

CASE EXAMPLE AND LOW COST MODEL FOR SOUND MANAGEMENT OF ULAB

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Workshop on Sound Management of Used Lead Acid Batteries

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The Time Line

I. THE PAST

II. THE PARADIGM SHIFT

III. INITIAL OUTCOMES

IV. LATEST ADVANCES

I. THE PAST

High slag generation (32%)

High cost acid neutralization and disposal (\$1.50 each battery)

High energy use (\$ 15,000 per month)

High use of chemicals (\$ 350.00 per ton)

High health and occupational risk (45 $\mu\text{g}/\text{dl}$ Pb in blood)

Problems with environmental authority (the Plant was closed)

II. THE PARADIGM SHIFT

Decision to change

Learnt Cleaner Production – understanding the process

Learnt ISO 14000

Learnt Basel Convention technical guidelines

Learnt Technical Assessment of ULAB Recycling

Received support from BCRC-CAM, ILMC, SBC and

UNIDO/UNEP National Cleaner Production Center

III. INITIAL OUTCOMES

- Obtained first Green Lead Award
- Ministry of Environment authorized importation of ULAB
- Obtained two national and two regional Cleaner Production Awards
- Obtained second Green Lead Award

III. INITIAL OUTCOMES

- ✓ 70 % increase in energy efficiency (140,000 Btu used oil vrs 98,000 Btu LPG)
- ✓ 64 % increase in furnace charges (56,000 pounds vrs 36,000 pounds)
- ✓ 13 % productive increase in 24 hours (73% vrs 60 %)
- ✓ 54 % reduction in exhaust gases
- ✓ 27 % reduction in solid waste generation (27% vrs 32%)
- ✓ 54 % reduction in fossil fuels (Used oil instead of Diesel)
- ✓ 80 % reduction in the use of chemical reagents

IV. LATEST ADVANCES

- ✓ Slag reduced to 1.76% (with Hydrogen fuel cell will move to 0% by first quarter 2016)
- ✓ Reconditioned electrolyte to sulfuric acid for sale to other industries (soap, metal cleansing, cooling towers, etc)
- ✓ 98% reduction in the use of chemical reagents
- ✓ Continuous desulfurization process

IN PREPARATION

- ✓ Made plastic timber planks from polypropylene
- ✓ Washing stack exhaust gases with marine algae (to clean CO₂)
- ✓ Increase fuel efficiency by direct tapping to the refining kettle

THANKS!

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