Agenda for 2012 Conference

Tuesday, May 15, 2012

#	Day	When	Author(s)	Affiliation	Title
		6:00 – 7:30			**Ice Breaker & Registration Opens**

Agenda for 2012 Conference

Wednesday, May 16, 2012

		8:30			**Conference Start**
	Wednesday	8:30 – 9:15			Technology Showcase
	Wednesday	9:15– 10:00			Technology Showcase
		10:00 – 10:15			**Break**
	Wednesday	10:15 – 11:00			Technology Showcase
	Wednesday	11:00 – 11:45			Technology Showcase
		11:45 – 1:30			**Lunch**
					Upset Modeling and Leak Detection
1201	Wednesday	1:30 – 2:15	Morten Kristiansen	Energy Solutions International	Leak Detection Performance Metrics: What Should I Focus On? This paper analyzes how different leak detection performance parameters affect the overall cost and environmental impact. The analysis will be based on several case studies. The paper will attempt to provide guidelines to pipeline operators on which performance parameters to focus on.
1202	Wednesday	2:15 – 3:00	George Harriott	Air Products and Chemicals, Inc.	Pipeline Rupture: Frictional Similarity Solution This paper presents a frictional similarity solution consisting of a pair of master curves and associated scaling relations to predict the distribution and evolution of pressure and flow over long distances and times in a severed pipeline. Validity of the similarity solution is established by asymptotic analysis and numerical computations of the full set of gas dynamics equations. Simple formulae for the transient discharge to the atmosphere and the maximum separation of automatic shut-off valves result from these similarity laws.
		3:00 – 3:15			**Break**
1203	Wednesday	3:15 – 4:00	Brett Christie	TransCanada Pipelines Limited	Predicting Shut-in and In-Station Leak Detection Sensitivities This paper explores the ability of detecting a leak during shut-in conditions for both long and short sections of liquid phase pipelines, using the API1149 Report as a basis. The presentation will begin by briefly introducing the API 1149 Report, describing a simple mathematical model for predicting temperature and pressure changes with instrument uncertainties during the shut-in process, followed by application case studies with leak and no leak conditions. The results will be examined with regard to providing recommendations for leak sensitivity.
1204	Wednesday	4:00 – 4:45	Dan Garwood	Chesapeake Energy	Evaluating Steady-State Versus Transient Modeling in the

			Doug Kolak Arlie Nuetzel	Mentor Graphics Mechanical Analysis Division (formerly Flowmaster Group)	Design of a Vent Gas Header in a Natural Gas Compression Facility This study compares two natural gas compressor facility vent header designs—one designed with steady-state calculations and one designed with a transient analysis. The steady-state design is also evaluated with the transient software to determine how the design might perform in an emergency. The example facility used for this study is based on an operating compressor facility in the Barnett Shale area near Ft. Worth, TX. It includes 8 automated block valves, 16 pressure relief valves, and the piping that connects it to the blow down silencer. The predicted venting performance for each design is also compared to the actual venting performance at the example facility.

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		11:45 – 1:30			**Lunch**
					System Modeling
1205	Wednesday	1:30 – 2:15	Rainer Kurz, Matt Lubomirsky Sidney Santos	Solar Turbines At Work Rio Engineering and Consulting	Control Concepts for Centrifugal Compressor Applications This paper explains the impact of the interaction between system characteristics and compressor characteristics, both under steady state and transient conditions, and the concepts to optimize and control the units.
1206	Wednesday	2:15 – 3:00	Augusto Garcia Hernandez Hector Delgado Garibay Flavia Viana Marco Antonio Munoz Prior Moises Leon Dorantes Eduardo Elias Rayon	Southwest Research Institute PEMEX E&P	Hydraulic Modeling of an Off-Shore Crude Oil Emulsion Pumping System This paper presents a modeling approach taken for simulating a complex off-shore booster station which handles crude oil emulsions with different types of pumping equipment. Different correlation models for the emulsion properties were analyzed and incorporated into the pipeline modeling. In addition, field activities, model validation, and capacity assessment results are presented as a case study. Results and recommendations for the entire project will also be provided.
		3:00 – 3:15			**Break**
1207	Wednesday	3:15 – 4:00	Dorin Scheianu	Wood Group GTS	Applying Distribution Functions for Analyzing the Efficiency of Gas Compressor Units Operating at Variable Conditions A method to analyze efficiency of gas compressor installations operating at variable conditions was developed and exemplified on several applications. The method is new because it uses distribution functions rather than a single point estimate and has the ability to better reflect actual efficiency of a compressor unit especially when it operates at variable conditions and part load. The presentation will discuss the advantages the method could offer when applied for monitoring and managing operation of gas compressors, or when designing new applications.

1208	Wednesday	4:00 – 4:45	Benoît Casoetto, Arthur Jacquiau, Aurélie Le Maître, Baptiste Rossi Nadjim Moumini	GDF SUEZ GRTgaz	Computing and Optimizing the Available Linepack in a Gas Network to Address the Issue of Flexibility This paper discusses the optimization of linepack usage in gas networks to match flexibility demands in consumption. The rapid development of flexible gas plants known as CCGT makes it a key issue in computing capacities for TSOs. Operating principles of tools designed by GDF SUEZ R&I to address this subject will be presented, highlighting the respective roles of steady-state- and transient-modeling in that task. Illustrations based on results for GRTgaz network will be given.

Agenda for 2012 Conference

Thursday, May 17, 2012

		8:30			**Conference Start**
1209	Thursday	8:30 – 9:15	Piet Nienhuis	NV Nederlandse Gasunie	An Innovative Approach to Gas Transport Planning – A Dutch Transmission System Operator Experience The paper describes a highly meshed gas transmission system where entry and exit capacity is sold decoupled, independent from each other. This requires a new approach in planning method and also a new design of a planning tool that can be used to calculate (both for simulation and optimization) many highly different flow patterns.
1210	Thursday	9:15– 10:00	Gregory Lind Susan Bachman	Enterprise Products Pipeline	Lessons, Issues, and Perils Experienced During the Conceptual Design and Predictive Modeling of an Ethane Pipeline Our company recently subscribed to transport 190,000 bpd of ethane over 1200+ miles via new and existing pipelines. The existing pipeline that is to be repurposed for this project was originally designed for gasoline, jet fuel, diesel, and propane. This paper will discuss the design process, including ethane properties, pipeline conversion constraints, as well as the importance in convincing engineers, commercial personal and management that ethane is not your typical NGL.
		10:00 – 10:15			**Break**
1211	Thursday	10:15 – 11:00	Rick Brown	Pacific Gas and Electric Company	Pipeline Safety Enhancement Plan Impacts on Gas System Planning This paper discusses the impacts of the California Pipeline Safety Enhancement Plan (PSEP) on gas system planning. The paper will discuss the very large workload and increases in gas system hydraulic analyses complexity, and how this is expected to change the software functionality needs of pipeline simulation. The paper will help provide an overview of how an increased focus nationwide in pipeline safety can affect gas system planning departments.
1212	Thursday	11:00 – 11:45	Garry Hanmer, Edward Jackson Dagfinn Hansen, Sven Erik Losnegardn, Ben Velde	ATMOS International GASSCO	Tuning of Subsea Pipeline Models to Optimize Simulation Accuracy This paper discusses the optimisation of simulation accuracy for subsea pipeline models through the automated tuning of pipeline parameters such as pipe roughness and heat transfer coefficient. The presentation will discuss the tuning procedure for optimum model accuracy and the minimisation of

					measurement errors through maximum likelihood state estimation.
		11:45 – 1:30			**Lunch & Chairman's Session**
1213	Thursday	1:30 – 2:15	Jon Barley	Energy Solutions International	Thermal Decoupling: An Investigation In developing algorithms for solving the flow of fluids in a pipe compromises are often made to offset computational complexity and performance against accuracy. This paper discusses in detail one such compromise that is often made when it comes to solving the thermal equation: decoupling the thermal solution from the hydraulic solution. Both fully coupled and decoupled solutions are derived, results compared and conclusions made regarding computational expense verses accuracy.
1214	Thursday	2:15 – 3:00	B.Calgaro, P.Andreussi M. Bonizzi, P. Ciandri M. Margarone I.R. Ellul	University of Pisa TEASistemi ENI E&P Knowledge Reservoir	Simulation of Stratified Gas-Liquid Flow in Near-Horizontal Pipes In this paper, we use different data sets relative to stratified gas-liquid flow in near horizontal pipes to test major commercial codes used for pipeline simulation. Among these data we include a new set of measurements of pressure drops and liquid hold-up taken at TEASistemi Laboratory in Pisa, Italy.
		3:00 – 3:15			**Break**
1215	Thursday	3:15 – 4:00	Jason P. Modisette	Atmos International	Instability in Finite Difference Pipeline Models This paper explores the situations where numerical instability arises in different types of finite difference pipeline model and what can be done to avoid it. Explicit, fully implicit, and partially implicit models of liquid and gas pipelines are considered. The effect on stability of the method of linearization of the underlying nonlinear partial differential equations will also be discussed.
1216	Thursday	4:00 – 4:45	Matthew H. Ford Galen Stanley	Telvent	Throughput maximization and verification for batched liquid pipelines In this paper we describe the methodology behind, and potential uses of a hydraulically accurate pipeline throughput maximizer. Such a system will allow pipeline engineers to calculate their needed equipment line up weeks in advance, while verifying batch schedules while handling both planned and unplanned outages. Similarly, it will discuss how such a system would be capable of verifying whether a planned batch line up was feasible given known outages, pipe flow derates, and potential unplanned shutdowns.

		6:00 – 7:30			Reception

Agenda for 2012 Conference

Friday, May 18, 2012

		8:30			Start
1217	Friday	8:30 – 9:15	Benjamin Metz, Virginie Adin, Bernard Rigaux, Roger Pettavino	GDF SUEZ GrDF	Topological Analysis to Enhance Gas Distribution Network Safety Optimizing the equipment of the gas network and its structure is a key issue for distribution networks operators. This paper will present the operating principle of a tool that helps analysts in this process by drawing up the valve scheme and studying the network. Based on a specific representation of the network, this tool isolates relevant network structures, points out potential weaknesses, and offers solutions in order to decrease the network's blowdown time in case of accident.
1218	Friday	9:15– 10:00	Fábio Capelassi Gavazzi de Marco	Transportadora Brasileira do Gasoduto Bolívia-Brasil S.A.	Pig Tracking in a Natural Gas Pipeline Using an Analytical Model and Operational Data This paper presents a simplified explicit model to assist the gas controllers during pig run operations. The model considers the mass balance to obtain an approximation of the transient flow profile and calculates the gas velocity using analytical equations to estimate pressure and temperature profiles, while the gas density is calculated by an explicit equation of state for real gas. Some real cases of pig runs in different sections of the pipeline are used to test the model. Additionally, the effect of heat transfer coefficient and natural gas compressibility equation on the pig travel time are evaluated.
		10:00 – 10:15			Break
1219	Friday	10:15 – 11:00	Brad Bean	Bradley B. Bean, PE	A Review Of Customer Demand Modeling Methods For Distribution Systems In a sense there are two components to a distribution system model. One component describes the physical system - the pipes, regulators, and connections. The other describes the customer demand or load on the system. The method used to develop the demand model, depends on the intended use of the system model. A system model developed to address operational considerations may use a different demand modeling method, than a system model developed to address design considerations. This paper will explore the various demand modeling methods that are applicable to the various system model types.

1220	Friday	11:00 – 11:45	Thanh T. Phan Andrew J. Sawin	Southern California Gas Co.	Automatic Linebreak Control Valve Case Study This paper discusses the analysis of automated line break control valve settings, and situations where an appropriate setting may not exist. The presentation will discuss one situation where no proper setting can be applied without causing unwanted closures, and what was done in response to the problem.
		11:45			**Conference Close**