



A Revolution in Performance

Dynamic Simulation : Project and Application Successes

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Introduction

• OPTI Canada Long Lake Upgrader Project

- Processes diluted bitumen (Dilbit) from NEXENs SAGD oil sands production

- Produces high quality synthetic crude (39° API premium sweet crude)

- Phase #1 expected production – 70,000 b/d with 4 more phases planned

- Located in Fort McMurray, Alberta

- Commissioning of Units well under way – first oil by Sept, 08

- Expect 50% capacity by Jan 2009

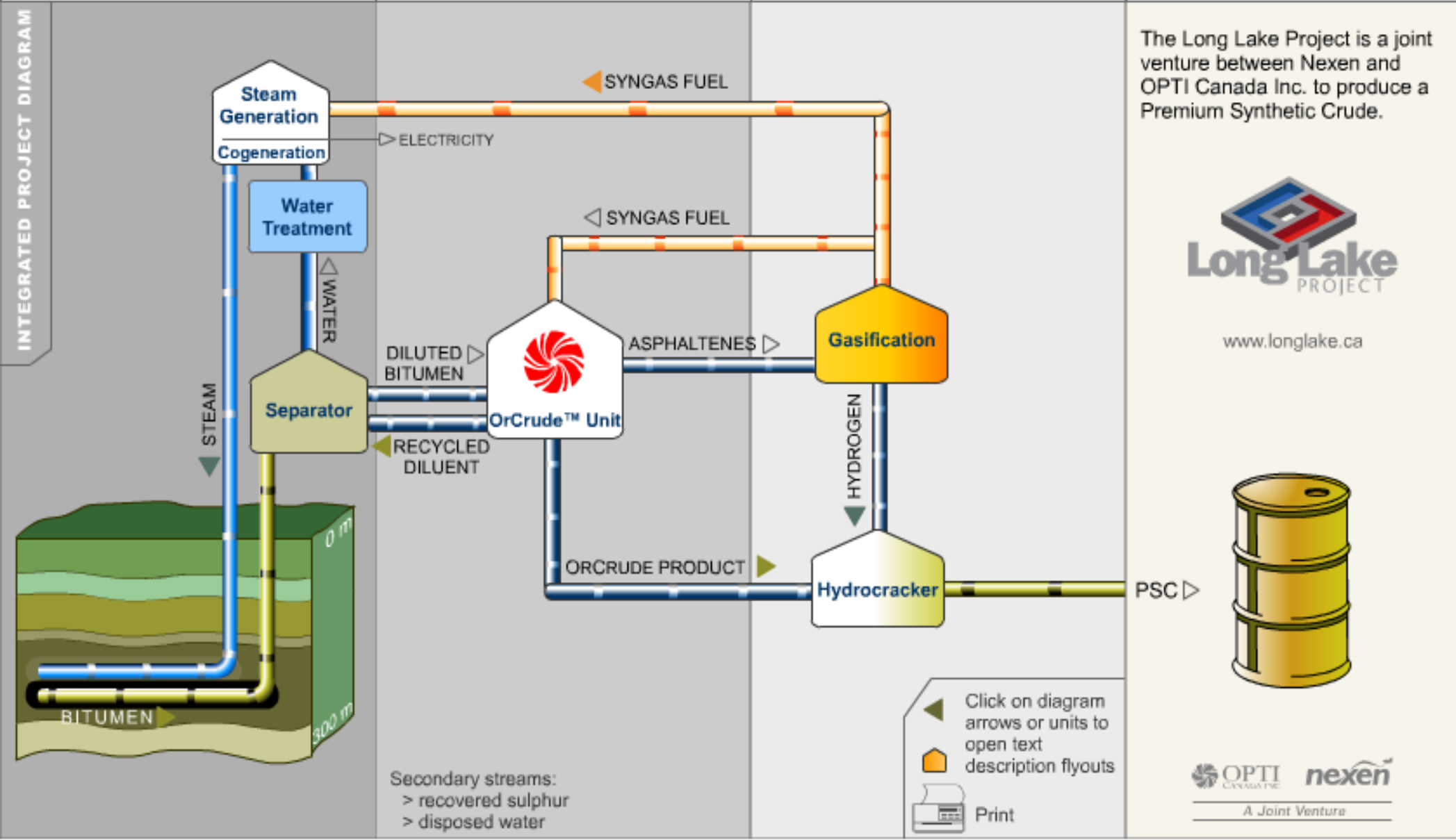
Premium Sweet Crude

OPTI's proprietary Integrated OrCrude™ process is designed to yield a light, sweet synthetic crude, a highly desirable feedstock for a wide range of refineries.

	Long Lake (PSC™)	2005 Syncrude (SSB1)	West Texas Intermediate (WTI)
Gravity° API	39	34	38.7
Sulphur ppm	<10	1040	4500
Transportation Fuels	70%	57%	61%
Gas-Oil	28%	40%	24%
Diesel/Cetane #	47	40	56



SAGD PROCESS	In-situ Recovery	ORCRUDE™	Upgrading	FINAL PRODUCT	PSC
<p>In the SAGD process, the upper well injects steam into the deposit where it rises through the oil sands and heats the bitumen. The heated bitumen flows with the condensed steam (water) to the lower horizontal well, and from there, flows to the surface.</p>	<p>The OrCrude™ upgrading process is a proprietary carbon-rejection process developed by the ORMAT Group of Companies. The OrCrude™ facility removes the heaviest, lowest value components of the bitumen (A-fuel) and upgrades the rest.</p>	<p>The hydrocracker provides secondary upgrading of the OrCrude™ product into finished Premium Synthetic Crude. The A-fuel by-product from the OrCrude™ upgrading process is gasified to produce synthetic fuel gas (syngas) for use in the project and hydrogen for use in the hydrocracker.</p>	<p>The final Premium Synthetic Crude (PSC) product is 39° API gravity with very low sulphur and nitrogen and superior product qualities.</p>		



The Long Lake Project is a joint venture between Nexen and OPTI Canada Inc. to produce a Premium Synthetic Crude.



www.longlake.ca



OPTI Canada Objectives

- **Train operators with limited experience**
- **Shorten startup**
- **Develop an ongoing training program**
- **Improve operator response to abnormal conditions**
- **Familiarize operators with new unit operations**
- **Familiarize operators with DCS and SIS**
- **Familiarize operators with operating procedures**

OTS Project Scope

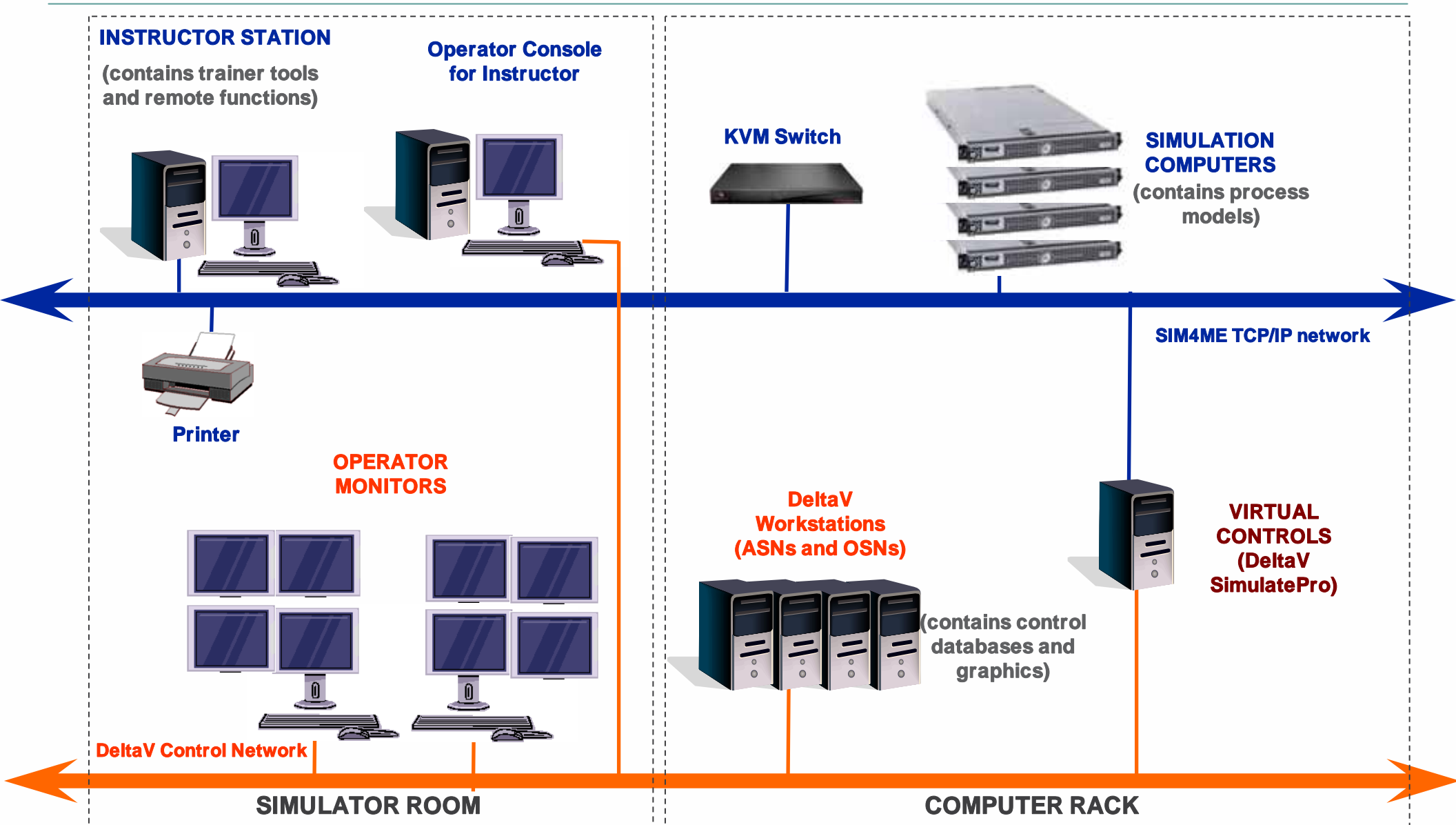
- **Process models**

- OrCrude Unit (OPTI owned process)
- Hydrocracker Unit
- Gasification Unit
- Sulphur Recovery Unit
- Air Separation Unit

- **DCS**

- Emerson DeltaV operator consoles
- Emerson DeltaV SimulatePro controls configuration
- SIS logic translated into DeltaV controls

OPTI Canada Training System Architecture



OPTI Training Program

- **Trained 26 Panel operators**
- **Trained 60 Field Operators (BMS)**
- **Full competency training which includes 160 hours of Simulation Training for all Panel Operators**
- **Competency training for Field Operators on BMS**
- **Simulation Training for Panel Operators make up 40% of over-all training designed to train anyone with very little related experience**
- **Process Engineers have also spent time on the Simulator to become familiar with expected outcome.**

Why was OPTI OTS successful?

- **OTS part of overall OPTI training program**
- **Dedicated trainers**
- **Designed training “lesson plans” to enable succession planning for Trainers**
- **System kept current with process and controls changes**
- **Training is a requirement**
- **Training is performed as a “shift”**
- **Operators practice, practice, practice**
- **Experience incorporated into OTS**

Additional benefits of OTS

- Checkout of DCS and SIS controls
- Validation of engineering design
- Checkout and improvement of DCS graphics
- Validation and refinement of operating procedures
- Evaluate control and ESD strategies
- Test alarm management

Questions?

Thank You!!!