises the EMS bar and in 2004 was awarded membership in the EPA National Performance Track Program (PTrack) and the EPA National Partnership for Environmental Priorities (NPEP). Success in achieving commitments to these programs is driven through development of objective and targets, which are tracked through the EMS. In 2006 BNL was recognized for its success under the NPEP program and was awarded an NPEP Achievement Award in October 2006. In 2006 BNL had also surpassed three of its four PTrack Commitments, which will be documented in its annual PTrack report to EPA in April 2007. Through its voluntary participation in the EPA PTrack and NPEP programs BNL has recognized a 90% reduction in onsite PCB inventory, a 40% reduction in mercury, > 35 tons of CFC-11 equivalent have been removed from service, 42 acres of property restored/recovered for natural forest, and a 34% reduction in radioactive emissions from the production of radioisotopes.

Membership in these programs has also afforded BNL many opportunities to showcase its EMS experiences and successes in Pollution Prevention, Waste Minimization, Emission Reductions, and many other environmental successes. In 2005 BNL was approached by EPA Region 6 for assistance in training analytical laboratories in understanding aspects and impacts and for developing targets and objectives. BNL has also presented its EMS success to the NYS Business Council (2004), has participated in EPA Region 2 PTrack Recruitment Workshops (2006), and presented at the Region 2 Deconstruction and Beneficial Use Conference (2006).

**Actual Nomination Description:**

BNL has been a leader among DOE Laboratories in the development and implementation of a certified Environmental Management System. In 1999, BNL's RHIC Project was the first program to achieve registration, followed by eight facilities in 2000, and then lab-wide registration in 2001. Annual registration audits find BNL's EMS to be robust and continuously improving. Targets and objectives, developed annually, reflect BNL's focus for improvement for the year and are aligned with DOE expectations, as well as commitments to other BNL stakeholders. BNL has maintained third-party registration to the ISO standard continuously and the BNL EMS model has been used by many other DOE facilities as a template during development of their own EMS. BNL was the first Office of Science Laboratory to attain third party registration to the ISO 14001 standard.

In furtherance of improvements through its EMS and commitments to environmental stewardship, BNL has participated in or gained membership to several voluntary environmental programs including the EPA National Performance Track Program, the National Partnership for Environmental Priorities, the Federal Electronics Reuse and Recycling Program, the EPA Mercury Challenge, and the upcoming Federal Electronics Challenge. From 2003 through 2006 BNL has recognized significant benefits through participation in these programs. These benefits include:

- 40% reduction in the site-wide inventory of mercury
- 90% (+) reduction in the onsite inventory of PCBs
- 35 ton reduction in Class I Ozone Depleting Substances
- 34% reduction in atmospheric emission of radionuclides
- Recovery of 42 acres for restoration as viable forest
- 101,400 pounds of electronics recycled (during 2006).

Through these accomplishments BNL boasts a very active awards program. Awards from 2004 through 2006 include:

**2006:**

- National Partnership for Environmental Priorities - Achievement Award
- H2O2 Paint Stripping (DOE P2 Award)
- Biobased Hydraulic Fluid (DOE P2 Award)
- DOE Electronics Recycling

**2005:**

- DOE Office of Science Notable Practice for Fleet Managers Conference

**2004:**

- EPA Environmental Quality Award – Upton Ecological Preserve
- DOE Office of Science Best in Class Award, DOE Pollution Prevention Award and White House Closing the Circle Award - for contributed efforts to Battelle Memorial Institute for their leadership and management in the development and integration of Environmental Management Systems into the operational and business systems of BNL.
- DOE SC Pollution Prevention Accomplishment Award - Mixed Waste Elimination through Process Modification
- Long Island Pine Barrens Environmental Stewardship Award
- Evelyn Liblit Environmental Stewardship Award

BNL has also gained notable recognition at both the Federal and State levels as being an example for other organizations and to help foster the development of additional voluntary programs. BNL is routinely requested to share its experiences with its EMS and its successes in participation in voluntary initiatives and Pollution Prevention programs. These include:

Presentation to the NYS Business Council on BNL's strive towards Environmental Excellence

EPA Region 6 Workshop: EMS development in Analytical Laboratories: Development of Aspects and Impacts

EPA Region 2 Workshop: Deconstruction and Beneficial Use

EPA Region 2 Performance Track Recruitment Workshop

In recognition of its strong EMS and membership in PTrack in late 2005, BNL was requested by the NYS Department of Environmental Conservation to participate in the development of the NYS Environmental Leaders program, the NYS corollary to the EPA PTrack program. This program will be accessible to organizations with proven compliance programs, a strong EMS, and continuing commitments towards environmental stewardship. In addition BNL routinely presents its EMS status and successes at local Community Advisory Council meetings, Brookhaven Executive Round-Table meetings (an organization comprised DOE and local State and County regulators), and DOE-wide routine meetings, e.g., Annual SER meetings.