Shell Pipeline Company LP

Gulf of Mexico Region

Making the Connection

- Release Prevention -

For a Clean, Safe Environment
Release Prevention Is a Key Element of System Reliability and Safety

Consequences of a release…

- Employee and public safety
- Environmental impact
- System downtime and missed delivery schedules
- Impact on producers/ customers
- Costs of clean up and government fines
- Shell’s corporate image with the industry, public, and regulators
Releases Are Costly to SPLC and To Our Customers

Example: Offshore Release

El 331 Cracked Weld 1 gallon release

• Release Costs Analysis
  – Material and labor $7.5M
  – Helicopter costs $7.2M
  – Lost Tariff $7.0M
  – Lost oil production $111.7M
  – Lost gas production $99.4M
  – Other costs and fines $5.0M
  – Total $237.82M

Example: Onshore Releases

• Release Cost Analysis for 7 releases (to date)
  *note: only cost of cleanup, no fines, downtime, repair cost, or administrative cost

  Total Amount Released: 11.75 bbls
  Total Cost of Releases: $124.04M
  Total Cost per Barrel: $10.6M
  Total Contract Labor: $68.24M
  Total Equilon Labor: $4.8M
  Total Cleanup Equipment: $51M

* These are actual cost incurred +/- 5%
Development and Implementation of the Gulf of Mexico Release Prevention Process

- **Process Development**
  - Release Prevention Design Team
  - Evaluated past releases
  - Preventable
  - Conducted field studies
  - Developed Release Prevention guidelines
  - Developed RP CD-ROM
  - Developed formal training program

- **Process Implementation**
  - Train region employees/contractors
  - Documented Training
  - Data Reporting System
  - Designated area “Leaders”
  - Provide a new awareness and behavior change

- **Measurement, Tracking, and Rewards**
  - Monthly tracking of new data
  - Recognition Program
  - Maintain and use SAP for process discipline
  - Evaluate Release Performance

- **Process Enhancement**
  - Provide new engineering/operations guidelines and training
  - Incorporate RCA findings in future awareness
  - Incorporate into SAP
  - Implement company wide
  - Keep process evergreen

March - 97

Aug. 97 - Ongoing

‘00 - ‘02
Release Prevention
Measurement, Tracking, and Reporting

Personnel/Inspection Team -
Captures opportunity on RP checklist/field form

RP Checklist/ Form __ R.P. __Safety

RP Item entered into database

SAP / Database

Over 8700 RP’s Identified
Over 92 % Complete

Notifications reviewed for:
- open items
- new findings
- design ideas

Repair is made
And notification is closed

Notification Assigned/
reviewed

- To identify “copy cat leaks” or potentials
- Define/Refine new training, guidelines, awareness and engineering practices

Monthly RP progress report to Managers
Release Prevention Requires a Mindset Change

Traditional Approach

• “Pipelines leak”
• Best “Responders”
• Reactive Mode
• If it ain’t broke don’t fix it
• More is better

Release Prevention Mindset

• “Leaks can be Prevented”
• Best “Preventers”
• Proactive Mode
• If it ain’t broke, figure out how it can break, then correct it
• “Less is more”

• Creates a sense of Ownership, Pride, and Empowerment
Key Elements of Release Prevention Success

1. Look back and learn #7
2. Process Discipline #2
3. Release Prevention Tools #3
4. Skill Development and Training #4
5. Measurement, Tracking, and Reporting #5
6. Rewarding Successes #6
7. Active, Visible, Committed Leadership #1

Release Prevention Success
Before Release Prevention

Potential Release Items

Large Release

Small Releases

Identify and Correct Potential Release Items

Decline in Small Releases

* Reduced Lg. Release Risk

After Release Prevention
Basic Release Prevention Techniques...
How to prevent a release before it happens.

• Evaluate your spill record and categorize each release
• Gather as much past data as possible pertaining to the cause or circumstance of each release
• Group and trend that data
• Form a checklist from that data, and perform a random field inspection looking for similar: installations, equipment, operation, etc.
• Perform Training: Review the Past… Evaluate in the Present… Apply it to the Future…
Other Tips and Facts…

• The 3 major causes of releases:
  Equipment Failure
  Operator Error
  3rd Party Damage

• Remember the 3 P’s every release comes from
  Product + Pressure + Path = Release….Eliminate all possible paths

Environmental Performance Results –

  • Since 1997 - Avg. 15% reduction in Releases
  • 2002 Results – GOM Shipped 848,974,728 bbls.
    Released – 86.79 bbls. = .102 ppm
    Recovered – est. 78 bbls.

• Promote “Call Before You Dig” and educate the community in which you operate
The Future of Release Prevention

• Provide awareness of RP to regulators and public
• Incorporate release prevention concepts into design of all new facilities
• Apply new technologies to release prevention opportunities
• Incorporate release prevention guidelines into management of change
• Enhance the SPLC/ Shell Leadership Team for release prevention – Community of practice
• Release prevention must be implemented through the pipeline/ hydrocarbon industry
• Keep process evergreen and RP Awareness High
Our Goal: By being the industry standard setter, our name will become Synonymous with Release Prevention, in the eyes of the Public, the Government, and the Industry!

Shell Pipeline Company LP Equals Release Prevention
Gulf of Mexico Region

GOALS EXPECTATIONS

• NO Spills
• NO Injuries
• NO Downtime

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Release Prevention CD.lnk
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