

REINHOLD ENVIRONMENTAL Ltd.



**2013 APC Round Table
& Expo Presentation**

July 8-9, 2013, in St. Louis, MO / Hosted by Ameren

All presentations posted on this website are copyrighted by Reinhold Environmental, Ltd (RE). Any unauthorized downloading, attempts to modify or to incorporate into other presentations, link to other websites, or obtain copies for any other uses than the training of attendees to RE's Conferences is expressly prohibited, unless approved in writing by RE or the original presenter. RE does not assume any liability for the accuracy or contents of any materials contained in this library which were presented and/or created by persons who were not employees of RE.

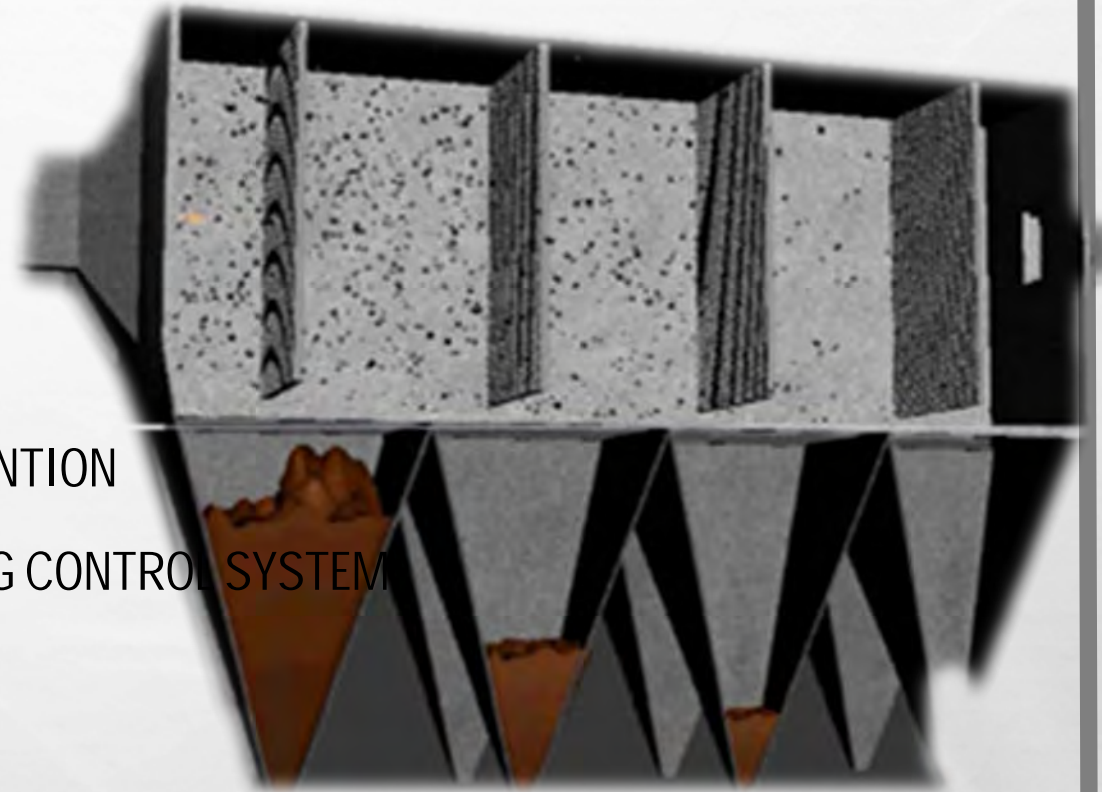
HOPPER MANAGEMENT

PAUL FORD, REDKOH INDUSTRIES AND MATT RICHARDS, HOTFOIL EHS



WHAT'S THE POINT?

- ARE HOPPERS OUTSIDE OF THE REALM OF REQUIRING ATTENTION
- SHOULD THEY BE AN INTEGRAL PART OF THE ASH HANDLING CONTROL SYSTEM
- CAN EMISSIONS BE REDUCED?
- CAN DAMAGE BE PREVENTED?
- CAN MANPOWER BE MINIMIZED?
- CAN ENERGY BE SAVED?



WHAT'S ON A HOPPER THAT WOULD MAKE IT REQUIRE ATTENTION

- HEATERS
 - POWER SOURCE
 - TEMPERATURE CONTROLLERS
 - COORDINATION
- ROTARY VALVES – SLIDE GATES
 - POWER SOURCE / CONTROL
 - DRIVES / PNEUMATICS
 - COORDINATION
- LEVEL INDICATORS
 - WORKING AND ACCURATE
- VIBRATORS
 - POWER SOURCE / CONTROL
- ACCESS DOORS
 - SEALS
 - CORROSION
- POKE RODS
 - FREE MOVEMENT
- STEEL SURFACES
 - CORROSION FREE
 - HOLE FREE
- INSULATION
 - INTACT
 - DRY

HEATERS

- POWER SOURCE – SCR'S OR CONTACTORS
- TEMPERATURE CONTROLLERS – DISCRETE OR PLC
- COORDINATION – PLC OR DCS



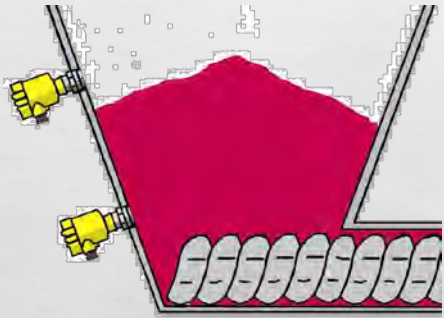
ROTARY VALVES – SLIDE GATES

- POWER SOURCE / CONTROL
- DRIVES / PNEUMATICS
- COORDINATION



LEVEL INDICATORS

- WORKING AND ACCURATE



VIBRATORS



- POWER SOURCE / CONTROL
- AC VIBRATORS – CONTACT AND NON-CONTACT
- PNEUMATIC VIBRATORS
- IMPACT RAPPERS
- A BIG HAMMER



ACCESS DOORS

- SEALS – GASKETS INTACT
- NO CORROSION



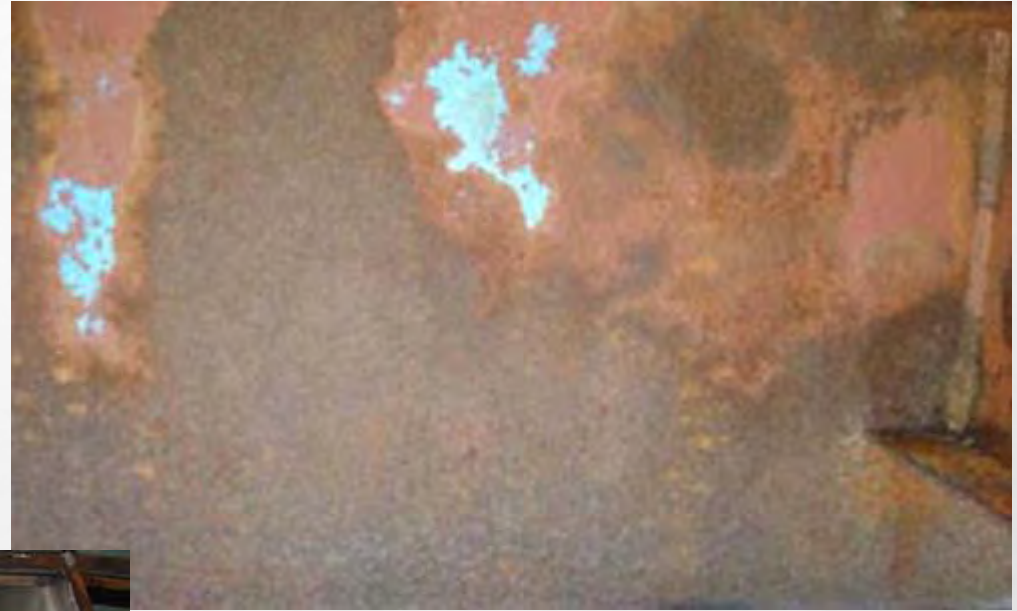
POKE RODS / CHAINS

- FULL AND FREE MOVEMENT



STEEL SURFACES

- CORROSION FREE
- HOLE FREE
- SCALE FREE



INSULATION

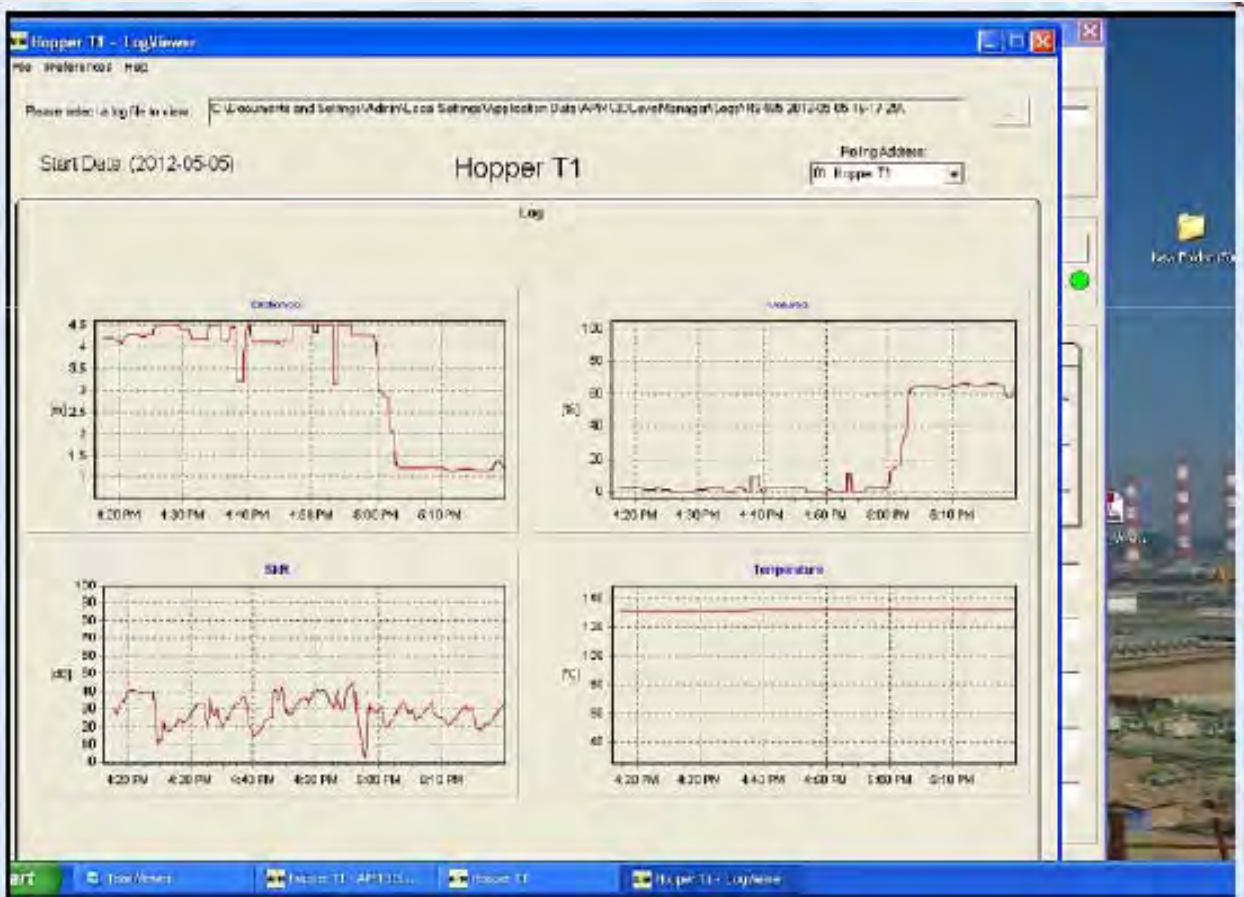
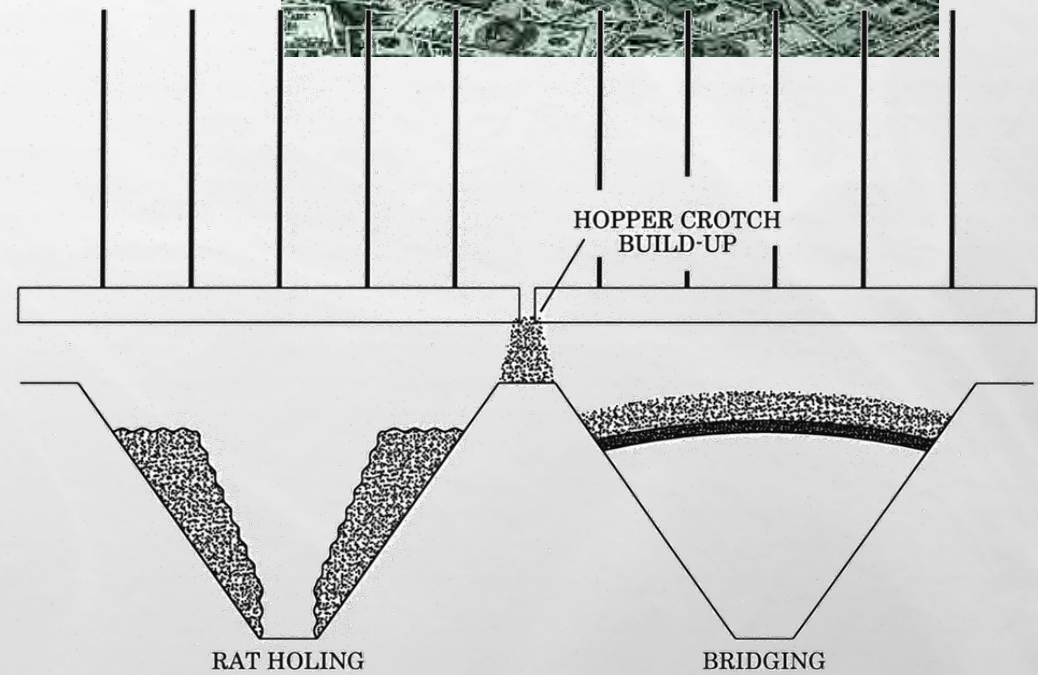
- INTACT
- DRY



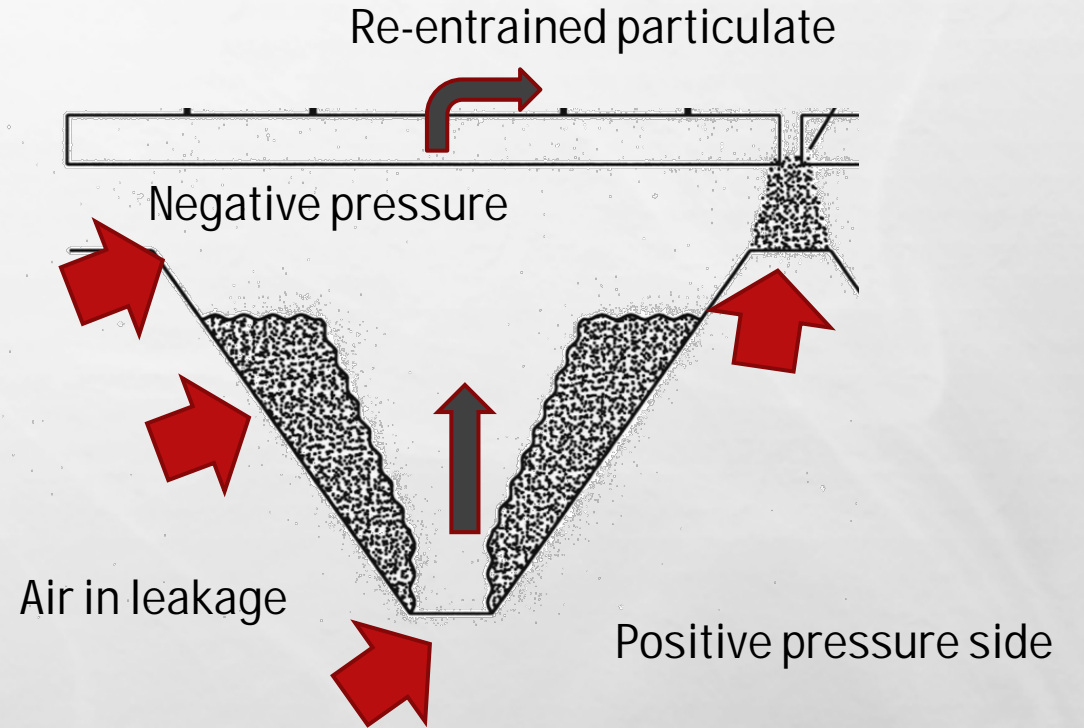
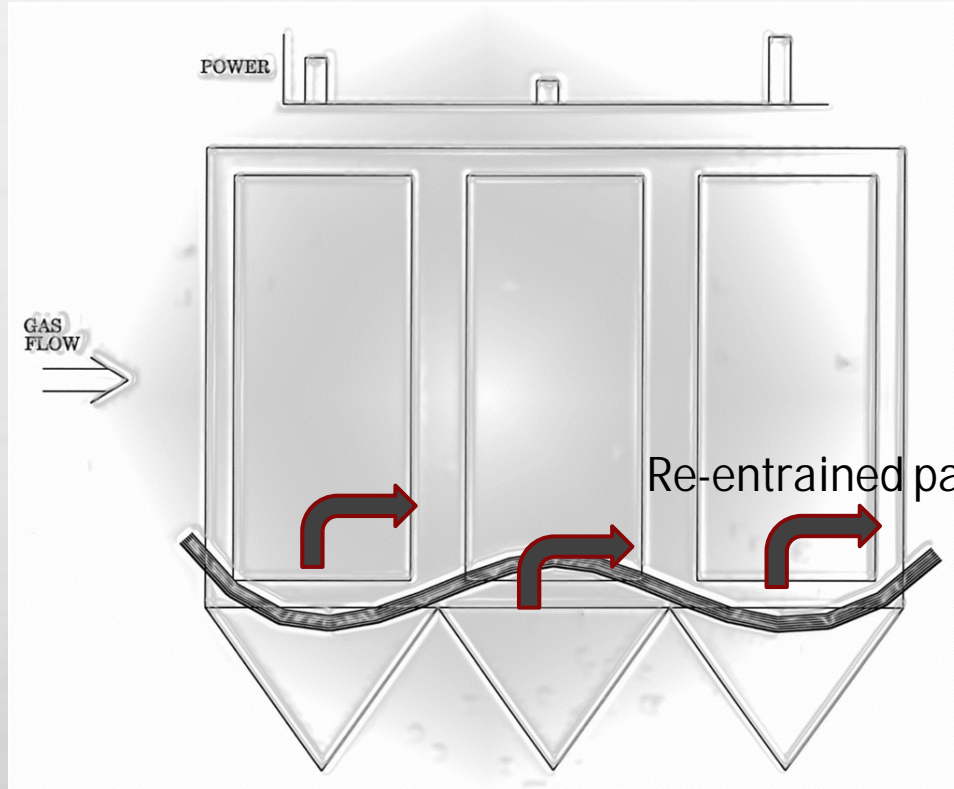
AN INTEGRATED SYSTEM

- TR CONTROLS
- RAPPER CONTROLS
- HOPPER LEVEL DETECTORS
- HOPPER HEATERS
- HOPPER VIBRATORS
- ROTARY VALVE / SLIDE GATE OPERATION
- COMPRESSOR OPERATION
- VACUUM DETECTION
- HOPPER LEVEL CORRELATION
- BAG HOUSE CONDITION
- STORAGE SILO INVENTORY

INTEGRATION



EMISSION REDUCTION



DAMAGE MITIGATION

- MECHANICAL DAMAGE
- STRESSED HOPPERS
- CORRODED HOPPERS
- SEIZED VALVES
- WARPED ELECTRODES
- WARPED PLATES
- FINANCIAL DAMAGE
- TRIPPED TR SETS
- EMISSION EXCURSIONS
- DERATING

MAN POWER.

- PROPER PLANNING PREVENTS POOR PERFORMANCE
- WORK SMARTER, NOT HARDER
- MORE WELL WORN CLICHÉS
- BOTTOM LINE.....FOREWARNED IS FOREARMED

ENERGY MANAGEMENT

- COORDINATE EXTRACTION / COMPRESSOR OPERATION WITH HOPPER CONDITIONS
- MINIMIZE COMPRESSOR RUN TIME BY KNOWING WHETHER HOPPER HAS A PROBLEM
- REDUCE TR POWER TO PREVENT OVERFILLING IF EXTRACTION OR HOPPER SYSTEM HAS ISSUES
- ADJUST RAPPING CYCLES IN THE EVNT OF ASH HANDLING PROBLEMS
- CHECK EFFECTIVITY OF VIBRATIONS SYSTEMS
- COORDINATE VIBRATION SYSTEMS WITH EXTRACTION PROGRAMS
- OPERATIONS CAN CLEARLY GUIDE MAINTENANCE AS TO LOCATION OF PROBLEM.
- ONE MAN WITH A HAMMER COULD REPLACE 2 CALLED OUT ELECTRICIANS TO SOLVE A TR UNDERVOLTAGE TRIP

THAT'S A LOT OF POINTS!!!!

- QUESTIONS

- THANKS FOR LISTENING

- PAUL FORD, PRESIDENT

 - REDKOH INDUSTRIES

 - HILLSBOROUGH, NJ

- MATT RICHARDS, VICE PRESIDENT

 - HOTFOIL EHS

 - HAMILTON, NJ