Maintenance Equipment & Systems Assessment (MESA) Program

FESS Operations

Purpose

- To Provide Identification, Condition assessment, Validation & Notification of equipment and systems at or near the end of their service life
  - Budget Estimates For Landlords if available
  - Owner Awareness
  - =\ Consensus (Is FESS Ops Assessment)
- To Provide: Deferred Maintenance Reporting
  - Mission Filter
  - DOE/CAS Reporting

Process

- Identify & Notify
  - Landlord Owner
    - Options
      - Replacement
        - » Design
        - » Time Horizon
        - » Budgeting
      - Update / Rebuild
      - Take out of Service
      - Bridge Plan
        - » Equipment Rental
        - » Modify Demand to Meet Capacity

Criteria

- Irreparable
- Unmaintainable
  - Obsolete
- Extraordinary Cost
- Extraordinary Means
- Extraordinary Methods
- Unreliable
- Outside Design Capacity/Operation
- Unsafe
- Inefficient
- End of Service Life

Procedures

- 5106.00 Assessment Procedures
- Notification Process:
  - Log is Posted on FESS Web Page
  - Periodic Report To Owners
    - Building Managers
    - Division and Section Heads
- FESS Assessment Team:
  - Craft Supervisor
  - Line Management
  - Assessment Team
- Reports
  - Periodic (Annual if indicated)
  - CMMS
  - Deferred Maintenance
- CMMS
  - Track via EOL Work Orders

Roles

- Facility Landlord = Owner
  - Non Programmatic
    - FESS
      - EOL Notification
        - » PM & Corrective Work Continues
  - Programmatic
    - Non FESS Divisions & Sections
      - EOL Notification
        - » PM & Corrective Work Continues

Mitigation

- Possible Dispositions
  - GPP
  - SLI
  - Operating Expense
  - Hold
  - Evaluate On A Future Date

Industrial Cooling Water
&
Domestic Drinking Water

FESS End Of Life Findings & Recommendations

April 9th, 2003

ICW & DWS 2003 Assessment Summary

Summary:

- More of the Systems are Reaching End of Life
- Reliability and Uptime May become issues
- Repair Costs Are Diverting FESS Maintenance Budget away from routine and corrective maintenance services.

Condition Summary:

- Conditions are Typical for all underground water piping systems.
- Have Known Leaks we can not stop. (MSS/Rd A Transite Pipe)
- Pipe is corroding outside in.

14 " ICW Rd A & MSS 2-25-00

MP9 – 6” DWS (7-22-00)

Bolts Rusted Away/ heavy Pipe Corrosion

Pbar Chiller Water Sys. (6-98)

Entire Chilled Water Piping Replaced: Corrosion Failures

6 DWS WH WEST LOT (7-22-00)

Heavy exterior corrosion

Booster Road ICW (10-8-02)

Corrosion induced failure

CDF/CHL 14” ICW (2-19-03)

DWS-Village (2-24-03)

Cause: Poor Laying Conditions

System Summary (ICW)

PIPE SIZE	LENGTH
24”	1,800’
16”	1,200’
14”	20,730’
12”	6,375’
10”	7,125’
8”	13,850’
6”	15,600’
Total Pipe:	66,680’ (**12 miles**)

Total # Valves: 148

Total # Hydrants: 106

How Did This Happen?

- Initial Soil & Laying Conditions accelerated corrosion.

- Materials of Construction were not Optimum for site conditions (Concrete and Iron)

How Did This Happen?

- Galvanic Corrosion Unabated

- + ~30 years of service =

End Of Life Condition.

Current Strategy:

- Patch Breaks

- Improved Materials (HDPE/PVC) *New Only*
- UIP Replacements – Program Complete
- GPP Replacements – Out years