



A Rockwell Automation Company

Alyeska Pipeline Services Company TAPS SR – Historical and Statistical

The Client:

Alyeska Pipeline Services Company (APSC) owns and operates the Trans Alaska Pipeline System (TAPS), a 48 inch sweet crude pipeline that stretches from Prudhoe Bay to Valdez terminal, over 800 miles in all. TAPS has operated since 1979 and shipped over 15 billion barrels of oil.

In 2003 APSC started the process of redesigning TAPS

to operate more efficiently with the reduced flows from the slowly depleting oil fields of the North Slope. This project, dubbed “Strategic Reconfiguration Project” included the renewal of four pumping facilities and a pressure relief station.

The Requirement:

In 2002 HinZ joined with a consortium of other engineering firms to conduct Conceptual Engineering in which HinZ provided input for instrumentation, controls and retrofit electrical for a pipeline reconfiguration project. The following year marked the start of the Preliminary Engineering activities. Then Transition Engineering occurred for five months while project funding was sought. In the spring of 2004 Detailed Design Engineering began in earnest.

The requirement of HinZ was to assemble an engineering team to prepare Detailed Designs for

construction of four pump station upgrades on TAPS and the relief station. This includes a Safety Integrity Pipeline Protection System (SIPPS) control system and communications. HinZ conducted the Detailed Engineering effort as a sub to the EPC. This involved coordination with pipeline owners, regulators and various stakeholders. Alyeska provided embedded engineers to support the design on rotations from Alaska.

The Design Solution:

For the Detailed Engineering of this project HinZ mustered a design team for electrical, instrumentation and control centered in Edmonton and co-located with the EPC’s offices a portion of the team. At the peak of the project there were over 200 persons assigned through the EPC, 70 of which were HinZ personnel.

The engineering scope included the low voltage power systems of all existing facilities at all pump stations, safety systems at all stations and Remote Gate Valve (RGV) sites, and line wide communications systems. Engineering support systems for the project were also provided by HinZ for project management, procurement, document control, clerical and administration. The HinZ engineering team conformed to EPC and Alyeska standards, procedures and quality requirements.

The HinZ electrical team provided the design for low voltage power systems, generators, distribution, coordination, motor control centers, tray and cable

systems, specifications and procurements support.

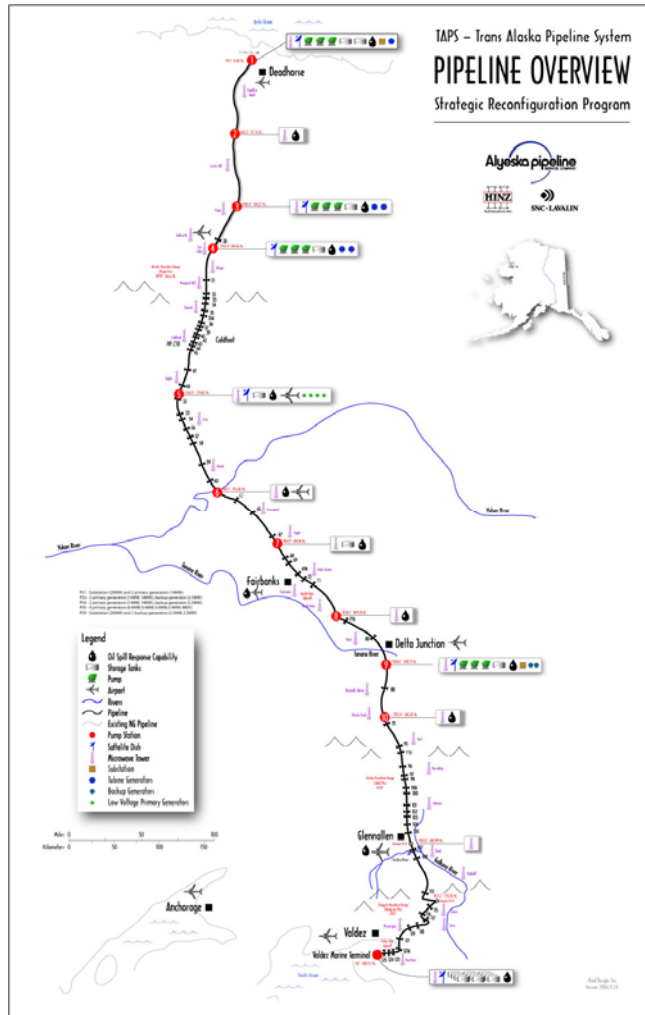
The HinZ instrumentation team provided the project instrument index and data base (InTools), fire and gas detection system design requirements, specification and procurement support.

The HinZ control system team provided design and fabricator design supervision for control panels, unit control programming, station control programming, SCADA system configuration support, operator control screen configuration and tag database management. Document preparation included Control Philosophy, Detailed Design Documents, Communication Interface Documents, Cause and Effect Diagrams, procurement documents and specifications. Also plans, procedures and reports were prepared for acceptance testing (PreFAT and FATs). The controls team also provided field and commissioning support.



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System Specifications:

- 4 - new pump stations
- 3 - New pumping units per site
- 6 - New turbine generators
- 1 - relief station
- 4000 engineered drawings prepared
- over 60 engineering documents prepared
- 4 - drawings issues typically
- 5 - document review cycles typically
- 17 - PLC programs - ControlLogix
- 62 - RGV programs - Triconics
- 200- SCADA operator screens - UCOS
- 5 - SIPPS fault tolerant systems

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

www.hinz.com