




APCO Services Inc.

**ENVIRONMENTAL
CONSULTING AND TESTING**
SINCE 1986

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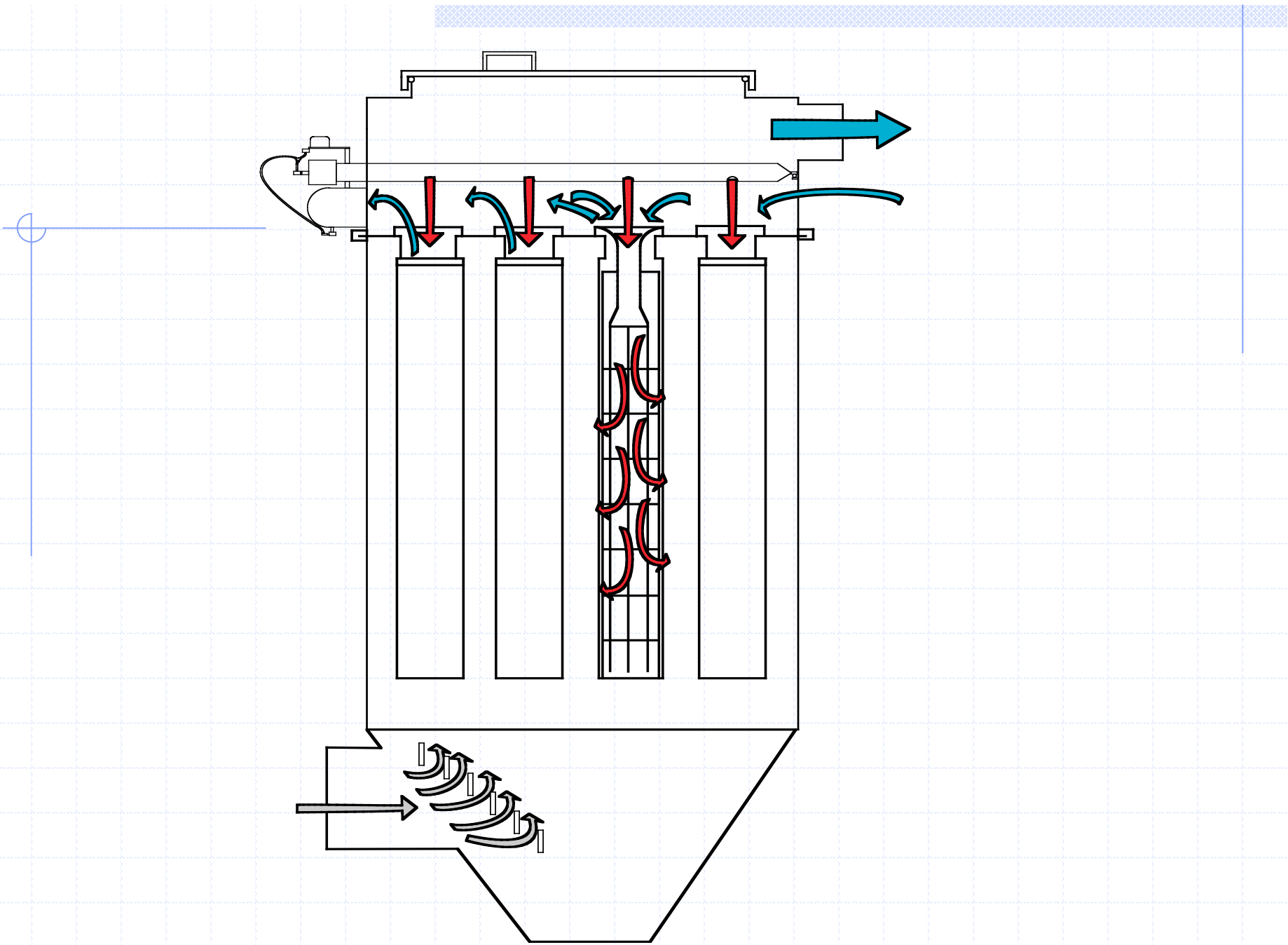


Operation and Maintenance Basics

Pulse Jet Fabric Filter

PJFF-BAGHOUSE BASICS

- ◆ BAGS DON'T FILTER
- ◆ OVERCLEANING WORSE THAN UNDER CLEANING
- ◆ CLEANING IS THE PRIMARY WEAR FUNCTION
- ◆ PULSE AIR ***DOESN'T*** CLEAN THE BAGS
 - * CONVENTIAL NORTH AMERICAN DESIGN
- ◆ SIZE DOES MATTER



Sizing a Baghouse

◆ **AIR TO CLOTH RATIO**

GAS VOLUME (CFM) TO
SQUARE FOOT OF FABRIC (ft.²)
Filtering velocity (ft/min.)

PULSE JET = *3.25:1-3.65:1*

REVERSE AIR = *2.0:1-2.25:1*

MOST COMMON PROBLEMS

- ◆ OVER CLEANING
- ◆ REBAGGING OPERATION
- ◆ BAG SELECTION & FIT
- ◆ TEMPERATURE EXCURSIONS
- ◆ UNDER SIZED COLLECTORS
- ◆ WHEN TO CHANGE BAGS

OVERCLEANING

- ◆ OVERCLEANING worse than under cleaning
- ◆ Bags receive more damage from cleaning than normal filtering
- ◆ Reduced cleaning frequency will extend filter bag life
- ◆ Reduced cleaning pressure (flexing) will extend filter bag life

Recommended Cleaning

◆ PULSE JET "PJFF"

- ◆ CLEAN BASED ON DIFFERENTIAL PRESSURE
- ◆ CLEAN ON LINE IF POSSIBLE
- ◆ USE MINIMUM PULSE PRESSURE THAT WILL CONTROL DIFFERENTIAL PRESSURE

MED.-20-35PSI, HIGH-70-85PSI

- ◆ CLEAN ONE ROW IN EACH COMPARTMENT AT A TIME (Better distributes dust to collector)
- ◆ INSURE COMPRESSED AIR QUALITY IS CLEAN AND DRY (CP/\$\$\$)
- ◆ ***EXPERIMENT (WORTH THE EFFORT)***

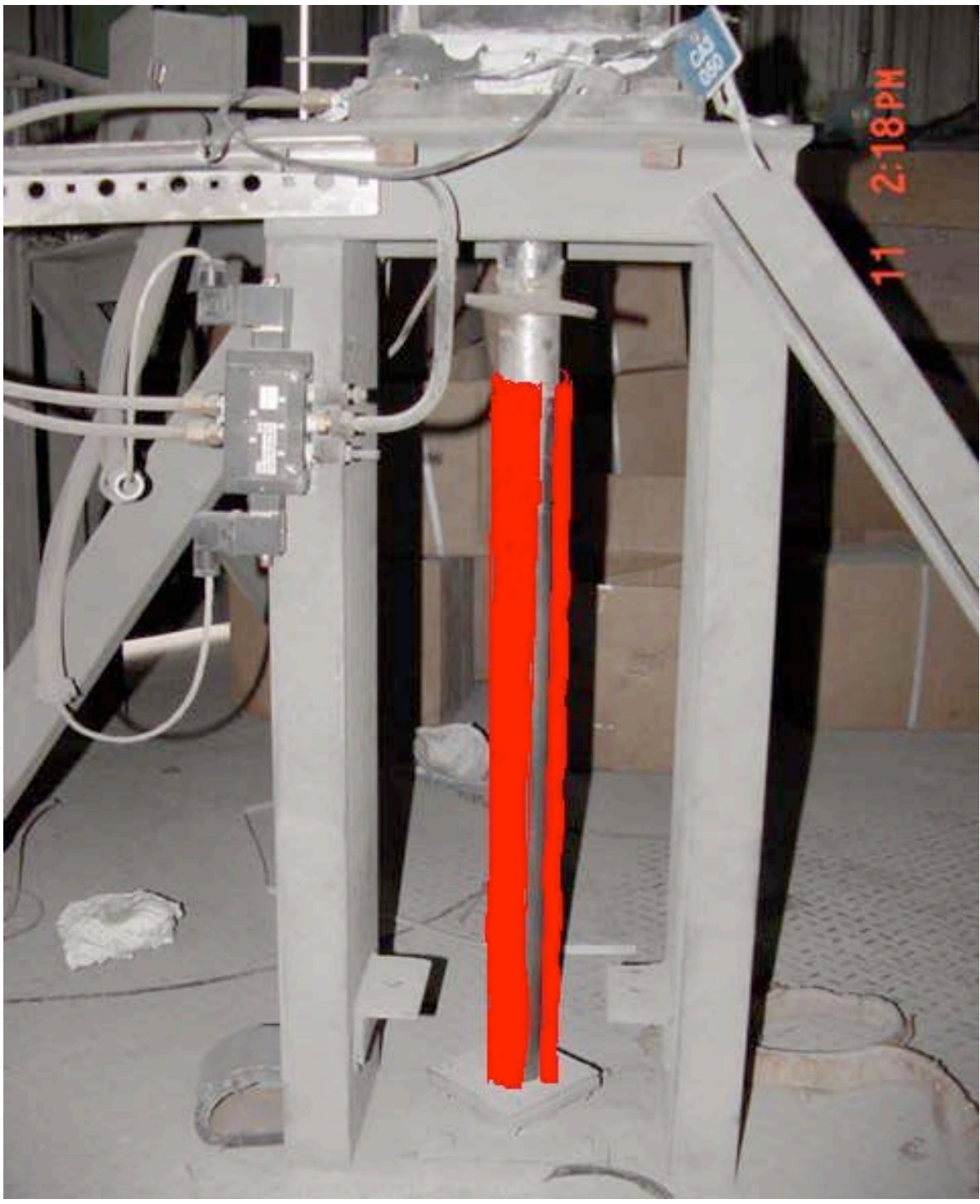
REBAGGING

REBAGGING INDIVIDUAL

COMPARTMENT WHILE ONLINE

FABRIC PROTECTION FROM HIGH VELOCITY IMPINGEMENT MUST OCCURE TO PREVENT PREMATURE BLINDING OF NEW BAGS

1. FLOW CONTROL
2. PRECOAT
3. PULSE CLEANING PRESSURE REDUCTION (24HRS.)



BAG SELECTION AND FIT

- ◆ CHOOSE FABRIC BASED ON YOUR GAS STREAM
- ◆ FIT DIAMETER INTO TUBESHEET HOLE CRITICAL
 - BAG SHOULD SNAP (POP) INTO HOLE WITHOUT SINNING,
INSIST ON SAMPLE TEST BAGS BEFORE FINAL ORDERING
- ◆ BAG CIRCUMFERENCE TO CAGE SHOULD BE $\frac{1}{4}$ " TO $\frac{1}{2}$ " LARGER
- ◆ LENGTH SHOULD BE $\frac{1}{2}$ " LONGER THAN CAGE
 - ◆ (FABRIC SPECIFIC, AS SOME BAGS SHRINK MORE THAN OTHERS)
- ◆ REPLACE RUSTY BAG SUPPORT CAGES TO AVOID PREMATURE FAILURES (\$\$\$)

FABRIC SELECTION

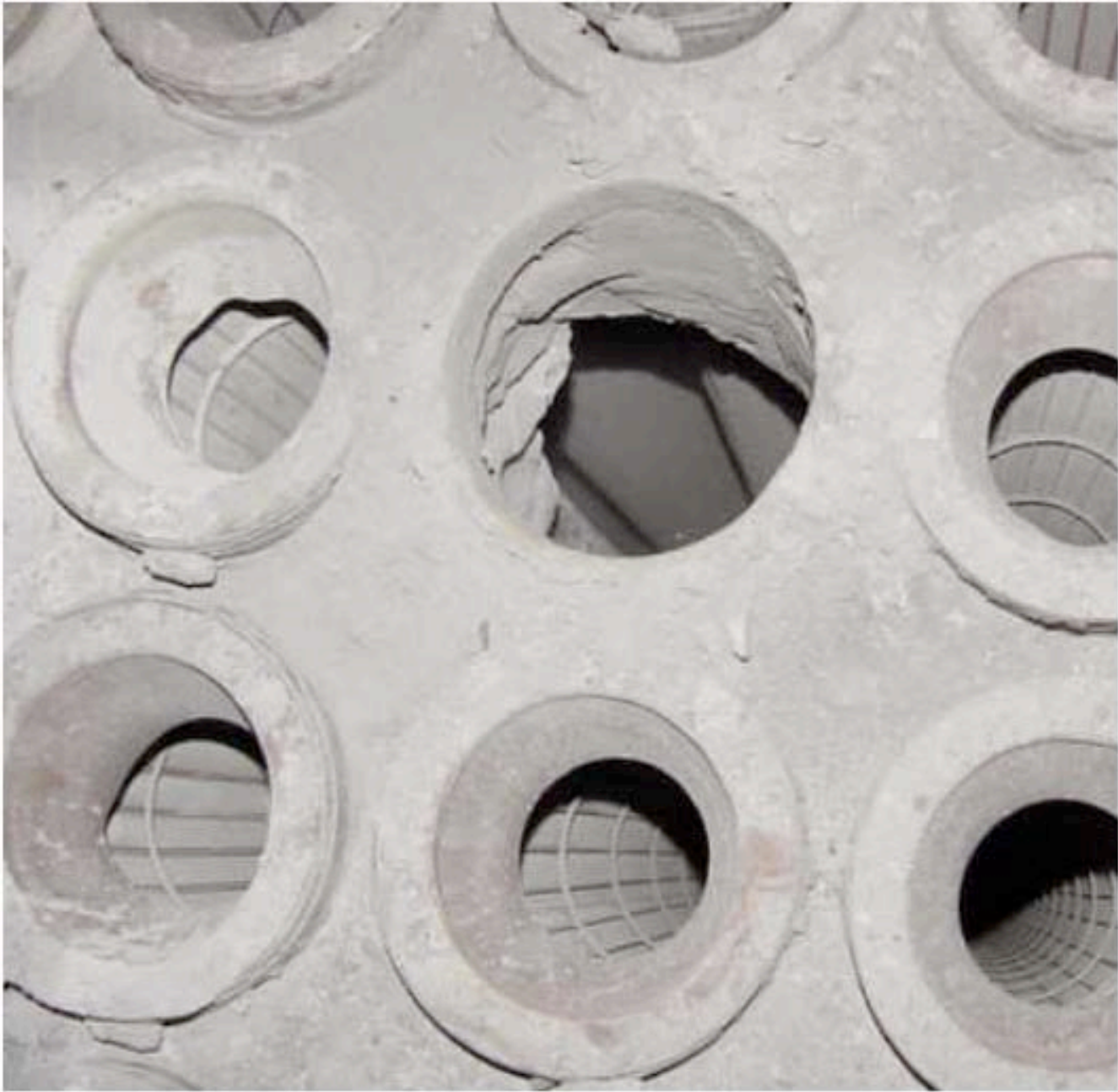
- Baghouse Operating Temperature
- Abrasion Resistance Needed
- ◆ Resistance to Cleaning Energy
- Gas Stream Chemistry
- Air-to-Cloth Ratio
- Cleaning Method



LOW TEMPERATURE EXCURSIONS

Dew Point (H2O & ACID)

- ◆ DURING LOW LOADS, START UP, AND CLEANING, TEMPERATURES CAN DROP BELOW DEW-POINTS
- ◆ STAGE INDIVIDUAL COMPARTMENTS ONLINE TO MINIMIZE DEW-POINT EXPOSURE
- ◆ **CAUTION**, IF SCRUBBER IS UPSTREAM OF FABRIC FILTER **BE CAREFUL!** (+30 degrees)
- ◆ CONTROL AROUND FABRIC FILTER **OUTLET** TEMPERATURE



Trouble Shooting

◆ Bag Failures

Visolite Chalk Black Light test

Polishing on bottom of blow pipes

Bottom bag abrasion (Hopper Insp.)

Failed bag inspection tells a lot

Laboratory testing



DOORS & GASKETS

- ◆ REPLACE DOOR GASKETS WHEN LEAKING
- ◆ REPAIR AND REPLACE BROKEN DOOR HOLD DOWNS
- ◆ **REPLACE DOORS** WHEN GAS TIGHT SEAL NO LONGER OCCURES

BAG LIFE CYCLE TIME LINE

- ◆ USE PERIODIC BAG TESTING TO DETERMINE BAG LIFE
- ◆ SAVES MONEY AND TIME BY CHANGING BAGS WHEN THEY NEED IT

Bag Permeability (Typical Life Cycle)

