

## ***MERCURY SWITCH REMOVAL PROGRAM***

### ***2010 ANNUAL REPORT***

This annual report is presented to the Environmental Review Commission pursuant to Article 9, G.S. 130A-310.57. The report covers the activities of the Mercury Switch Removal Program from July 1, 2009 through June 30, 2010.

#### ***I. OVERVIEW***

Through Session Law 2005-384 [promulgated in House Bill 1136, enacted on September 13, 2005], further amended by Session Law 2007-142 [promulgated in House Bill 1758, enacted on June 29, 2007], the North Carolina General Assembly has acted to reduce the amount of mercury entering our state's environment. As indicated in GS 130A-310.51, the purpose of this statute is to reduce the quantity of mercury released into the environment by removing mercury switches from "end-of-life" vehicles and by creating a removal, collection, and recovery program for mercury switches that are removed from "end-of-life" vehicles in our state. Specifically, it requires that prior to crushing, shredding and smelting of "end-of-life" vehicles (which contain mercury switches for convenience lighting in the trunk and under the hood areas), all vehicle dismantlers, vehicle recyclers, vehicle crushers and/or vehicle scrap processors must remove, collect, and recover the convenience lighting mercury switches. In order to ensure compliance with these regulations, GS 130A-310.50 through .57, the Department has created, under the management and direction of its Division of Waste Management's Hazardous Waste Section, the Mercury Switch Removal Program (MSR Program). The MSR Program is coordinated through the Hazardous Waste Section's Compliance Branch.

#### ***II. PROGRAM STAFFING***

The MSR Program, as part of the Hazardous Waste Compliance Branch, has obligated resources to implement a statewide compliance and technical assistance program, and has provided resources for the administration of the reimbursement program.

- The MSR Program compliance program has implemented technical assistance and monitoring visits to initially introduce the program to those affected. MSR Program staff perform compliance monitoring to confirm inventory control, record-keeping and proper management of mercury switches under the provisions of "Universal Waste".
- The MSR Program has developed educational activities to disseminate program information statewide through on-site visits and consultations, presentations at vehicle processor association meetings, local government outreach and the Division of Waste Management's website.
- The MSR Program has developed Site Safety Plans for MSR Program employees to ensure their safety.

For FY 2009-2010, the program was comprised of field staff inspectors assigned to home duty stations, an administrative assistant, and a program supervisor. For greater coverage and efficiency, the three and one-half positions are, on a part-time basis, spread among nine field inspectors, four supervisors and an administrative assistant. The Mercury Switch Removal Program resides solely within the Hazardous Waste Section's Compliance Branch. (See Attachment 1 for the Organization Chart)

### ***III. NORTH CAROLINA'S MSR PROGRAM***

The focus of North Carolina's Mercury Switch Removal Program is to ensure that end-of-life vehicle recyclers safely and in an environmentally responsible manner, remove, collect, store and recycle as "Universal Waste" all convenience lighting mercury switches contained in the end-of-life vehicles prior to any crushing, shredding and smelting operations in compliance with these regulations and protection of North Carolina's environment.

By signing the Memorandum of Understanding (MOU) to establish the National Vehicle Mercury Switch Recovery Program (NVMSRP), North Carolina gained certain benefits under the national program which are available to our stakeholders and include the following.

The auto manufacturers, through End of Life Vehicle Solutions (ELVS), [a corporation formed by the auto manufacturers], provides the following to NVMSRP Participants, including vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities:

- Upon request (enrollment with ELVS) provide the program participants with educational materials regarding mercury switch removal, guidance on which vehicles contain mercury switches (including the make, year and model of these vehicles), instructions on how to locate, identify and remove Mercury Switches and any information unique to the particular state in which the mercury switch removal is taking place, including applicable state and federal regulatory requirements.
- Provide program participants with appropriate storage/shipping containers, including applicable labeling and shipping documents necessary under state and federal regulations for the safe collection and shipment of the mercury switches.
- Arrange and pay for transportation of the mercury switches in a timely fashion from the vehicle dismantlers, scrap processing facilities or vehicle crushers to a qualified mercury retort facility that has the appropriate RCRA permits for management of the various shipments of mercury switches collected through the program.
- Arrange and pay for the proper recycling of the mercury switches by a qualified mercury retort facility or, when recycling is not feasible, for the proper disposal of the mercury switches at a permitted disposal facility.
- Assume liability for the mercury collected and provide for appropriate indemnification, holding harmless participating vehicle dismantlers, scrap processing facilities, vehicle crushers and others removing switches through this program once mercury switches are collected by the ELVS contractor. Such assumption of liability shall not occur in the event that the vehicle dismantlers, scrap processing facilities, vehicle crushers or other participant fails to package the switches and/or assemblies in accordance with state law and ELVS requirements.

In conjunction with information supplied through ELVS, North Carolina's MSR Program staff gathered and prepared guidance documents detailing the removal and recycling/disposal of the mercury switches utilized for convenience lighting. These documents are available on the Division of Waste Management's website (<http://www.wastenotnc.org>) under the Mercury Switch Program link and include, in part, the following:

- Manufacturers' instructions for locating and safely removing mercury switches/devices

- instructions to vehicle recyclers for identifying the content (mercury or steel ball) of switches whose contents may be unknown (when in doubt, the switch is assumed to contain mercury)
- a safe and environmentally responsible method for storage and final recycling/disposal of the mercury switches/devices (including certain function switches presumed to contain mercury), and mercury spill cleanup procedures
- ELVS enrollment information
- forms for the required recordkeeping and reporting
- procedures for payment of the switch “bounty” (\$5 / switch)
- vehicle marking instructions
- the disposal procedure for recycling the mercury switches as Universal Waste

Reports gathered through ELVS are tabulated by MSR Program staff to evaluate North Carolina’s switch capture rate. This determines our program’s effectiveness, as measured by having a capture rate of at least 90% of the “national capture rate”.

To facilitate compliance by the vehicle recyclers and in an effort to achieve our goal, vehicle recyclers/dismantlers have the option of filing reports either electronically through the Internet or by standard mail. The uniform design of the ELVS services for switch collection, transportation and recycling simplifies the mercury switch removal process and recycler reimbursement.

While the MSR Program statute only regulates convenience mercury lighting switches (hood and trunk lighting), the MSR Program also encourages the vehicle recyclers to remove the Anti-Lock Braking System (ABS) g-force (gravity detection) mercury switches found in a limited number of automobiles. In addition, the MSR Program has included other educational information on the DWM website regarding Universal Waste, such as information on used fluorescent lamps, since mercury is also utilized in these products.

#### ***IV. SUBJECT FACILITIES***

All vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities that process six or more vehicles for the purpose of salvage must remove the mercury-containing convenience lighting switches prior to crushing, shredding or smelting of those vehicles. To participate in North Carolina’s Mercury Switch Removal Program’s reimbursement process, vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities must register with ELVS and with the NC MSRP office. This is accomplished by sending a completed post card to ELVS and a completed tax ID registration form to the NC MSRP office. Currently there are 419 facilities registered with ELVS as part of the North Carolina Mercury Switch Removal Program.

#### ***V. FACILITY ASSESSMENTS***

During FY 2009-2010, MSRP inspectors conducted a total of 475 inspections, visiting more than 284 facilities throughout North Carolina’s 100 counties. The site visits were intended to evaluate whether the facility was subject to the law and to acquaint operators of regulated facilities with the legislation. Additional compliance assistance was given by the inspectors as needed regarding other RCRA and CWA regulated requirements.

#### ***VI. ENFORCEMENT & COMPLIANCE***

The vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities are cooperative and have rapidly responded with corrective action in most cases when recommendations were made or minor deficiencies were cited. If minor deficiencies are not corrected in a timely and uniform response resulting in a return to compliance, a more severe enforcement action is taken, such as a Notice of Violation (NOV) or a Compliance Order (CO) with administrative penalty.

One Warning Letter ("Used Oil" infraction) was issued during the period between July 1, 2009 and June 30, 2010. No Compliance Orders or Notices of Violations were issued during this period.

## ***VII. FUNDING & EXPENSES***

The Mercury Switch Removal Program is funded by fees collected as part of the NC DOT vehicle title fee. One dollar of the \$40-per-vehicle title fee is placed in the Mercury Switch Removal Account in the Department of Environment and Natural Resources. The FY 2009-2010 projected budget was approximately \$1,012,000, which included an adjusted reimbursement budget of \$648,700. Vehicle dismantlers/recyclers, vehicle crushers, and scrap processing facilities, receive \$5.00 per switch to offset the costs of removal of the mercury switches, proper recovery and disposal. This budgeted reimbursement amount was sufficient to pay for the removal and proper disposal of 129,740 switches. In FY 2009-2010, total operating costs for the Mercury Switch Removal Program were \$993,000, which included switch reimbursements totaling \$648,000.

The volume of recovered switches, and therefore the associated reimbursement costs, were higher in 2009-2010 than original projections. The program targeted removal of 96,000 and actually received 118,522 switches. There are several factors that may account for the higher volume. "Cash for Clunkers", which ran from July through November 2009, caused an upsurge in the vehicle retirement/scrap rate. Other factors include: the one-year limit for holding Universal Waste (mercury switches); the weak economy (while scrap prices were still depressed, the value of the switches remained constant); concern about the continuation of the NVMSRP due to the GM bankruptcy; and the sporadic nature of switch shipping.

Another possibility is that mercury switches were being brought into North Carolina from other states as the voluntary NVMSRP reimbursement program ended due to the GM bankruptcy. The NC MSR Program has imposed additional recordkeeping requirements on the major mercury switch submitters. North Carolina General Statute 130A-310.51. clearly defines the purpose of the NC MSR Program as the creation of a removal, collection, and recovery program for mercury switches that are removed from end-of-life vehicles "in this State", DENR recommends that 130A-310.55. [Violations of Article; enforcement] be amended to include a violation for falsely reporting that a mercury switch removed from a vehicle located outside of North Carolina was removed from a vehicle located in North Carolina for the purpose of receiving the state reimbursement of \$5.00 per switch.

## ***VIII. SUMMARY***

Through the efforts of the MSR Program staff, North Carolina currently ranks fifth in the nation with respect to the number of participating facilities removing and disposing of mercury switches as part of the national ELVS Program.

In our third year (July 1, 2009 to June 30, 2010), those participating in North Carolina's MSR Program removed, collected and shipped for recycling/disposal 118,522 automotive convenience lighting mercury switches. For the same time period, the National MSR Program removed a total of 690,276 mercury switches (including North Carolina's 118,522).

From historic data collected from the automobile manufactures, the Society of Automotive Engineers (SAE), Ward's Motor Vehicle Facts & Figures (scrap rate history) and Michigan DEQ, a model was constructed known as the "Michigan Switch Study Model for Estimating Population of Hg Convenience Light Switches". This model provides projections of mercury switch availability nationally and for each state for the time period from 2006 through 2017. The NVMSRP periodically reviews and modifies this model as additional data becomes available. From the current model, the estimated number of automotive mercury switches available nationally for FY 2009-2010 was approximately 3,648,000 and for North Carolina the number of automotive mercury switches available is approximately 96,500. The ratio of the number of switches removed to the number of switches available expressed as a percentage is, for the US, 18.92% and for North Carolina is 122.82%. The NC MSR Program goal is to achieve at least 90% of the national ratio. North Carolina has achieved 649% of the national performance ratio. For FY 2009-2010, North Carolina ranked first in mercury switch removal efficiency and ranked first in total number of mercury switches removed.

Currently, in 2010, North Carolina remains first in the nation in effectively removing mercury from automobile steel scrap. Since the start of operation on July 1, 2007, North Carolina MSR Program participants have prevented more than *five hundred fourteen pounds of mercury* (from more than 233,500 switches) from being released into our environment.