Chlor-Alkali Sector Mercury Reduction Accomplishments

Binational Toxics Strategy Stakeholder Forum

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Agenda

- CI Commitment to the BTS
- Mercury use in chlor-alkali facilities
- Why some facilities are adding mercury
- Accounting for mercury use
- Enhanced cell room monitoring
- Path forward

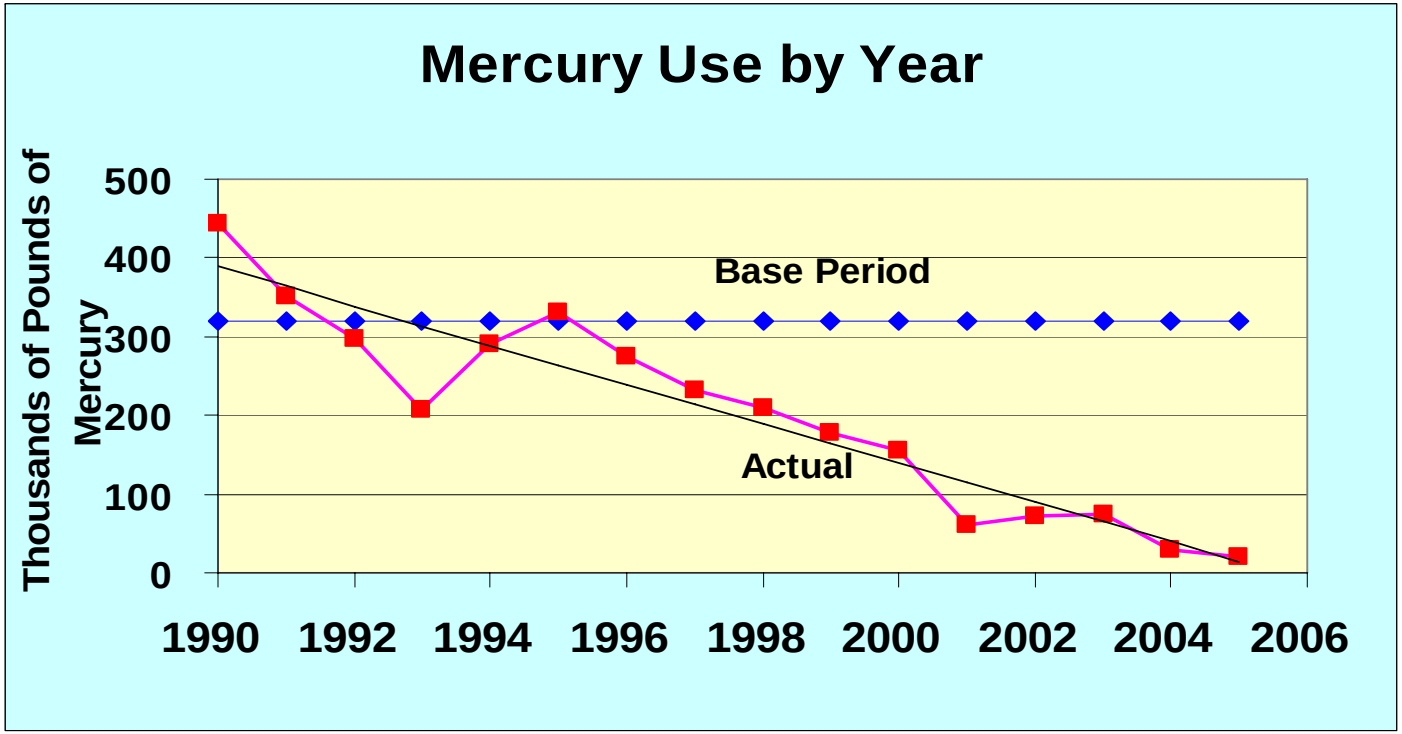
Commitment to BTS

- In 1996, the USA Mercury Cell Chlor-alkali industry committed to a 50% reduction in mercury use by 2005 in support of the US Binational Toxics Strategy Goal
  - In July 1997, industry representatives met with high EPA officials to discuss the commitment in detail

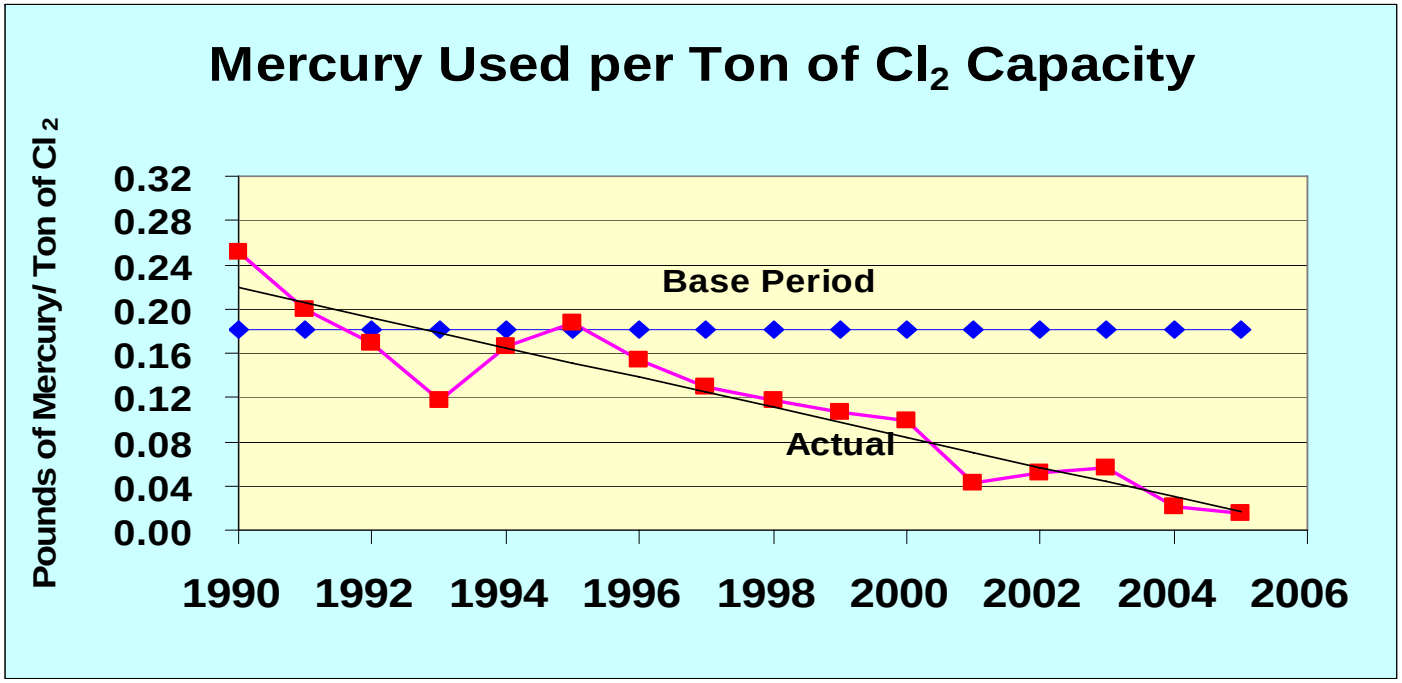
Commitment to BTS (continued)

- CI/Industry committed to provide EPA with an annual progress report
- CI has just issued its Ninth Annual Progress Report

Mercury Use Since 1990



Mercury Use Since 1990 Per Ton of Chlorine Capacity



Mercury Purchases vs. Mercury Use

- In the long term mercury purchases should approximate mercury use
- Near term issues – New more stringent Mercury MACT are requiring process changes
  - Fugitive emissions from cell rooms likely will be reduced significantly as part of the new regulation

Sources of Fugitive Emissions

Equipment Maintenance [Major]

- Cell openings
- Decomposer openings
- Other maintenance (e.g., piping, vessels)

Process Leaks [Minor]

(e.g., Hydrogen process stream)

Actions to Reduce Fugitive Emissions

- Larger Equipment to Reduce Cell Openings
  - Decomposers – in some cases - up to 1/3
  - Means more mercury in inventory
- Improve Electrical Distribution System to reduce primary cell maintenance
  - Poor electrical distribution can damage anodes requiring repair (cell openings)
- More reliable equipment
  - Sealless mercury pumps
  - Hydrogen coolers (larger, better design)

Surplus Mercury From Closed Facilities

- Since the commitment was made, the number of mercury cell facilities decreased from 14 to 8
  - We consider mercury obtained at an operating site to be a purchase even if the mercury is obtained from a closed site
  - If we credited ourselves for surplus mercury from closed sites, mercury purchases since 1999 would be negative.

Enhanced Monitoring of Cell Room Emissions

- Third parties have raised concerns that unaccounted for mercury is escaping to the environment via cell room emissions
- All measurements conducted on cell room emissions have shown that emissions are within the current NESHAP allowance
  - In many cases, emissions were measured to be only 50-60% of allowable limits

Enhanced Monitoring of Cell Room Emissions (continued)

- Techniques have been developed to measure cell room emissions on a continuous basis.
- Two facilities completed installations in 2005
- Several others in progress
- EPA verified methodology – within MACT limits

Unaccounted for Mercury

- Began reporting in 2004 back to 2002
- Declined 89% from 28 tons in 2002 to three tons in 2005
- Unaccounted for mercury is within the statistical accuracy of measuring mercury inventories

Goals / Path Forward

- Fully comply with the new MACT
- Continue mercury reduction activities
- Integration of BTS reporting with UNEP reporting

Questions?

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