This project assessed two potential ways to maximize the removal of mercury-containing switches from vehicles owned and operated by the State of New Jersey. Considered were 1) replacement of mercury switches with non-mercury switches while vehicles were in service, and 2) removing these switches at the time the vehicles are retired from State service. It was determined that option 2) was more feasible. The Department of Environmental Protection (DEP) and the Department of Treasury entered into a Memorandum of Understanding whereby Department of Treasury agreed to remove switches which would be picked up periodically by DEP and sent to be recycled. As of October, 2006, nearly 600 switches had been removed, representing approximately 1.5 pounds of mercury.

Methods

DSS inspects vehicles as they are being readied for auction at the Department of Treasury Distribution Center in Trenton, NJ and identifies mercury-containing switch assemblies. Such assemblies are removed, using small hand tools as necessary, and placed in a marked 5-gallon bucket provided by DEP. See Figures 1 and 2. The vehicle make, model, year, and location of switch assembly (hood or trunk area) are recorded on data sheets provided by DEP. DSS periodically visits the Distribution Center and picks up the bucket containing switch assemblies and replaces it with an empty bucket. DEP conveys the switch assemblies to the Comus International manufacturing facility in Clifton, NJ. This facility then ships the switches to a recycling firm, Bethlehem Apparatus, in Bethlehem, PA, for recycling.
Results

DSS personnel have become adept at recognizing mercury-containing switches and removing them. The entire removal process typically takes less than a minute per assembly. Lack of a functioning convenience light assembly in vehicles to be auctioned is not considered by DSS to represent a significant detract from a vehicle’s value. It has been observed that convenience lights are sometimes not functional anyway by the time a vehicle is retired from state service.

As of October, 2006, approximately 600 mercury switch assemblies, containing approximately 0.7 kg (1.5 lbs.) of mercury had been removed from surplus state vehicles.

The number of mercury switches found in surplus vehicles appears to be declining, as is expected because no mercury switches were installed in new vehicles after 2002. Removal of switches by DSS is planned to continue until mercury switches are no longer present in surplus vehicles.

Discussion and Conclusions

Removal of mercury switch assemblies from fleet vehicles that are conveyed to a central location upon retirement as is the case with New Jersey state vehicles is feasible and is an effective method of ensuring that the mercury contained in the switches is not released to the environment when the vehicles are eventually discarded.

Acknowledgments

Thanks to Bob Romano, President, Comus International, Clifton, N.J. for receiving and recycling the removed switch assemblies. Thanks to Michele Salamon, Department of Treasury, Division of Purchase and Property, Distribution and Support Services (DSS), for her vision and creativity in initiating Treasury’s involvement in the project. Thanks to Henry Karnas, and Jacob Olearchik, also of DSS, for assistance and expertise. Thanks to Derval Thomas, EPA Project Officer, for his understanding and guidance as the project evolved. Thanks to Randy England, DEP, Division of Science and Research for his considerable assistance and counsel.

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