



A Rockwell Automation Company

Foothills Pipe Lines Ltd. Year 2000 Testing Assistance

The Client:

Foothills Pipe Lines Ltd. is a major Canadian natural gas transmission company which delivers approximately one third of all Canadian gas exports to the United States. The Foothills Pipe Line begins just south of Caroline, Alberta. The east leg continues southeast through Alberta and Saskatchewan to Monchy Saskatchewan where it ties to the

Northern Border Pipeline Company. The east leg contains 7 compressor stations, and the west leg begins just south of Caroline, Alberta, and continues southwest through Alberta and British Columbia to Kingsgate, British Columbia, where it ties to Pacific Gas Transmissions.

The Requirement:

With the advancing millennium, Foothills Pipelines needed to ensure that their facilities would operate in a safe and effective manner in the year 2000, and beyond. This was to

be accomplished by ensuring all system facilities were Y2K compliant.

The Design Solution:

An independent engineering firm completed the audit phase of the Y2K process, as well as the initial Y2K compliance assessment. Hinz was contracted to review the audit and follow-up the Y2K process to completion.

Audit Phase

Each of the individual facilities, (8 compressor station, 2 meter stations, 1 decompression/recompression facility, field office location) were re-audited to ensure completeness of the original audit phase. All added equipment was appended to the existing audit database.

Assessment Phase

Upon initial project start-up, the complete Y2K assessment was scrutinized to verify completeness. All errors or omissions were noted and corrected. All of the provided manufacturer's compliance letters were reviewed and then re-verified with the vendor to ensure that there had been no changes in compliance status. The complete equipment inventory was run through a client-created risk matrix to determine the proper path of remediation.

Testing Phase

All high risk equipment was tested to ensure that it was Y2K compliant. This included such equipment as GE 90-70 and 90-30 PLCs, Human Machine Interfaces (HMIs), all facility personal computers, fire and gas detection equipment, and Entronic fuel and surge controllers. Any equipment that was found to be high risk and compliant, but unable to test (i.e. real time/date not readily available), had the manuals thoroughly reviewed to ensure there was no real time/date functionality. All PLC applications and custom software applications were also reviewed to ensure there were no time/date problems.

Remediation Phase

All systems which were found to be not compliant and of high risk were analyzed to determine the best path of remediation. The majority of the systems were found to have firmware or software upgrades available. These upgrades were procured through the purchasing departments. During scheduled downtimes, the equipment upgrades were installed and tested. Some upgrades installed were:

Bently Nevada	Serial Interface Monitor	Firmware Upgrade
Intellution Fx32	Human Machine Interface	Software Upgrade
MS Windows 3.11	Operating System	Software Patch
Entronic Controls	Fuel/Surge Control System	Firmware/Software Upgrade
Danial Industries Inc.	Gaas Chromatograph	Firmware Upgrade
Barton Instruments	1130 Scanner Fbw Computer	Firmware Upgrade

Action plans and workarounds were established for other equipment that was not compliant and unable or unfeasible to be upgraded.

Clean Management

Hinz interfaced with purchasing department to ensure Y2K compliant equipment is continuing to be purchased.

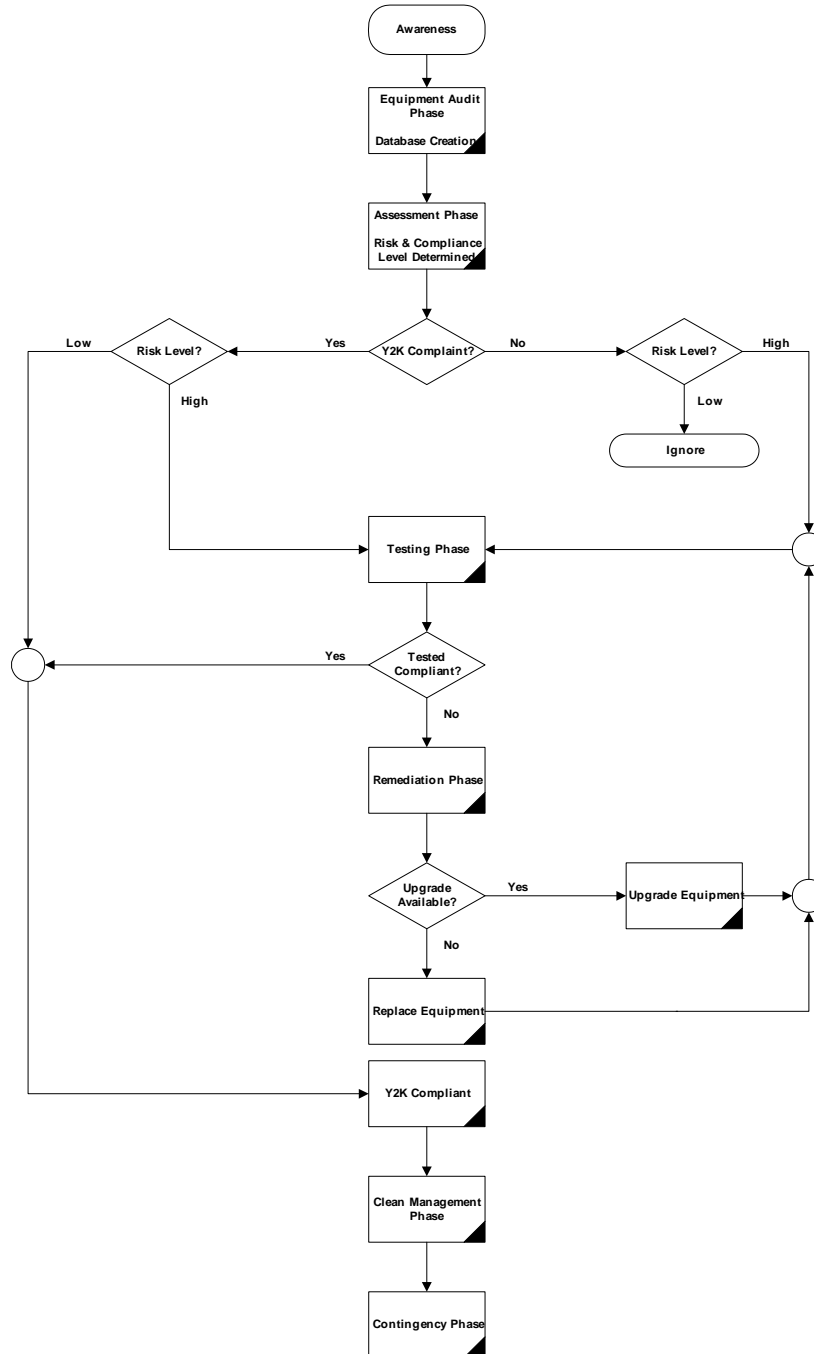
Other Services Offered

Hinz represented the client on the IJE (Industry Joint Effort) Committee. The IJE Committee is comprised of major petroleum producers and pipeline companies. The group meets as an open airing forum for Y2K related issues. Duties include attending various meetings and acting as the chairman when hosting the meeting.



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For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com