GexCon is presenting an advanced course on the analysis of facilities. The 2-day course will address multiple hazards including LNG release and dispersion, explosion modeling, cryogenic spills, prevention and mitigation, probabilistic risk assessments, legislation, accidents, selected case studies. The course will prove helpful to experienced engineers, safety supervisors, and operating managers who are committed to safe workplaces.

PROGRAM OVERVIEW
GexCon is presenting an advanced course on the analysis of explosion and other hazards for Liquefied Natural Gas (LNG) facilities. The 2-day course will address multiple hazards associated with onshore and offshore LNG facilities including LNG release and dispersion, explosion modeling, cryogenic spills, prevention and mitigation, probabilistic risk assessments, legislation, accidents, selected case studies. The course will prove helpful to experienced engineers, safety supervisors, and operating managers who are committed to safe workplaces.

CONTENT
- Fundamentals of LNG
- LNG Safety Regulations
- Gas Explosion Basics
- Cryogenic Hazards
- LNG Accidents: History
- LNG Accident Consequence Models
- Prevention and Mitigation
- Quantitative Risk Assessment Methodology
- Analyses – Case Studies

WHO SHOULD ATTEND?
- Safety engineers, managers, supervisors, and other personnel involved in the design, operation or modification of onshore and offshore LNG facilities (import, export, bunkering, transportation, etc.) as well as onshore processing facilities
- Representatives of governmental or public bodies involved in development of safety regulations
- Anyone who would like to develop an understanding of fire and explosion safety for LNG facilities

MKOPSC
The Mary Kay O'Connor Process Safety Center’s mission is to promote safety as second nature in industry around the world with goals to prevent future accidents. The Center develops safer processes, equipment, procedures, and management strategies to minimize losses within the processing industry.

MKOPSC is located on the TAMU-College Station Campus.
PHONE: 979-845-3489
WEB: http://psc.tamu.edu/
AGENDA
Day 1

08:30  Registration and Coffee.

09:00  Introduction

09:15  Fundamentals of LNG
Composition, Cryogenic properties, Hazards (cryogenic embrittlement, pool fire, flash fire, explosion)

10:00  Coffee Break

10:15  LNG Accidents: History
Cleveland explosion, Skikda LNG liquefaction facility explosion, other minor incidents

10:45  Gas Explosion Basics
Combustion mechanisms, Fuel reactivity, Positive feedback mechanism, Importance of geometry, Explosion tests

12:00  Lunch

13:30  LNG Accident Consequence Models
Potential leak sources, dispersion (liquid spills and flashing jet releases), pool fires, explosions, benefits of CFD

14:30  Prevention and Mitigation
Hazardous area classification, Ventilation, Choice of equipment, Maintenance and procedures, Inventory control, ESD, Layout modification, etc.

15:00  Coffee Break

15:15  Cryogenic Spill Hazards and Cryogenic Spill Protection
Hazardous area classification, Ventilation, Choice of equipment, Maintenance and procedures, Inventory control, ESD, Layout modification, etc.

16:00  End of the First Day

AGENDA
Day 2

08:00  Welcome and Coffee

08:45  Prepare to Depart for the TEEX/Brayton Fire School

09:30  Demonstration of LNG Spill and Pool fire

11:00  LNG Safety Regulations
49 CFR 193 and current U.S. DOT Guidance; EN 1473

12:00  Lunch

12:30  Hazard Assessment Methodologies
Deterministic vs. Probabilistic methods

13:30  Coffee Break

13:15  Deterministic Analyses - Onshore liquefaction
Case studies (export and truck-loading facilities)

14:00  Probabilistic Analyses
QRA examples for onshore facilities and probabilistic ERA for Floating LNG

15:30  Questions and Answers

15:45  Closing / Certificates

The lecturers include LNG and gas explosion experts
Dr. Filippo Gavelli and Dr. Scott G. Davis.