



Record of FEESA's Transient Analysis Experience

FEESA staff have been using transient multiphase pipeline simulators since the 1990's, however here is a table of our experience with the use of transient simulators since the company was founded in 2001.

No.	Client	Project	Brief description of the contract	Contract Period	
				From	To
1	BP	Greater Plutonio Pre-FEED & FEED	Combining transient (OLGA) and steady state analysis to gain a life of field view of several transient issues associated with these deep-water oil fields, including blow-down, cool-down, turndown, ramp-up, slugging and displacement. Used results to determine insulation and gas lift requirements and develop Operating Guidelines	2001	2003
2	Amerada Hess	Chestnut Concept Selection	Used a novel parametric transient approach to assist in the selection of host facility for production from the proposed Chestnut subsea development.	2002	2002
3	Agip KCO	Kashagan Experimental Phase FEED	Tasked with digesting the voluminous reports on OLGA studies carried out by various third party consultancies; summarising and explaining the implications of their results on the design and operability of the development.	2003	2004
4	BP	PSVM Conceptual, Pre-FEED and FEED Stages	Similar to Greater Plutonio projects	2003	2007
5	PTT	Sriracha Flare Validation Study	Dynamic simulation of relief scenarios for fractionation unit on existing aromatics complex using HYSYS Dynamics, for purpose of validating flare system capacity.	2004	2004
6	Hyundai	Daesan Refinery Flare Validation Study	Dynamic simulation of refinery's existing platforming unit using HYSYS Dynamics for purpose of validating flare system capacity.	2004	2005
7	TMF	TMF	An active member of the Transient Multiphase Flow research program run from Imperial College.	2006	2014
8	BP	Various deep-water conceptual studies in Angola Blocks 15, 18, 31 and 32	Similar to Greater Plutonio projects, though also included investigations of novel concepts using a bespoke transient model, such as displacing live uninhibited fluids into a cold pipeline.	2007	2010
9	BP	West Nile Delta	OLGA analysis to assess shutdown, cool-down and restart of the Jackdaw system.	2010	2011
10	Tengizchevroil	Sour Gas Injection Compressor Rewheel	OLGA analysis of sour gas pipeline for evaluation of restart scenarios for rewheel injection compressor, recognising constraint of liquid surge capacity of slug catcher at inlet to compression facility.	2011	2012
11	BP	BP Angola B18 PCC Appraise Select	OLGA work to investigate restart of the system and displacement operations.	2011	2012
12	CB&I	Western Route Export Pipeline deoiling	Transient modelling of the deoiling of the WREP from Baku to Supsa, investigating the potential for over-pressure and leakage.	2011	2012



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13	BP America	Deepwater Horizon Expert Witness	OLGA transient analysis to investigate the warm-up of the Macondo well during our study of the Deepwater Horizon Oil spill as part of Expert Witness work on behalf of BP in the litigation.	2011	2013
14	Woodside	Browse FEED	OLGA simulations focused on key points in LoF to better inform (than had been done by the incumbent contractor) the client of the true nature of restart slugging. MEG requirement study during well start-up operations using OLGA. Wet gas pipeline slug tracking analysis to determine slug length/frequency. Transient analyses of the MEG Distribution system using PIPENET.	2011	2014
15	BG Group	Jackdaw	OLGA analysis to assess shutdown, cool-down and restart of the Jackdaw system.	2012	2012
16	BP	BP Angola B18 Greater Plutonio infill	A risk based approach to hydrates on well restart. Using OLGA and analytical methods, we investigated the risk of forming hydrate blockages on a range of different cold well restart issues for a system with an undersized MEG injection system.	2012	2012
17	BP Indonesia	Tangguh	OLGA analysis of the restart of the Tangguh wells to assess restart thermal conditions	2013	2014
18	Chevron	Gt Ubon, Thailand	Surge volume and pigging operation analyses carried out in OLGA.	2013	2014
19	Woodside	Pluto LNG Enhancement	Shutdown, blow down, restart transient analysis using OLGA with the CSM hydrate module.	2014	2014