Class Change Management

GITA Oil & Gas 2011
Class Change Management

• Industry Procedures for Class Location Determination
• Analyzing Changes
• Change Management Process
Industry Procedures for Class Location Determination
Industry Procedures for Class Location Determination

• Sliding Mile
  – Well defined
  – Consistent Across the Industry
Industry Procedures for Class Location Determination

• Clustering
  – Leaves more room for interpretation
  – Definition and application varies between companies
Industry Procedures for Class Location Determination

• Components of Clustering
  – Identifying Clusters
  – Distance Between Structures
    • Perpendicular vs Arc
  – Minimum Gap
  – De-Rating
  – Cluster Limits
    • Perpendicular Offset
    • Arc Intersection
    • Cluster Expansion
Industry Procedures for Class Location Determination

• Identifying Clusters
Industry Procedures for Class Location Determination

• Perpendicular Distance Between Structures
Industry Procedures for Class Location Determination

• Arc Distance between structures
Industry Procedures for Class Location Determination

• Minimum Gap
Industry Procedures for Class Location Determination

• De-Rating/Orphan Class Handling
  – Number of structures in cluster
  – Length of clustered class area
  – Primary/Secondary clusters

• Setting Cluster Limits
  – Perpendicular Offset
  – Arc Intersection
  – Cluster Expansion
Primary Cluster De-Rating Method

Primary Cluster extended to incorporate secondary cluster.
Primary Cluster De-Rating Method
Perpendicular Offset Cluster Limits
Cluster Expansion
Arc Intersection Limits
Class 4

• Class 4
  – Prevalence is very open to interpretation
    • Prevalent by percentage
    • Prevalent by Number
    • Prevalent by Mile
    • All 4+ Story Locations
Analyzing Class Changes
Analyzing Changes

• Reasons for Change
  – Change in population density - Usually the first assumed reason for a change
    • New structures added
    • Structure locations refined/corrected
    • Structure attributes (occupancy, number of units)
Analyzing Changes

• Reasons for Change
  – Change in population density – Ways to identify
    • Modify display to show structures added/modified since last class run date
    • Overlay proposed and existing class areas
    • Review Controlling Structures
    • Identify structures 1 mile upstream and 1 mile downstream from change area
  • Structure stationing
    – Perpendicular
    – Arc Intersections
Proposed Changes
Proposed Changes

Structure Stationing Information

- **Object ID**: 263362
- **Event ID**: {34C1A03A-5281-4722-456B-8230DC1C04ED}
- **From Perpendicular Station**: {VB-100} [1533+95.05 <66573.05>(495372.3909,1015066.3025)
- **To Perpendicular Station**: {VB-100} [1533+95.05 <66573.05>(495372.3909,1015066.3025)
- **Perpendicular Offset**: 206.24

- **Arc 560.00' From Station**: {VB-100} [1524+98.08 <65576.06>(4995059.6166,1015107.5796)
- **Arc 560.00' To Station**: {VB-110} [1540+24.17 <87265.17>(4953091.4279,1015281.5788)
- **Arc 300.00' From Station**: {VB-100} [1531+44.22 <86322.22>(4995016.4114,1014499.2597)
- **Arc 300.00' To Station**: {VB-100} [1536+47.48 <66625.48>(4995577.4664,1015141.5223)
- **Arc 566.00' From Station**: {VB-100} [1526+34.04 <85512.04>(4945766.2712,1015075.4139)
- **Arc 566.00' To Station**: {VB-100} [1548+05.15 <87683.15>(4950368.0816,1015248.3212)

- **Intended for human occupancy?**: YES
- **Structure type**: MULTIPLE DWELLING UNIT BUILDING
- **Number of units**: 6
- **Number of stories**: 1
- **Occupied?**: YES
- **Number of occupants**: 1
- **Days/week**: 0
- **Weeks/year**: 0
- **Limited mobility?**: NO
- **Discovery date**: Friday, September 23, 2011
- **Retired date**: N/A
Proposed Changes

Structure Up/Down-stream Counts

Line: VB - VBS1

12 units downstream, 9 units upstream
Proposed Changes
Proposed Changes

Structure Up/Down-stream Counts

Line VB - VBS1

5 units downstream, 9 units upstream
Proposed Changes
Proposed Changes
Proposed Changes

Structure Up/Down-stream Counts

Line: VB - VBST

3 units downstream, 11 units upstream
Proposed Changes

Structure Up/Down-stream Counts

Line: VB - VBS1

2 units downstream, 12 units upstream
Proposed Changes

Structure Stationing Distance

Line: VB - VBS1

4214.452 ft
Analyzing Changes

• Reasons for Change
  – Alignment
    • Re-Routes & Pipe Replacements
    • Data Refinement
    • Stationing Changes
Analyzing Changes

• Reasons for Change
  – Alignment - Tools to assist in identifying
    • Partially process of elimination.
    • Overlay proposed classes on existing
    • Review of PI added and modification dates
Analyzing Changes

• Code or Algorithm Change
  – Probably hardest to identify
  – If at all possible best to isolate these changes from other causes
  – A thorough understanding of how the algorithms differ will assist with identifying these types of changes.
  – Ability to view old results overlaid with new ones
Change Management
Change Management

• Change Management Workflow Application
  – Picks up after change identification
  – Define & Assign Responsibility
  – Document Actions, Decisions, and Reasoning
  – Consolidate Relative Data
  – Automate Notices and Email Reminders
Change Management Workflow
Change Management

- Task Groups
  - Data Review
Change Management

• Task Groups
  – Data Review
  – Required Study
Change Management

• Task Groups
  – Data Review
  – Required Study
  – Mitigation
Change Management

• Data Review
  – Verify input data contributing to change
  – Analyze and Identify cause of change
  – Verify MAOP, pipe segment, and other data is available and correct for the area of the change
  – Make recommendation on whether change should be accepted or rejected
Change Management

• Required Study (49 CFR 192.609)
  – Review by several different groups/departments
  – Determine if pipe is commensurate for the proposed class change
  – Propose mitigation options
Change Management

• Mitigation (192.611)
  – Mitigation action
  – Defined Mitigation Tracks