

# *Engineering @ West Point*

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# *Engineering @ West Point*

## ✦ Job Responsibilities

- ✦ Problem solving
- ✦ Maximizing efficiencies and processes
- ✦ Scheduled Projects
- ✦ Scheduled Maintenance

## ✦ Range of Work

- ✦ Design
- ✦ Project Management
- ✦ Construction Management

## ✦ Examples



# *Problem Solving*

Raw Sludge Exhaust Fan

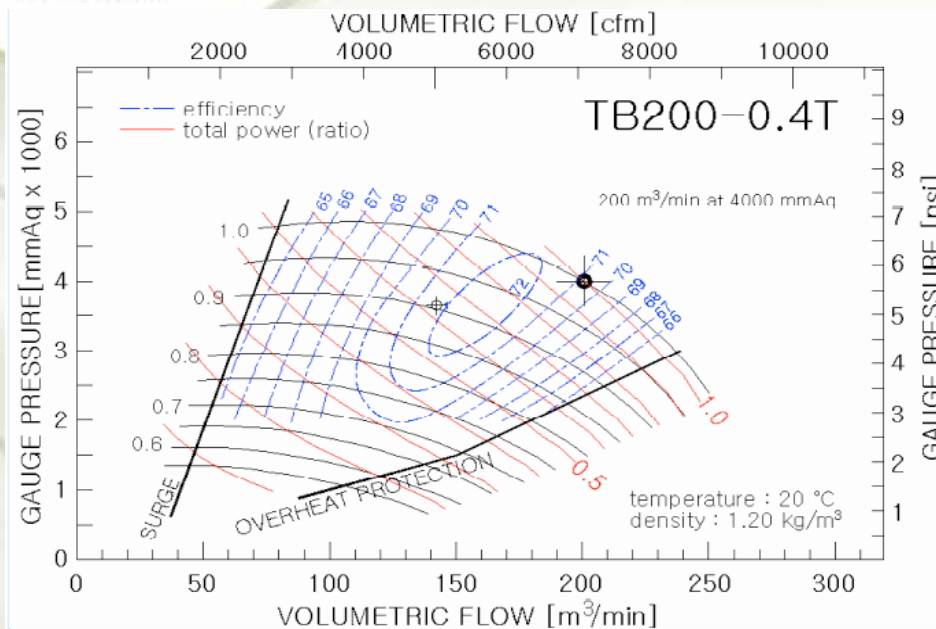


Actions:

- ◆ Research
  - ◆ Drawings
  - ◆ Manufacturer data
  - ◆ Maintenance/Ops
- ◆ Identify causes
- ◆ Design solutions
- ◆ Follow through

# Maximizing Efficiencies

Blowers for the mixed liquor channel



- ◆ Identify potential
- ◆ Take and manipulate data
- ◆ Present data to energy team
- ◆ Recommendation and data to project managers group or work order
- ◆ ~50kW or \$20,000 savings

# *Scheduled Projects*

## Methane Gas Pipe Replacement



- ✦ Construction Management
- ✦ Responding to contractor
- ✦ Coordinating KC side of things

Work Product

# *Scheduled Maintenance*

Blend Tank



- ◆ Replace mixers in blend tank
- ◆ Research
- ◆ Design
- ◆ Work Package
- ◆ Project Management

# *Pilot Project*

- ◆ Research
- ◆ Data Collection
- ◆ System Monitoring
- ◆ Sampling

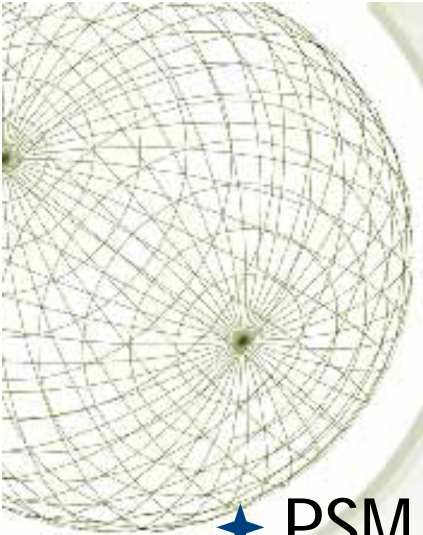




# *Engineering @ West Point*

- ◆ Research
- ◆ Identify
- ◆ Design
- ◆ Follow through

- ◆ Thanks to:
  - ◆ WTD the organization
  - ◆ Intern Coordinators
  - ◆ Belcher
  - ◆ Offices in the maintenance building
  - ◆ Admin, Maintenance, I/E, and Day Ops staff
  - ◆ All of WP

A decorative wireframe sphere is positioned in the top-left corner of the slide. It consists of a grid of intersecting lines forming a spherical shape, with a central point from which lines radiate outwards.

# *A work product*

- ◆ PSM

- ◆ Digester gas replacement methodology
- ◆ The Following slides



*PSM*

MPG 6" pipe replacement in North Control Pod

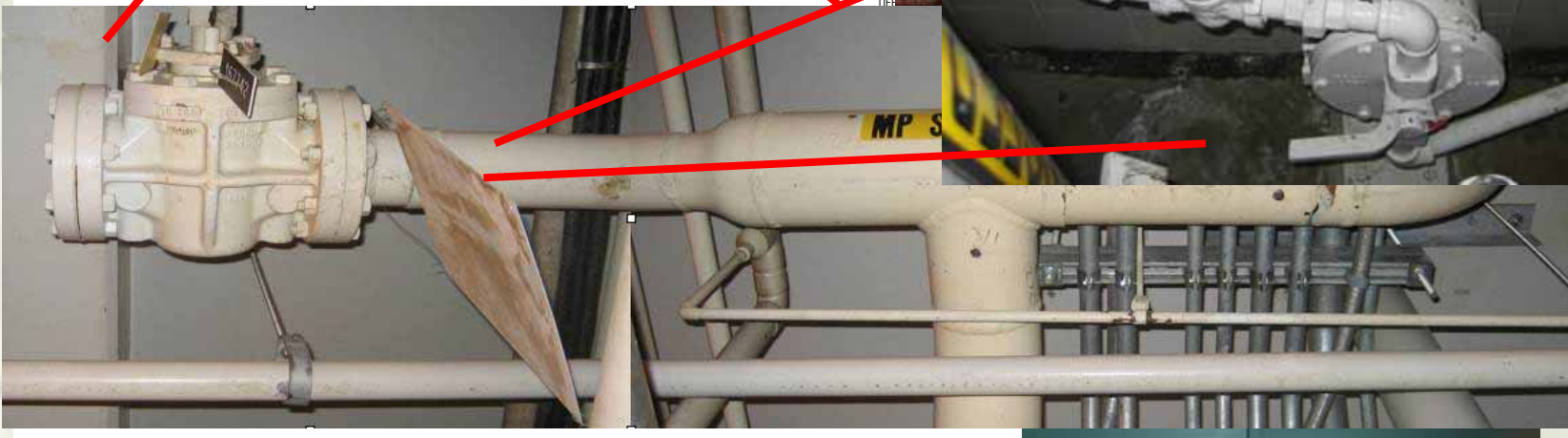


North Control Pod

# Walk through: Section of pipe to be removed

Pipe exterior control pod from hallway  
Wall penetration in control pod

Drip trap in control pod to be removed

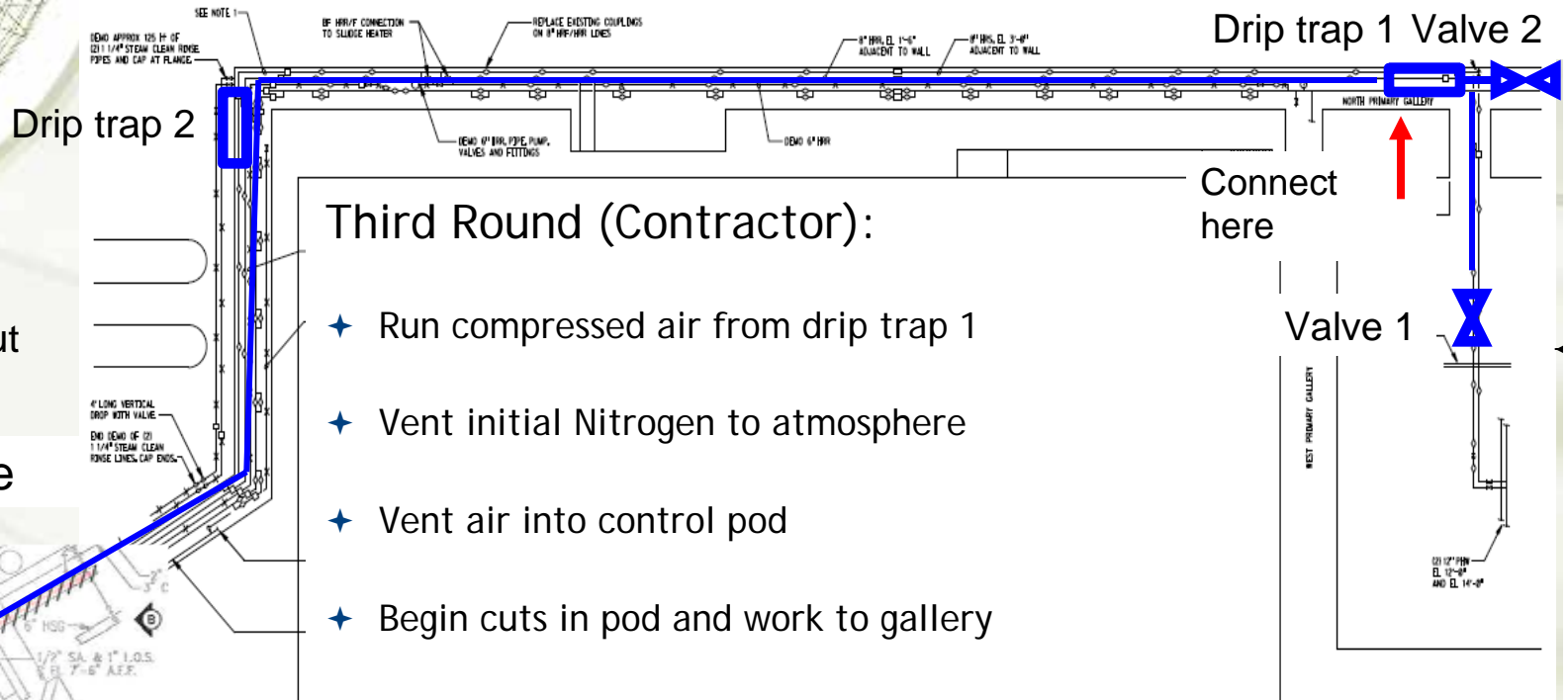
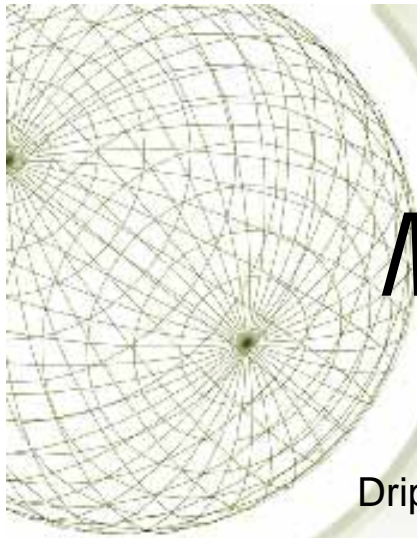


Drip trap line

# Walk Through: MPG in Gallery



# Method to neutralize pipe



## Third Round (Contractor):

- ✦ Run compressed air from drip trap 1
- ✦ Vent initial Nitrogen to atmosphere
- ✦ Vent air into control pod
- ✦ Begin cuts in pod and work to gallery

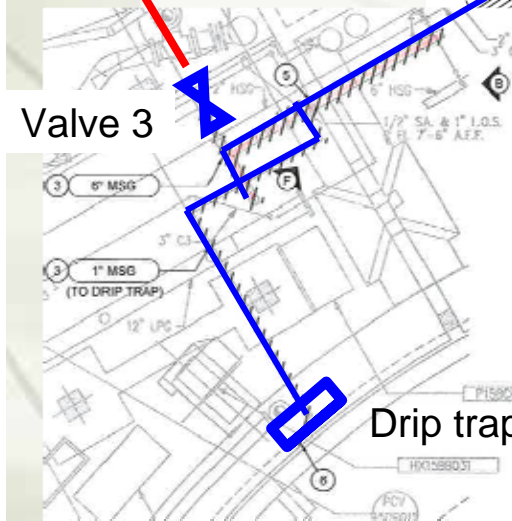
✦ THEN LEAVE FOR CONTRACTOR

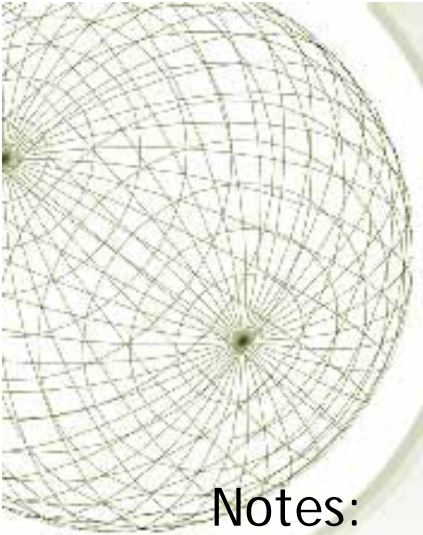
Methane forced out to atmosphere

Vent here

Valve 3

Drip trap 3





# *Notes and discussion*

## Notes:

- ★ EGG connection to MPG outside control pod door must be closed
- ★ Flood line with water until overflows vent
- ★ What are the effects of running compressed air through pipe?
  - ★ Will the air disturb or potentially cause solids inside to clog up?

## ★ Questions/Discussion?

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