Longhorn Partners Pipeline, L. P.

Summary Report of 2007 Operational Reliability Assessment (ORA) Developments

This report summarizes the developments relating to the 2007 ORA, and is shared with the public in accordance with the Longhorn Mitigation Plan (LMP) Section 3.2.14, *"Longhorn's Continuing Commitment."* Keifner and Associates, Inc. (KAI), the ORA Contractor selected by Longhorn Partners Pipeline, L. P. (Longhorn), and approved by the Department of Transportation, PHMSA/Office of Pipeline Safety (OPS), performed the annual assessment for 2007 of the operational reliability of the Longhorn pipeline system.

The ORA Contractor analyzed the data collected by the Longhorn Pipeline System Integrity Plan (LPSIP) activities and integrity inspections conducted in 2007, evaluated the analytical results, and provided recommendations in its report to preserve the long term integrity of the Longhorn pipeline system. The ORA Report specifically addressed the following subjects:

- Threats and Potential Threats to the Pipeline
    - Pressure-Cycle-Induced Fatigue
    - Corrosion
    - Laminations and Hydrogen Blisters
    - Earth Movement and Water Forces
    - Third-Party Damage
    - Stress-Corrosion Cracking
    - Facilities Other than Line Pipe
- Technical Assessment of the Effectiveness of the LPSIP

The analyses of operational pressure cycles to date show the intensity of pressure cycles is relatively nonaggressive in relation to benchmarks established on the basis of typical liquid petroleum products and crude oil pipelines. If this continues to be the mode of operation, integrity reassessment from the standpoint of electric-resistance weld (ERW) seam anomalies will not be necessary until the year 2015. This represents a 4 year decrease from the calculation performed for the 2006 annual report caused by more cycles on the pipeline in 2007 than in previous years.

The commitment to run a transverse field magnetic flux inspection (TFI) inspection tool to detect ERW seam anomalies within the first 3 years after start up was met, and it will be incorporated into the ORA analysis in 2008 when excavations are completed and results are compared to the TFI inspections.

The commitment to run a high-resolution magnetic flux leakage (HRMFL) inspection in the existing 1950 pipeline (Valve J-1 to Crane) was completed in February 2007. The remediation associated with the HRMFL inspections was completed in 2007 with two sections requiring additional assessments. The first additional assessment was a stray current survey at MP 351 that was necessary to identify the cause and extent of stray

current induced corrosion. The second additional assessment was an alternating current (AC) induced corrosion mitigation study needed to determine the extent of corrosion within the first nine miles where the new 1998 pipeline extension lies in a high-voltage electric-power transmission-corridor.

HRMFL inspections were also performed in the Crane to Odessa lateral and the four laterals between El Paso Terminal and Diamond Junction. An attempt was made to inspect the 18-inch line pipe between Crane and El Paso. The inspection from Crane to El Paso was not completely successful because of sensor damage and sensor liftoff. However, an 84-mile segment of data, which contained all of the high consequence areas (HCAs) between Crane and Cottonwood, was analyzed because it contained some useable data. Forty-two miles of these 84 miles was found to contain internal corrosion that prompted a limited, voluntary, pressure reduction until the pipe could be replaced.

The condition of any laminations and blisters that may still exist in the 1950 pipe material will be evaluated within the first 5 years after start up (no later than January 27, 2010) using an ultrasonic (UT) wall thickness ILI tool. In the meantime, no degradation of laminations into blisters or growth of existing blisters is expected because sour crude oil, the source of hydrogen that causes blisters, is no longer present in the pipeline.

From the standpoint of earth movement, the primary integrity concerns are soil erosion and scouring from floods and the ground movement from aseismic faults at specific points along the pipeline. Scour surveys on the Colorado River and its tributary Pin Oak Creek show no evidence of soil erosion or scouring. No other river crossing inspections were required in 2007. Periodic measurements from 2004 through 2007 show no evidence of any measurable movement of any of the monitored faults. Therefore, no remedial action has been recommended.

Longhorn's third-party damage (TPD) prevention program far exceeds the minimum requirements of federal pipeline safety regulations, and it represents a model program for the industry. The aerial surveillance and ground patrol frequencies exceeded the frequencies set forth in the LMP. In our opinion, this is a major contributing reason why no hits occurred on the pipeline in 2007 in spite of the fact that 16,224 one-call notifications were received by the operator of the pipeline.

No occurrence of stress-corrosion cracking (SCC) has ever been recorded on the pipeline, including the 449 miles of the existing 1950 pipeline. In accordance with the ORA Process Manual, Longhorn was required to perform investigative digs each year for three years in areas susceptible to SCC. The program started in 2005 and concluded in 2007 with a final dig at MP 216. No SCC was found at any of the sites. Nevertheless, Longhorn has in place a protocol to look for possible occurrences of this phenomenon during other examinations of the pipeline. Longhorn will continue to carry out checks as part of the normal dig program by performing an SCC examination program including magnetic particle testing at each dig site.

From the standpoint of facilities data acquired through 2007, one can conclude that active non-pipe facilities served their purpose with no adverse impact on public safety and no significant impact on the environment. The incident reported to the DOT did occur in a facility; however, there was no risk to public safety and the spill was contained on the property. A formalized computer based facility preventive maintenance scheduling program was implemented in 2007, which is focused on equipment inspection. After a review of this program, the ORA Contractor recommended a more proactive approach to address facilities piping in line with current leading trends in the industry. This includes the implementation of a pilot program to establish baseline conditions for representative facilities through the application of current inspection technologies, and integrating the data with environmental data acquired through the use of standard methodologies.

Only one incident occurred that was DOT-reportable in 2007. This was caused by improper installation during construction of a Swagelok® fitting on a bearing coolant line at Galena Park Station. The stainless steel tubing cracked and leaked, causing a spill.

The technical assessment of the LPSIP indicates that Longhorn is achieving the goal of the LPSIP, namely, to prevent incidents that would threaten human health or safety or cause environmental harm. In terms of activity measures, Longhorn exceeded the goals of aerial surveillance and ground patrol frequency. In addition, public-awareness meetings were held, an equipment rental/farm store public education program was conducted, and right-of-way markers and signs were repaired or replaced. From the standpoint of deterioration measures, a number of metal-loss anomalies were discovered and repaired. In terms of failures, there was only one incident, a release at a facility mentioned above, and there were no known third-party hits.

Technical Assessment of LPSIP Effectiveness

The LPSIP contains twelve process elements. Below each of these elements is listed with an assessment of the effectiveness. There are seven elements closely related to the seven threats directly addressed by the ORAPM, which are summarized below, together with the remaining five elements taken from the 2007 LPSIP Self-Audit Report.

Longhorn Corrosion Management Plan

The corrosion management plan has been effective and identified three areas for closer examination:

AC induced corrosion was observed in the first nine miles where the pipeline shares a corridor with multiple pipelines and multiple high voltage power lines. An AC corrosion study was started in November 2007 that investigated the magnitude of AC densities present along the 9 mile section. The program is still ongoing with field testing complete and final stray current fault values being processed by the corresponding power company. Appropriate remedial measures will be implemented at the end of this program.

Following replacement of 4,000 feet of pipe, a stray current survey was undertaken in 2008 at MP 351. Remediation of the stray current will occur in 2008.

Unexpected internal corrosion between Crane and El Paso was discovered during the May 2007 HRMFL tool run. The internal metal loss prompted Longhorn to take a limited voluntary pressure reduction until the 42-mile section could be replaced. Preliminary data suggests that microbiologically influenced corrosion (MIC) played a role in causing or accelerating the internal damage. Longhorn will implement a program to monitor the 1998 pipe material that will remain in service and determine the cause of the corrosion, whether it is predominantly electrochemical or microbial in origin, and whether the corrosion is continuing. Longhorn expects that appropriate remedial actions will be recommended by the ORA Contractor in the 2008 ORA.

In-Line-Inspection and Rehabilitation Program

Even with unexpected corrosion areas, the ORA Contractor concluded that Longhorn has made significant advances inspecting and remediating corrosion with the completed ILI runs to date. The ORA Contractor emphasized that Longhorn should continue to use ILI to diagnose and initiate mitigation of corrosion, guided by the probability of exceedance (POE) analysis and supplemental measurements when needed, as in-line inspection is one of the most effective ways to monitor corrosion on a pipeline.

Key Risk Areas Identification and Assessment

No new or previously unrecognized risks were reported to have been identified in 2007 according to the Annual LPSIP Self-Audit Report.

Damage Prevention Program

The absence of reportable incidents involving mainline pipe and the absence of third party contact with the pipe suggests that Longhorn's proactive damage prevention and maintenance plans (including the aerial surveillance frequency) have been effective and are functioning as intended.

Encroachment Procedures

The absence of reportable incidents involving mainline pipe and the absence of third party damage suggest the program has been effective. The LPSIP Self-Audit discussed recommendations for improvement of the Encroachment process that were identified in the 2007 Third Party Damage Prevention Program Annual Assessment. In addition, the self-audit identified the need to update alignment sheets in a more timely manner.

Incident Investigation Program

One DOT reportable incident occurred at Galena Park. The operator of the pipeline is now requiring all applications of this type to use heavier wall tubing. This recommendation was

made because of similar incidents on other non-Longhorn operated assets. The ORA Contractor finds reportable incidents are being effectively investigated.

Management of Change

The LPSIP Self-Audit lists 68 Management of Change Requests were initiated in 2007. Of these 41 were closed by the end of the year while 27 still remained open.

Depth of Cover Program

A Depth of Cover (DOC) survey was carried out in 2007 from Galena Park to Crane. The Third Party Damage Prevention Program Annual Assessment identified eleven (11) new exposures, 5 were scheduled to be repaired in Q1 2008, 4 were risk assessed and classified as "monitor" and 2 are undergoing risk assessment.

We find this program effective at identifying shallow pipe that may have increased likelihood of outside force damage. A recommendation in the TPD Prevention Program Annual Assessment was to improve the process for incorporating new DOC mitigations into Landowner agreements.

Fatigue Analysis and Monitoring Program

The 2007 fatigue analysis was effective at monitoring the potential of fatigue cracking failures from pressure cycle induced growth. In 2008 the analysis should incorporate results from the TFI tool runs.

Scenario Based Risk Mitigation Analysis (SBRMA)

The LPSIP Self-Audit discusses the 2006 SBRMA and the timing for the 2007 SBRMA and identified no issues.

Incorrect Operations Mitigation

The LPSIP Self-Audit notes a compliance management system (CMS) was implemented in 2007 which schedules and tracks all non-corrosion preventative maintenance activities. The year-end 2007 CMS exception report indicated 1 overdue operator SIP task (related to measurement) and no overdue LPSIP tasks. Areas of concern are properly documenting training for required job skills and making certain the CMS software identifies and distinguishes tasks required by the LMP, regulation, etc.

System Integrity Plan Scorecarding and Performance Metrics Plan

The LPSIP Self-Audit identified no issues with the two scorecards used to process and distribute information on a quarterly and annual basis: the Operations Scorecard, and the Mitigation Plan Scorecarding & Performance Metrics.

Recommended Intervention Measures and Timing

Pressure-Cycle-Induced Fatigue

For the threat of pressure-cycle-induced fatigue, a reassessment in the year 2015 was calculated based on the fatigue analysis and using the previous hydrostatic test pressure levels. This reassessment interval will be recalculated in 2008 as the final reports and excavations for the TFI tool run become available.

Corrosion

For the threat of corrosion, a 5 year reassessment interval was calculated for the pipeline segments in the existing pipeline. Reassessment intervals greater than 5 years were calculated for the Crane to Odessa lateral and the 4 laterals between El Paso Terminal and Diamond Junction.

Laminations and Hydrogen Blisters

It is possible some lamination or blisters may still exist given the history of the line. However, the pressure tests in 2000 and 2002 eliminated any blisters close to failure and because the line no longer transports sour crude, we do not expect new blisters to form in the future. The UT tool inspection scheduled within 5 years of startup will verify this and allow the operator of the pipeline to remediate any remaining blisters. The ORA Contractor saw no need to lessen this interval.

Earth Movement and Water Forces

The earth-movement analysis continued to show no measurable movement in 2007 on any of the four aseismic faults under observation in Harris County. Storm water flooding showed no signs of erosion or scour damage at stream crossings. The ORA Contractor concluded that fault monitoring can be increased to every year, from every six months, based on the lack of movement for 3.5 years. Stream crossing monitoring should continue every five years and after storm events for shallow stream crossings. The scour inspection for the Colorado River and Pin Oak Creek should continue biannually and after every second standard flood as recommended in the Environmental Assessment.

Third-Party Damage

For the threat of TPD, Longhorn should continue to carry out ROW surveillance and public-awareness activities that have continued to be successful in 2007. The smart geometry (deformation) tool run with the HRMFL was completed in 2007 within the required 3 years of start-up. An additional deformation tool was run separate of the TFI tool, both completed in 2007, with excavations completed in 2008 which will be evaluated and reported in the ORA for the 2008 operating year. A third examination for TPD will be performed in 2009 with the UT tool which will be within 3 years of the second run.

Stress-Corrosion Cracking

As no evidence of SCC has been detected, it is not necessary to recommend an intervention measure. Longhorn should continue to monitor for this threat through the current method, which consists of looking for evidence of SCC when maintenance excavations are performed.

Threats to Facilities Other than Line Pipe

Longhorn should continue to carry out inspections and maintenance of facilities with the same diligence and frequency. The ORA Contractor recommended that Longhorn implement an additional piece of its' facilities integrity management program, processes, and procedures, addressing facilities piping as described above.

A formal report of the ORA has been submitted to the OPS. As provided by the LMP, OPS will determine whether or not it will approve the recommendations of the ORA Contractor. Upon the approval by OPS, Longhorn will implement the recommendations of the ORA Contractor.