



Fiscal Year 2009 Y-12 Site
Profile for DOE Pollution Prevention
Tracking and Reporting

**Y-12
NATIONAL
SECURITY
COMPLEX**

November 30, 2009

Compiled By:
Y-12 Waste Management

Prepared by:
Babcock & Wilcox Technical Services Y-12, LLC
Management & Operating Contractor
For the
Y-12 National Security Complex
Under contract DE-AC05-00OR22800
With the
U.S. Department of Energy
National Nuclear Security Administration

MANAGED BY
B&W Y-12, LLC
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

UCN-13672 (1-08)

This document has been reviewed by a Y-12 DC/
UCNI-RO and has been determined to be
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Name: [Signature] Date: 11/10/09

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Site Profile Data Report (by site) for 2009 Year

Displaying Sites: Y-12 National Security Complex

Y-12 National Security Complex for 2009

Last Changed By: Jan Gilbert
Last Date Updated: 11/30/2009

Site Information

Site Name: Y-12 National Security Complex
Lead PSO: NA
Other PSOs: EM

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2009 Pollution Prevention Performance Measures

1. Have objectives and targets for achieving DOE's pollution prevention and sustainable environmental stewardship goals (O 450.1, Chg2) been established in the site EMS?

- Waste Prevention: Yes
- Toxic Chemical Use and Release Reduction: Yes
- Environmentally Preferable Purchasing: Yes
- Electronics Stewardship: Yes
- Post-Consumer Material Recycling: Yes

Comments:

Y-12 has established and maintains, at relevant functions and levels within the organization, documented environmental objectives, targets (goals) and action plans. Goals and commitments are established annually and agreed to between the Y-12 National Nuclear Security Administration (NNSA) Site Office (YSO) and B&W Y-12 and are consistent with mission, budget guidance, Environment, Safety and Health (ES&H) work scope, site incentive plans, and continuous improvement. A total of 15 Fiscal Year (FY) 2009 goals were achieved in support of our five overall objectives: (1) Clean Air: Minimize emissions of air pollutants including toxics, ozone-forming, and ozone-depleting chemicals. FY 2009 Targets Achieved - 3; (2) Energy Efficiency / Conservation: Improve energy efficiency through modernization, energy efficient equipment, and sustainable design. FY 2009 Targets Achieved - 5; (3) Hazardous Materials Management/Reduction: Minimize the use, storage, and handling of hazardous and unneeded materials, chemicals, and equipment. FY 2009 Targets Achieved - 2; (4) Land/Water/Natural Resource Conservation: Be responsible stewards of our land, water, natural and cultural resources for the benefit of present and future generations of people, plants, and animals. FY 2009 Targets Achieved - 3; and (5) Reduce/Reuse/Recycle – Buy Green: Reduce waste through source reduction, product substitution, recycling materials to the maximum extent feasible and purchasing products with recycled content and bio-based materials. FY 2009 Targets Achieved - 2.

2. Have the resources needed to implement site EMS objectives and targets for achieving DOE's pollution prevention and sustainable environmental stewardship goals been included in the site budgetary process that are not alternatively funded through Energy Savings Performance Contracts?

Yes

Comments:

Y-12 management provides resources essential to implement and control the Environmental Management System (EMS). These essential resources (human, special skills, technology, and financial) are provided in accordance with the following established process. Site-level mechanisms are used to plan, estimate, and budget for the required resources based on NNSA mission requirements. From these mechanisms, facility-level work requirements are established. Each fiscal year, budget targets are established and planning is initiated in accordance with Y30-600, Work Plan Preparation and Administration. The Executive Steering Group (i.e., top management) functions in an oversight role, assuring that Integrated Safety Management System (ISMS) principles are incorporated in business plans and budgets, that budget priorities are appropriately balanced with regard to mission-related and ISMS priorities, and that ISMS is properly planned into work activities. In accordance with Procedure Y30-600, Work Plan Preparation and Administration, detailed task estimates are developed. This process incorporates the agreed upon production and ES&H priorities for Y-12 and NNSA. The process also provides site-level resources for the environmental action plans, environmental programs (Clean Air Compliance, Water Compliance, Solid Waste Compliance, etc.), facility operations, and projects/maintenance activities that are necessary to ensure protection of the environment and comply with the requirements of federal and state environmental laws, regulations, DOE orders, agreements, and other requirements. B&W has identified and designated \$1.0 million in FY 2009 for B&W support for the activities funded through the Energy Savings Performance Contract. From Fiscal Year (FY) 2003 through FY 2007, the Y-12 Pollution Prevention Program was funded through Defense Programs under the Common Site Support (CSS) funding mechanism. Beginning in FY 2008, the CSS funding was reduced to a funding level below that which would allow the Y-12 Pollution Prevention Program to maintain compliance with DOE Orders and environmental regulations. Therefore, it was determined that the Y-12 Pollution Prevention Program would be funded by a legacy

pool (i.e., a tax on all Y-12 organizations) which was newly established during FY 2008. This legacy funding option provided for a synergistic approach to be able to fund various other Programs that naturally fell under the newly established Y-12 Sustainability and Stewardship Program. In addition to the Y-12 Pollution Prevention Program, some of the other programs funded by this newly established legacy pool include the Y-12 PrYde Program, the Clean Sweep Program, the Unneeded Materials and Chemicals (UMC) Program, and the Recycling Program. This bundled funding approach allows the major principles of pollution prevention (i.e., source reduction, reuse, recycling, treatment, with disposal as the last option) to be at the very heart of each and every program, which prevents everything from just being declared as a waste. Additionally, pollution prevention initiatives are funded internally by the various organizations at the Y-12 Complex. This historical funding approach for the completion of pollution prevention projects has become more typical due to the overall awareness of project successes and through the integration of overall pollution prevention activities in the daily routine operations. As the organizations become more aware of various successful activities, then they continue to provide funding to clean up their respective areas or complete small pollution prevention initiatives. The current level of funding provided to the Y-12 Pollution Prevention Program continues to not be sufficient enough to fund a completely compliant Pollution Prevention Program. For example, the current funding level does not provide funding to completely support the Environmentally Preferable Purchasing requirements, the bio-based requirements, and the overall aspirations of the program.

3. Indicate any P2-related voluntary programs for which the site was officially recognized as a participant during the reporting period, including (but not limited to):

- | | |
|---|-----|
| • Federal Electronics Challenge Partner: | Yes |
| • National Partnership for Environmental Performance: | No |
| • WasteWise: | No |
| • Climate Leaders: | No |
| • Adopt Your Watershed: | No |
| • Green Engineering: | No |
| • Other (If yes, please identify in the comment box): | Yes |

Comments:

Other: Tennessee Pollution Prevention Partnership (TP3) – Performer Level

4. Indicate local, state, regional, and/or national awards (not including DOE/NNSA or Closing the Circle recognition) received during the reporting period for environmental sustainability and environmental compliance efforts.

Comments:

Tennessee Pollution Prevention Partnership Performer Level Award, Tennessee Chamber of Commerce and Industry 2008 Solid Waste Management Award for Recycling Y-12 Transformers Reduces Solid Waste Generation (received in FY 2009), Tennessee Chamber of Commerce and Industry 2008 Water Quality Award for Y-12 Technology Exchange Results in Reduced Waste Water Generation through Implementation of Waste Coolant Evaporator (received in FY 2009), Tennessee Chamber of Commerce and Industry 2008 Achievement Certificate in the Environmental Excellence Award Category for Y-12s LEED Certification Process for New Hope Center (received in FY 2009), Tennessee Chamber of Commerce and Industry 2008 Achievement Certificate in the Hazardous Waste Management Award Category for Y-12s EMS-Driven Green Online Auction and Product Exchange Reduces Hazardous Waste (received in FY 2009)

5. a) How does your site address the toxic chemical reduction requirements of EO 13423 and DOE Order 450.1A? Specifically:

- Has the site identified its list of toxic chemicals and materials for which reduction goals will apply? Yes
- Has the site identified the actions it plans to take to meet its toxic chemical reduction goals? Yes
- Has the site re-evaluated its toxic chemical goals as part of the annual EMS review? Yes
- Please describe your sites progress in achieving the site's toxic chemical reduction goals. Include description of the chemicals being targeted, the reduction goals, efforts completed to date, and next steps, if any:

Comments:

A Y-12 Unneeded Materials and Chemicals (UMC) Project Team was established to focus attention and resources on disposition of UMCs across the complex. As part of the teams actions to date a detailed list of excess chemicals and equipment was developed for purposes of defining goals and schedules for inventory reductions. Using this list an action plan was written and is currently being implemented. A significant quantity of chemicals and materials has been dispositioned through off-site transfers to other facilities, reuse on-site, recycling, and disposal. Over half of the dispositioned chemicals are from laboratory and development operations. Implementation of this action plan will continue over the next few years based on resource and funding availability. Details of the action plan are in the document "Site Plan for Management and Disposition of Unneeded Materials and Chemical (UMC) at Y-12," PL-PJ-900000-A056. The latest status of the UMC project is contained in the document "Annual Report for Management and Disposition of Unneeded Materials and Chemicals (UMC) at Y-12," RP-PJ-976600-A002. At the Y-12 Complex an Environmental Management System (EMS) has been developed and implemented. This system establishes environmental objectives, targets and action plans for the Y-12 Complex. The goals and action plans were developed based on a number of criteria including significant environmental aspects and risk and vulnerability. With respect to toxic chemical reductions the EMS goals include reductions of hazardous chemical inventories and ozone depleting substances (ODS). The reduction of hazardous chemical inventories is detailed in the previously mentioned UMC program description. ODS reductions are based on DOE Order 450.1A objective to eliminate ODS where safe and practical alternatives are available and as equipment using ODS reaches its life-expectancy. Past ODS reduction initiatives began in the early 1980s and focused on Class I ODS usage in refrigerants and solvent cleaning operations. Current Y-12 Complex initiatives in support of the DOE objectives involve elimination of solvents in cleaning processes. Most recently, operations personnel developed and implemented changes in one process which reduced the amount of ODS solvent emissions by up to 19,600 pounds each year. Evaluation of ODS reduction opportunities continue for another solvent cleaning operation. Future actions related to this process will be dependent on on-going efforts to identify a safe and viable replacement chemical or to identify practical and cost-effective modifications to process equipment.

5. b) Has your site implemented a chemical inventory tracking system that integrates information throughout the entire chemical lifecycle covering procurement, storage, use, transfer/movement, and final disposition?

Yes

Comments:

Y-12 uses a combination of its SAP-based procurements system, its Hazardous Materials Information System, and its SAP-based waste tracking system to address chemical inventory tracking. Upgrades to these systems are made periodically, which enhances capabilities.

5. c) Does the EMS include practices to maximize the use of safe alternatives to ODS?

Specifically:

- the use of ODS in new equipment is eliminated : Yes
- the use of ODS in existing equipment is phased out as the existing equipment reaches its expected service life, and the maintenance of equipment is conducted to prevent or fix leaks : Yes
- the replacement of leaking equipment is carried out when leak repairs is no longer cost-effective, or where it is life-cycle cost-effective, to replace the equipme: Yes
- coordinated with DoD for possible transfer of ODS to DoD : Yes

Comments:

Y/TS-1880, Y-12 Complex Ozone Depleting Substances (ODS) Phase-Out and Management Plan provides a complete discussion of requirements and compliance activities at the Y-12 Complex. Additionally Environmental staff provide input to procurement and subcontractor activities involving ODS and other hazardous materials to ensure that applicable regulatory requirements are met. New projects are reviewed as part of the National Environmental Policy Act (NEPA) process to ensure that Class I ODS are eliminated. Reference Y73-164, Subcontract ES&H Management, Y71-915 The NEPA and National Historic Preservation Act (NHPA) Review and Compliance of Proposed Actions; and Subcontractor Provisions Special Articles and Forms, Supplemental Conditions Constructions (CON1/07). To achieve maximum awareness and strive to implement the intent of Executive Order (EO) 13423 periodic training of requisitioners/buyers has been provided. Also, DOE ozone depleting substances (ODS) phase-out goals are reflected in the Y-12 Complex ODS Management Plan. Equipment and processes using Class I ODS continue to be phased out as equipment reaches life expectancy, equipment repairs are no longer cost-effective, or viable solvent replacements are identified. Procurement documents are written to ensure that no additional equipment or processes using Class I ODS are brought onsite, and Class II ODS usage is limited wherever possible. Class I and Class II substitutions are made in accordance with EPA's Significant New Alternatives Program (SNAP). Y-12 Complex personnel are notified as EPA issues regulations detailing SNAP replacement chemicals which may be applicable to plant operations. In accordance with the 2005 DOE goal, Class I refrigerants were removed from 150-ton or greater capacity chillers manufactured before 1984. In addition, there is only one chiller remaining at the Y-12 Complex which contains Class I ODS. This system has a 400 pound charge of refrigerant and was manufactured in 1992. The remaining chiller will be retrofitted or replaced when its repair is no longer cost effective or when it reaches its life expectancy. Y-12 Complex personnel have been active since 1982 in identifying and implementing ODS-solvent substitutions. Most recently, a substitute for CFC-113 was identified for one of the cleaning processes. This product substitution, which was implemented in FY 2008, eliminated up to 19,600 pounds annually of Class I ODS emissions. One process remains which uses methyl chloroform as a solvent. Research is ongoing to find a viable and safe substitute for this Class I ODS. During FY 2009, Y-12 transferred 600 pounds of Freon 113 and 3,915 pounds of Freon 12 to the Defense Logistics Agency (DLA) for reuse, which were Class I ODS. Additionally, Y-12 sold approximately 347 pounds of Freon 113 to a commercial vendor along with other Class II ODS and non-ODS refrigerants. Recovered ODS are typically recycled/reused in other equipment in

the Y-12 Complex. Site procedures require that excess Class I ODS be transferred to DLA as needed. Remaining ODS are offered to other DOE sites or government agencies, sold, or disposed if not useable.

6. a) Are ENERGY STAR® Power Management features enabled on computers and monitors at your site?

- Computers : Yes
- Monitors : Yes

Comments:

Most already enabled; process in place to enable rest; procurement specs require new units to come delivered with Energy Star features enabled.

6. b) What is the estimated % of ENERGY STAR® Power Management enabled computers and monitors at your site?

- Computers : 70 %
- Monitors : 80 %

Comments:

6. c) What is the average lifespan of computers at your site in months?

69 Months

Comments:

Y-12 uses computing products like PC's much longer than the industry average.

6. d)) Are end-of-life computers and monitors sent for reuse or recycling? Specifically:

- Returned to vendor for de-manufacturing: No
- Use of EPA's Recycling Electronics and Asset Disposition (R2) Services Government Wide Acquisition: No

• Use of Department of Justice UNICOR Electronics Recycling Program: No

• Use of General Services Administration Federal Supply Service Multiple Award Schedule 899, Environmental Services for Recycling of Electronic Equipment: No

• Use of recyclers that are members, in good standing, of one or more professional recycling associations such as the International Association of Electronic Recyclers, Institute of Scrap Recycling Industries, and National Recycling Coalition: Yes

• Utilize GSA's Computer for Learning Program (GSAXcess) for transferring surplus computer systems and other surplus electronics to eligible schools (gsaxcess.gov): No

• Specify in IT contracts for leased electronic equipment 'take-back' provisions where, at the end of the lease period, the equipment is reused, refurbished, donated, or recycled using environmentally sound management practices: Yes

- Other (If yes, please identify in the comment box): Yes

Comments:

For leased equipment a “take back” provision is not contained in the subcontract per se because this equipment is owned by the leaser (not Y-12) and they require their equipment returned as it still has residual value.

7. a) Has your site established a preference for ENERGY STAR®, Federal Energy Management Program (FEMP)-designated energy efficient, and WaterSense-labeled products, and did your site purchase these products in FY 09?

• ENERGY STAR® products	Preference: Yes	Purchase: Yes
• FEMP-designated products	Preference: Yes	Purchase: Yes
• WaterSense-labeled products	Preference: Yes	Purchase: Yes

Comments:

7. b) Did your site purchase any of the following environmentally preferable products and/or services, including those used at facilities managed by GSA and leased facilities, in FY 09?

- Carpet with multiple attributes: Yes
- Green conference and meeting services: Yes
- Green janitorial products and services: Yes
- Low or no VOC paints: Yes
- Other (please describe): Yes

Comments:

Examples of “Other” include E-85 fuel, Bio-diesel, Recycled toners, Recycled copier paper, Energy efficient lighting & electrical fixtures. See Y-12 EPP Report for additional materials and information.