The Massachusetts Dept. of Environmental Protection (MassDEP) contracted with NEWMOA to research mercury pollution prevention awareness and practices at drinking water and wastewater treatment plants in Massachusetts.
Background

- Targeted water treatment plants undergoing facility upgrades under ARRA or SRF funding
- Conducted a survey of these facilities
- Completed site visits at six facilities
- Drafted a report of our findings and provided recommendations for MassDEP
Online Survey

• Inventory of mercury devices at the facility
• Plans for removing or replacing mercury devices during their upgrades
• Handling & disposal procedures for mercury items once they are no longer being used
• History of mercury spills at the facility
Site Visits

• Completed the inventory of mercury devices at the facility

• Made recommendations for storage/labeling of devices still in use

• Discussed disposal and recycling options for mercury devices no longer in use

• Discussed possible non-mercury alternatives
Results - Switches

- Float switches
- Pressure switches
- Pressuretrols
- Thermostats
Results - Thermometers

Outdoor Max-Min Thermometer

Mercury Thermometer on Boiler System

Oven Thermometer
Results - Mercury Lighting

- Fluorescent lamps
- HPS lamps
- Metal halide lamps
- UV lamps
Vacuum gauge with a mercury manometer
Legacy Mercury Products

- Old Appliances
  - chest freezers; gas flow regulators; and silent light switches
- DC watt hour meters
- Old Paints & Other Chemicals
  - latex paint; marine paint; and pesticides
- Rectifiers
- Trickling filters
Non-Mercury Alternatives

- Alcohol-based and digital thermometers
- Aneroid barometers
- Aneroid and digital pressure gauges
- Digital thermostats
- LED lighting
- Mechanical float switches and pumps
- Ultrasonic flow meters
Non-Mercury Alternatives

Non-Mercury Pressure Gauges

Digital Pressure Gauge

Aneroid Pressure Gauge
Non-Mercury Alternatives

Ultrasonic Flow Meter Technology
Conclusions

• New facility upgrades are not designed with mercury devices

• Construction companies in charge of upgrade implementation dispose of mercury as HW

• Several facilities already use non-mercury devices

• Successful mercury cleanouts are possible
Conclusions

- Identifying mercury-added lighting is a problem for many facilities
- Many facilities lack knowledge on proper handling and disposal of mercury devices
- Increasing operator awareness of mercury devices and non-mercury alternatives is the key to success
Questions

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