Directed Inspection & Maintenance (D I & M) to Reduce Methane Emissions From Natural Gas Processing

12th Annual Implementation Workshop
October 24-26, 2005
Houston, Texas
D I & M at Gas Processing Plants

★ Dynegy’s experience w/ D, I & M Program
★ Dynegy was involved with both Phase I & Phase II studies.
★ Dynegy sites under study- Two gas plants & two compressor stations
Phase II Study

★ Eunice Gas Plant – Eunice, NM
★ Eunice North & South Comp. Stns.
★ Chico Gas Plant – Chico, TX
★ East Chico & Sitz Comp. Stns.
Eunice Gas Plant

- Constructed in 1948
- Sour Gas Processing Plant
- Part of the Facility under LDAR Program
- Number of components monitored
- Number of leaks found
Eunice Plant
Eunice Plant – Engine Room
Eunice Plant
Eunice Compressor Stations

★ Eunice North Comp. Stn.
★ Number of components monitored vs. leaks found

★ Eunice South Comp. Stn
★ Number of components monitored vs. leaks found
Chico Gas Plant

★ Constructed in 1966
★ Sweet Gas Processing Plant
★ Part of the Facility under LDAR Program
★ Number of components monitored
★ Number of leaks found
Chico Plant
Chico Plant
Chico area Compressor Stations

★ East Chico Compressor Station
★ Number of components monitored vs. leaks found
★ Sitz Compressor Station
★ Number of components monitored vs. leaks found
Sitz Compressor Station
Sitz Compressor Station
D I & M program- Identification of leaks

★ Conventional methods such as sniffing, soaping and ultrasonic etc.

★ Optical Infrared Remote Leak Detection method
Infrared LSI Camera
<table>
<thead>
<tr>
<th>Feature</th>
<th>Conventional</th>
<th>Remote Sensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>2,400 comp./day</td>
<td>2,300 comp./hr</td>
</tr>
<tr>
<td>Mobility</td>
<td>most areas</td>
<td>difficult in congest.</td>
</tr>
<tr>
<td></td>
<td>elevated</td>
<td>difficult</td>
</tr>
<tr>
<td>Cost</td>
<td>$1200/ day</td>
<td>$ 4000/ day</td>
</tr>
<tr>
<td>Safety</td>
<td>less</td>
<td>more</td>
</tr>
<tr>
<td></td>
<td>proximity</td>
<td>distance</td>
</tr>
</tbody>
</table>
High Volume Sampler
Future Plans

- Fix all the leaks that were identified thru the survey
- Develop & Implement a maintenance program on a more frequent basis using Leak survey study
- Dynegy is evaluating to apply the optical remote sensing method on a more frequent basis.
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