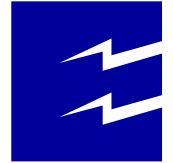


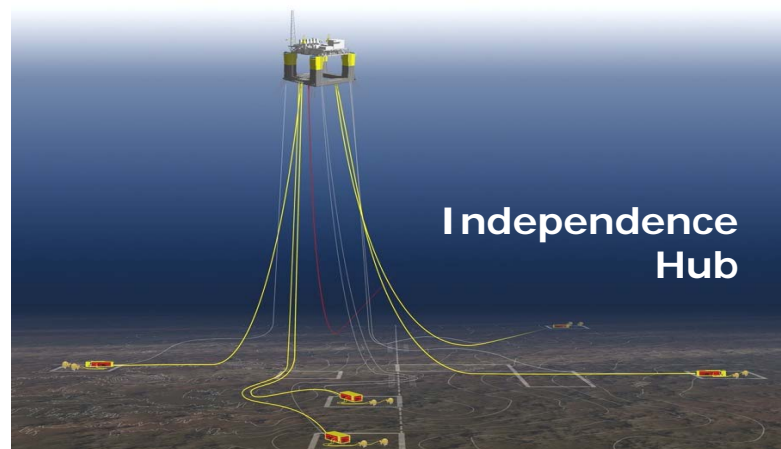
MTS Houston
INDEPENDENCE HUB AND TRAIL
- PART ONE -
Thursday May 26, 2005

Bart H. Heijermans
Senior Vice President

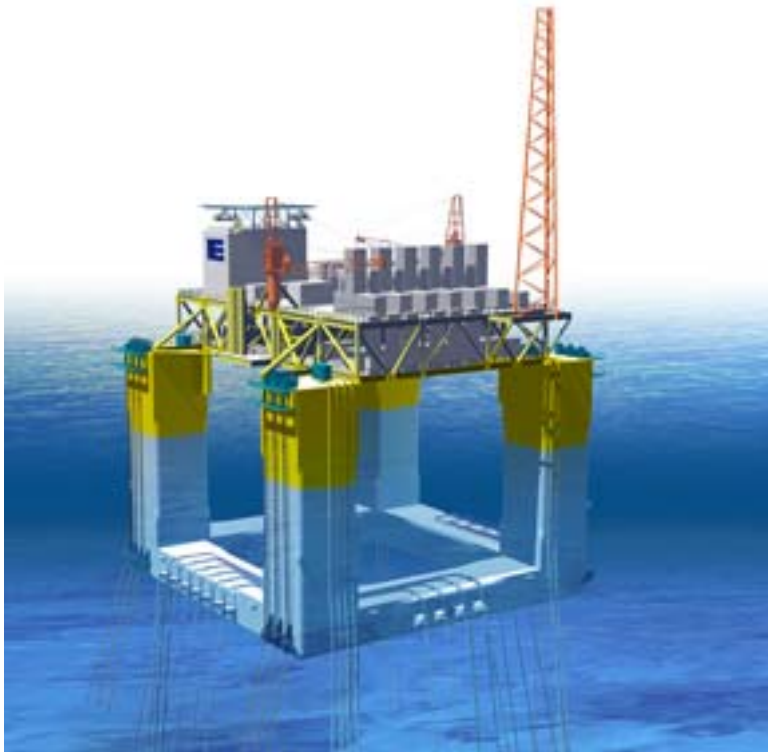
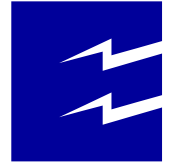
Table of Contents



- Introduction to Enterprise Products Partners L.P.
- Deepwater infrastructure in the Gulf of Mexico
- Independence Hub and Trail

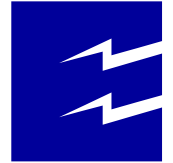


What makes his Project Unique?



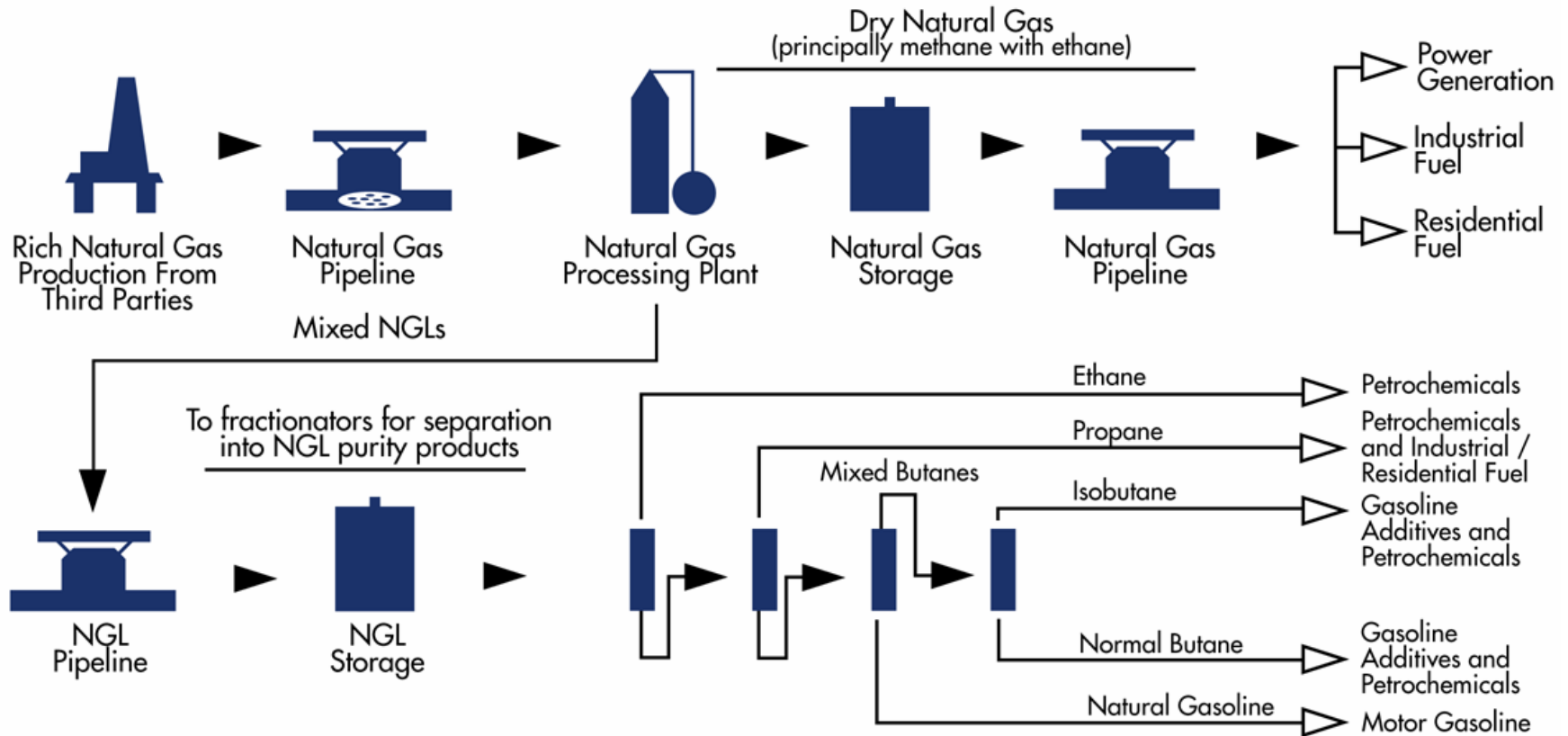
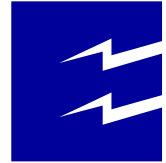
- Five producers and infrastructure developer collaborating in the fast track development of nine remote gas fields in a new supply corridor in the Eastern Gulf of Mexico
- Record Setting Project
 - Deepest production platform (8,050 ft.)
 - Deepest production (> 9,000 ft.)
 - Deepest pipeline and flowline systems
 - Largest MEG Reclamation Unit
- First production from federal waters adjacent to Florida
- Compressed schedule
- Project Team, contractors and vendors

Overview of Enterprise (EPD)

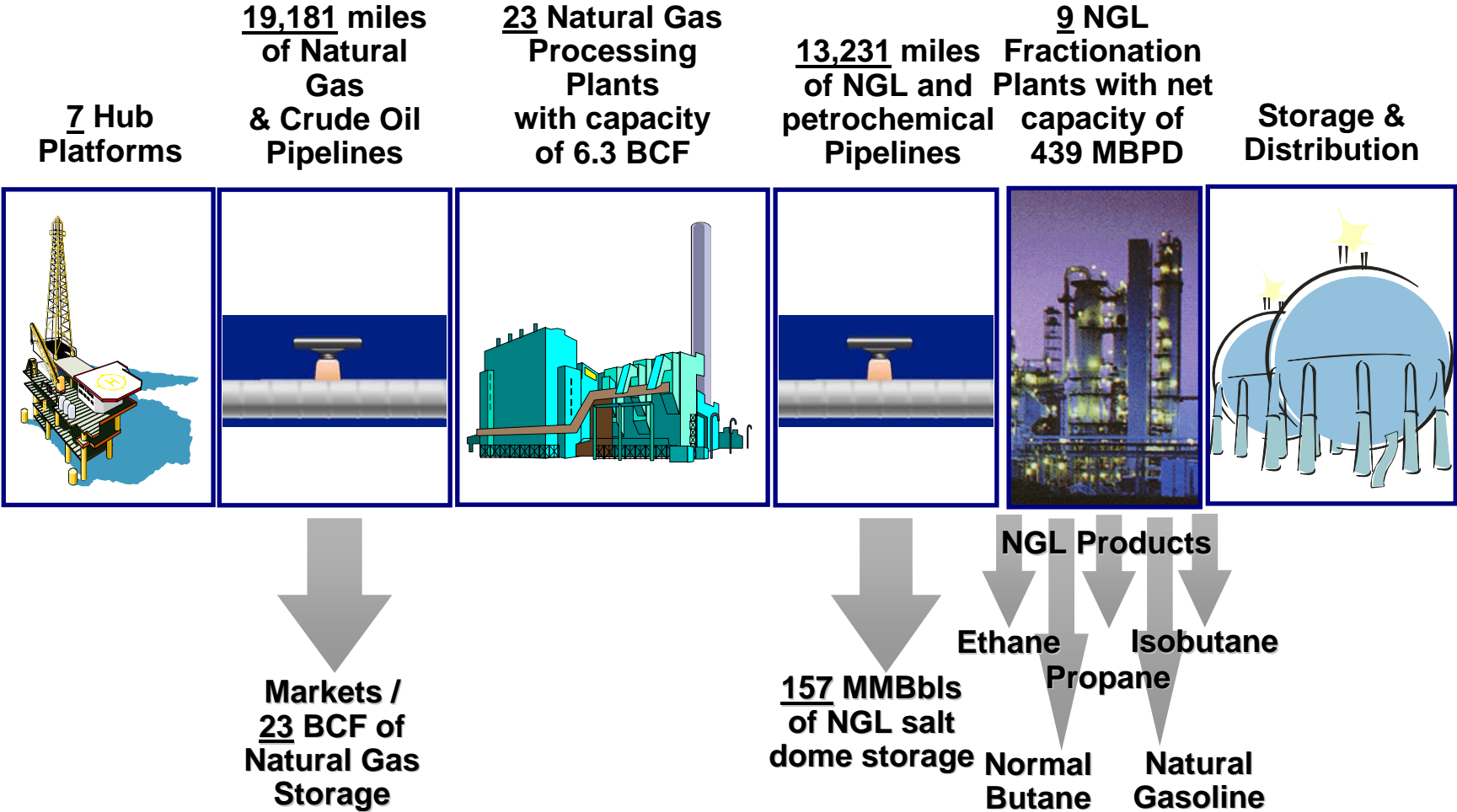
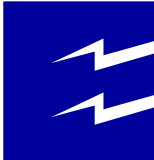


- Enterprise filed its IPO in 1998 and has an enterprise value of approximately \$14 billion
 - GulfTerra Energy Partners, L.P. and Enterprise Products Partners L.P. merged in September, 2004 to create one of the largest publicly traded energy partnerships serving producers and consumers of natural gas, natural gas liquids and crude oil
 - Large platform of assets across the midstream energy value chain
-

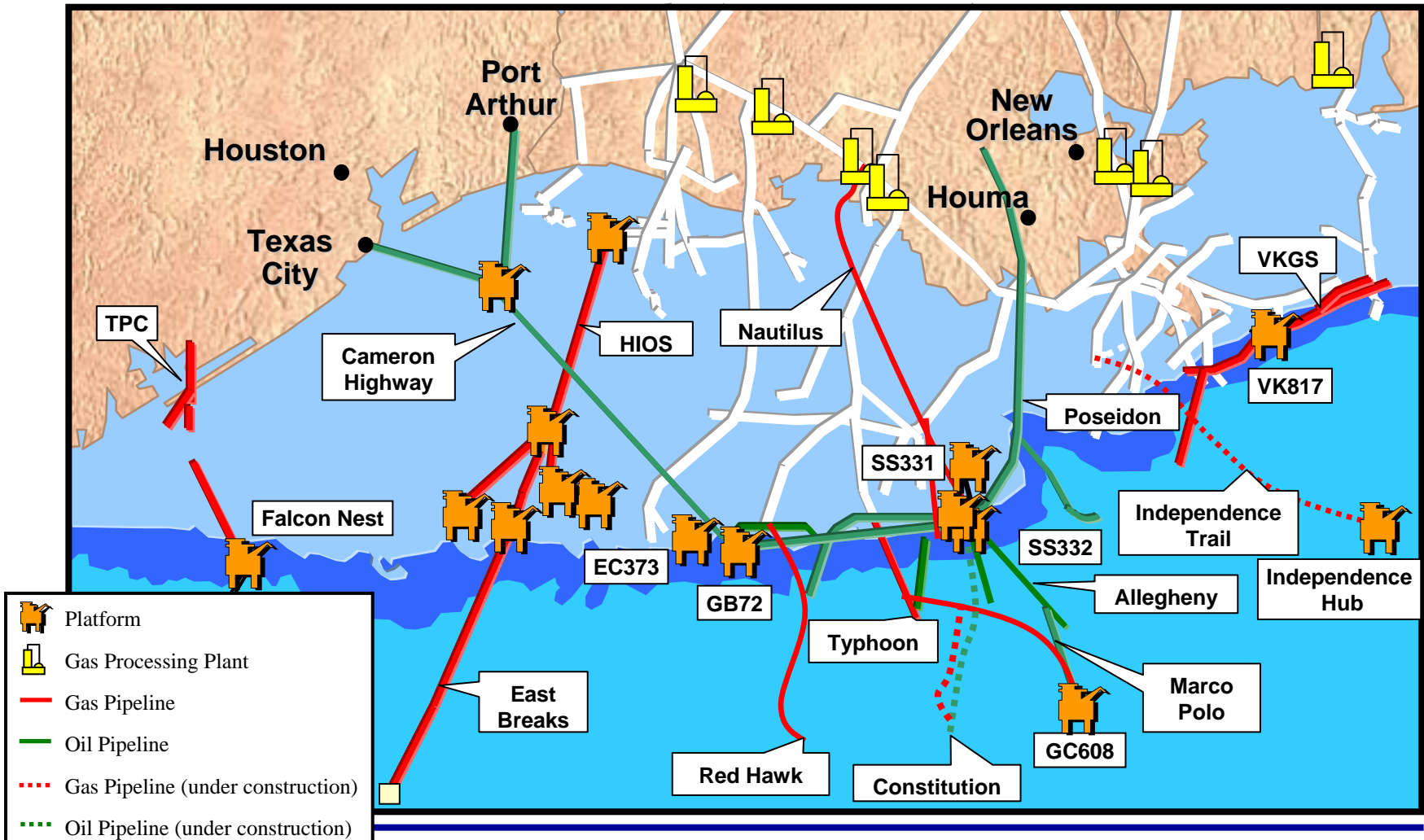
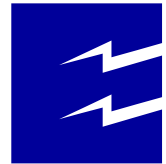
Natural Gas and NGL Value Chain



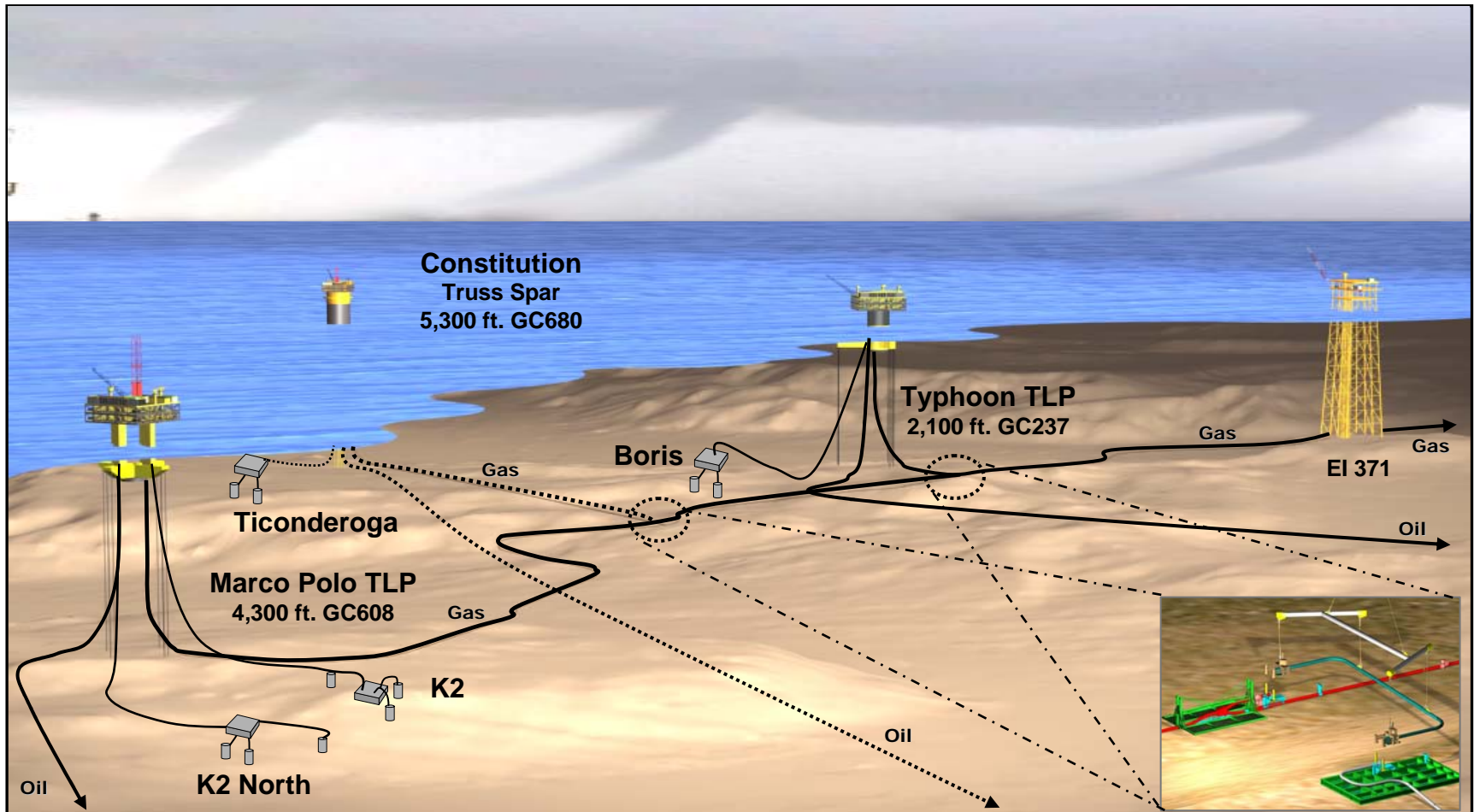
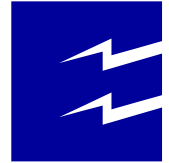
Integrated Midstream Energy Services



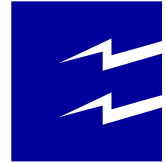
EPD Gulf of Mexico Assets



The Future of Deepwater Infrastructure in the *Gulf of Opportunity*

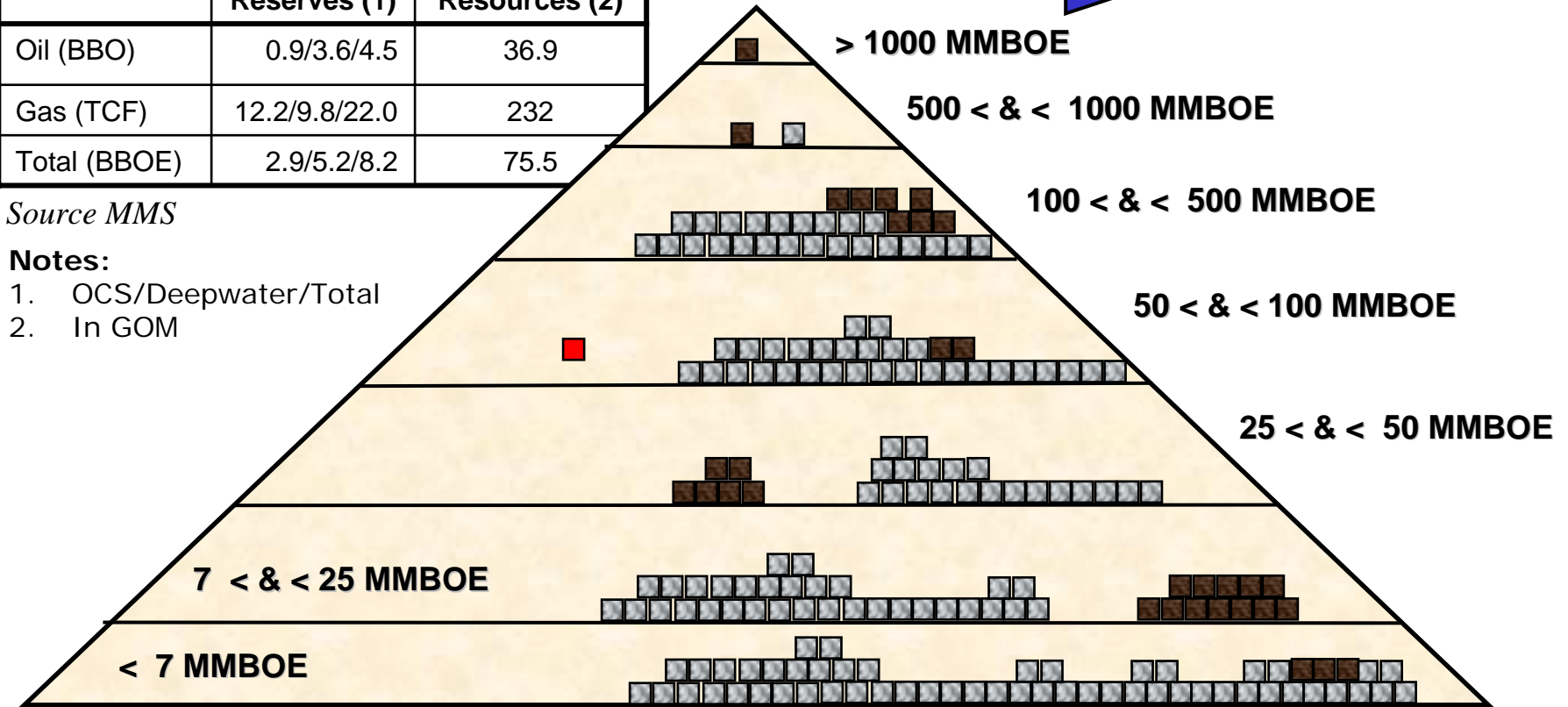


The Deepwater Field Pyramid



	Proved Reserves (1)	Undiscovered Resources (2)
Oil (BBO)	0.9/3.6/4.5	36.9
Gas (TCF)	12.2/9.8/22.0	232
Total (BBOE)	2.9/5.2/8.2	75.5

Est. Deepwater ~ 60 BBOE > 923 x ■



Source MMS

Notes:

1. OCS/Deepwater/Total
2. In GOM

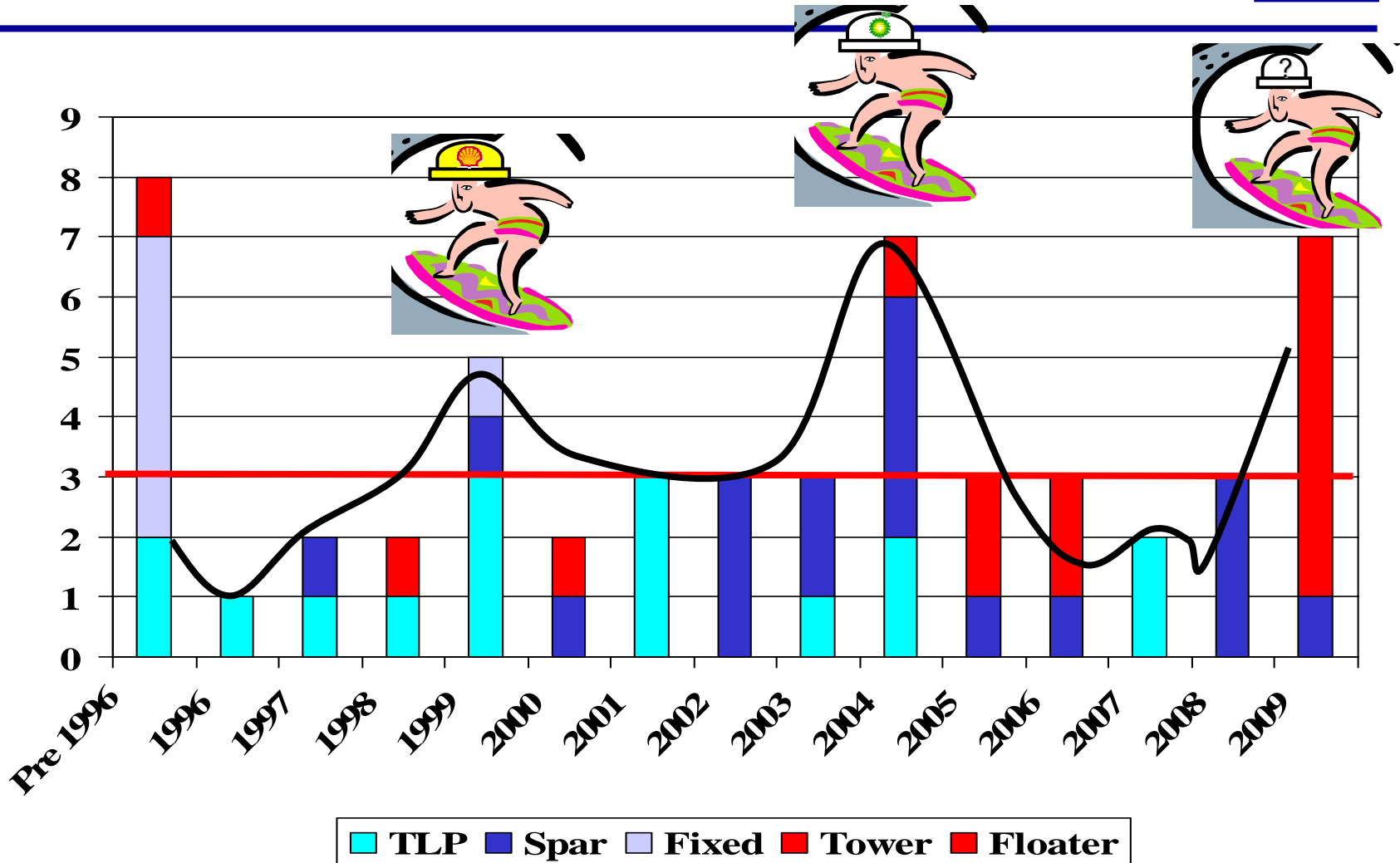
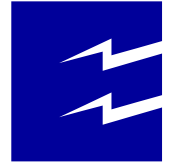
■ Producing (155)

■ Under development (32)

■ Mean Discovery = 65 MMBOE

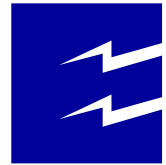
Source Enterprise

Deepwater Platforms

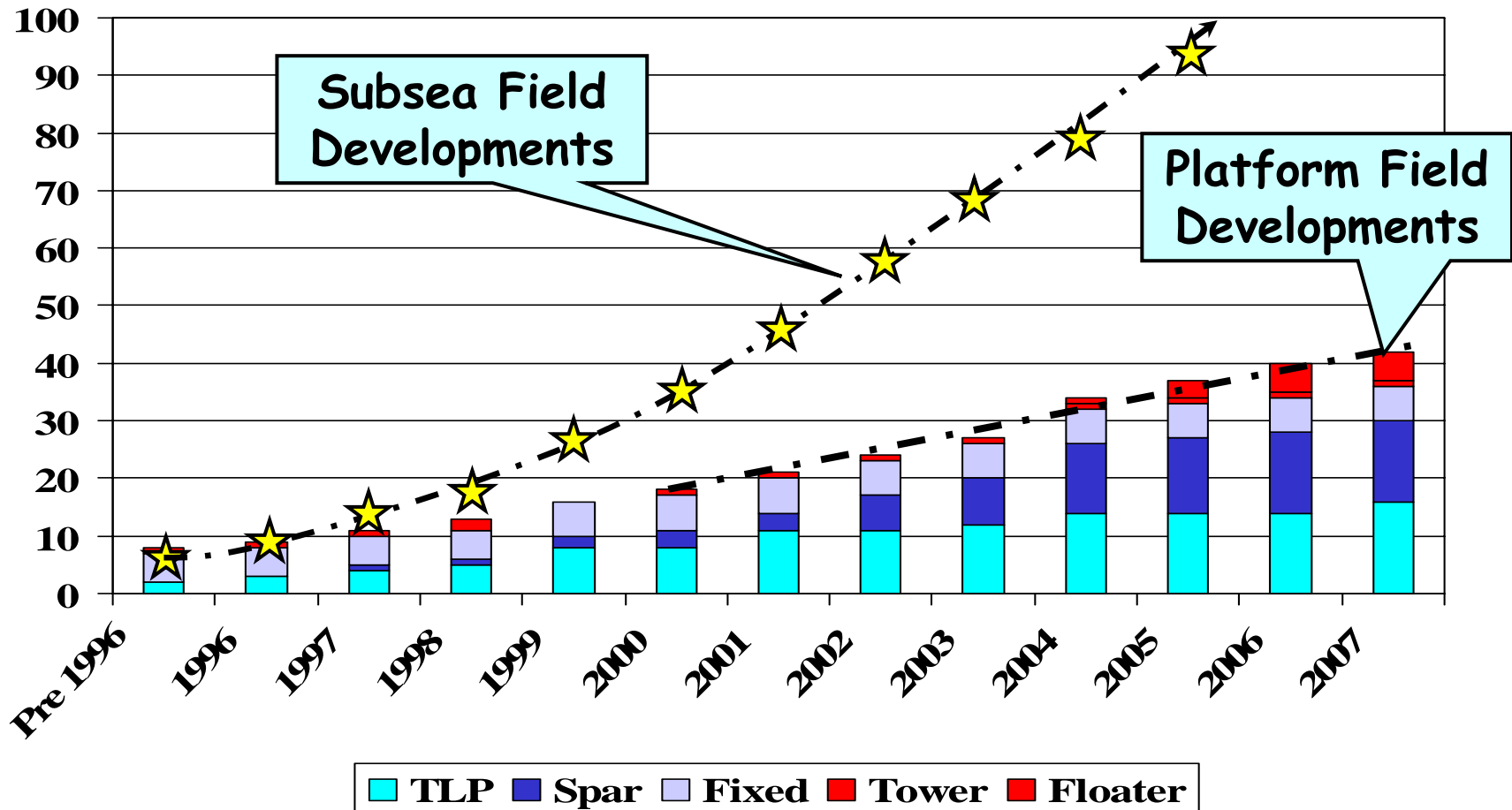


2007/8/9 are EPD's estimates

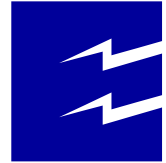
Infrastructure Triggered Developments



Cumulative Deepwater Platforms and Subsea Tie-Backs

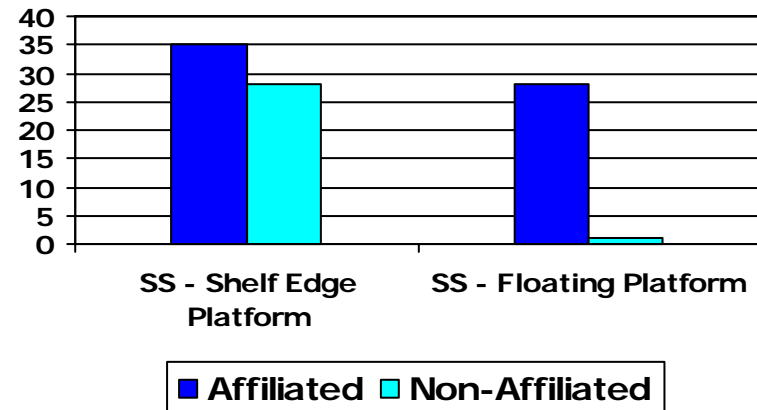


Infrastructure Ownership and Capacity Utilization



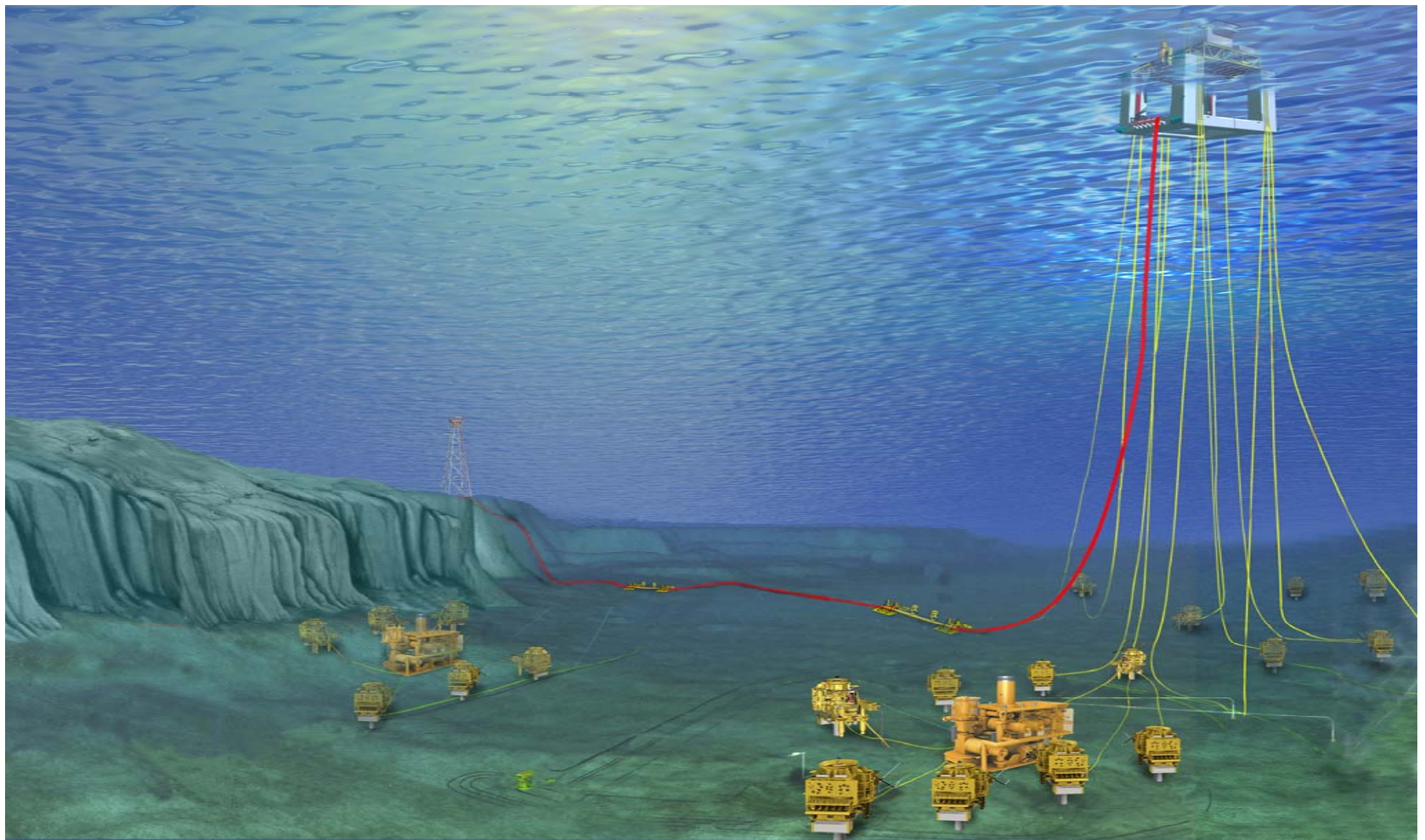
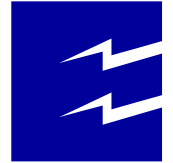
- Only 2 out of 38 producing deepwater platforms are owned by third parties
- Value of Capacity
- Indemnification Schemes
- Risk/Reward Structure
- Too many platforms are 'right-sized'

Subsea Tie-Backs

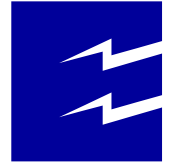


More deepwater infrastructure to be owned by third parties

Independence Hub and Trail

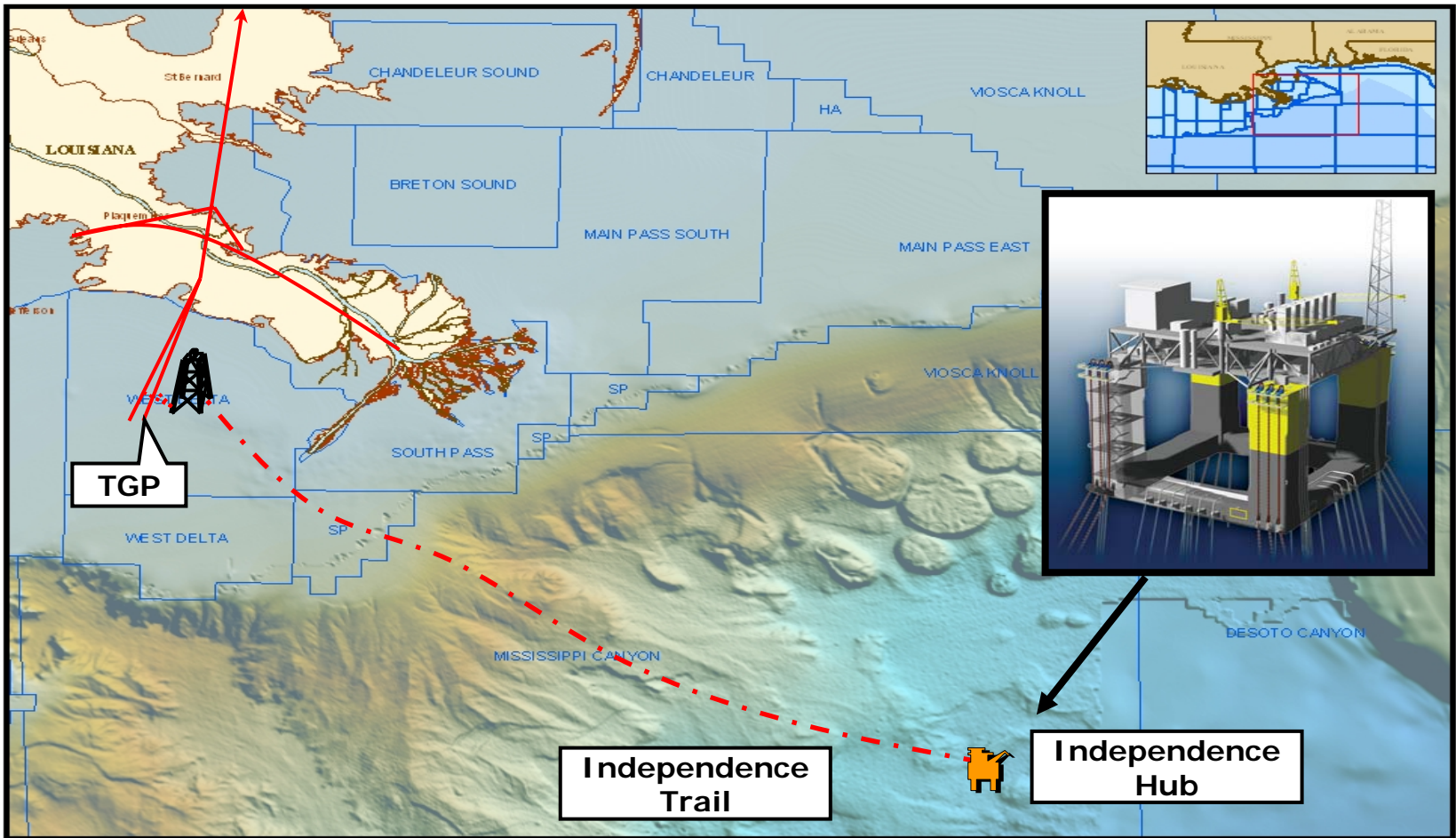
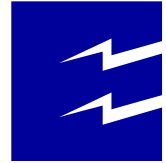


Summary



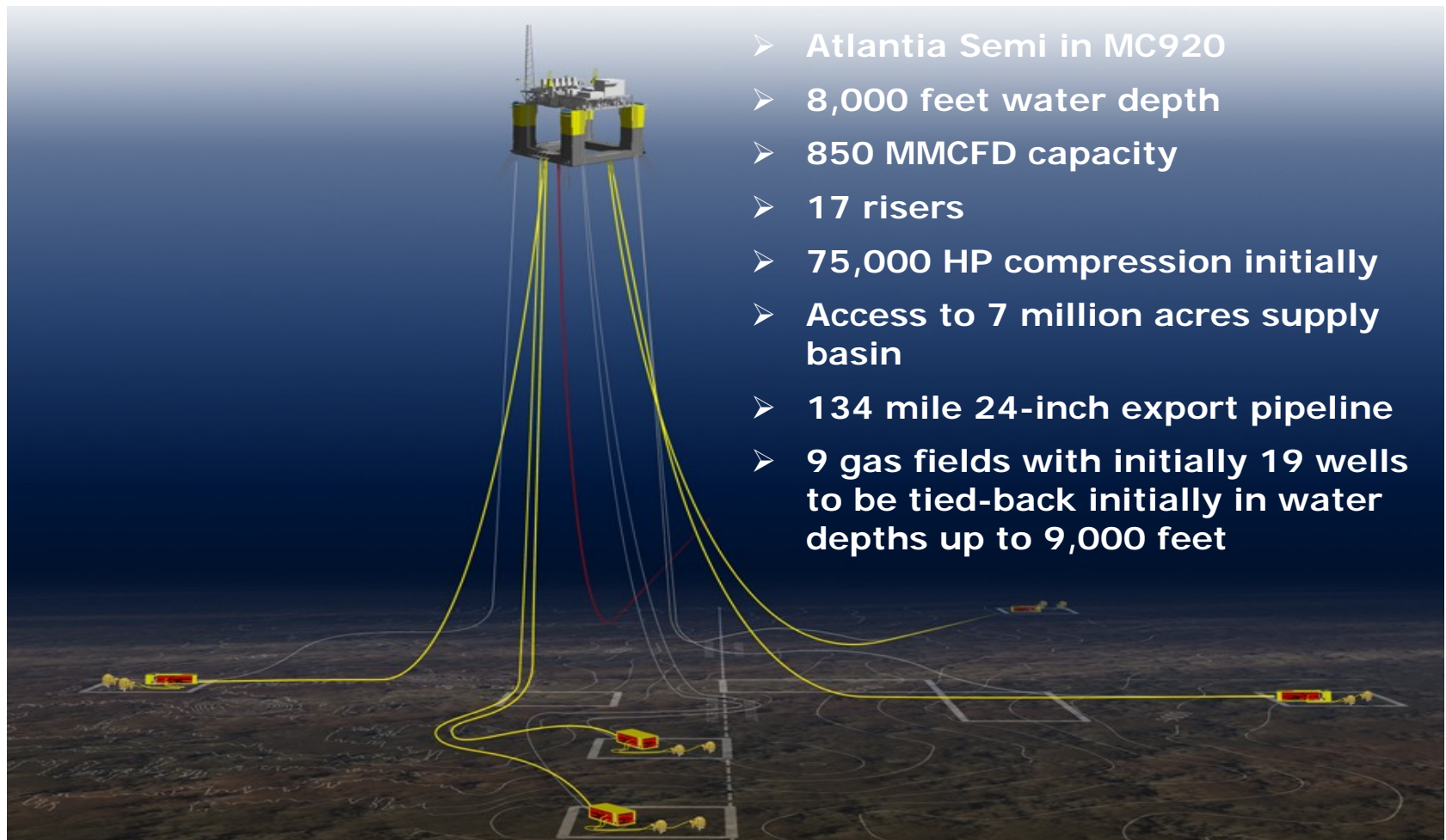
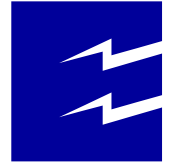
- Anadarko, Kerr-McGee, Devon, Dominion and Spinnaker formed Atwater Valley Producers Group (“AVPG”)
 - Enterprise and Cal Dive International will own a floating platform named *Independence Hub* with the capacity to process 850 MMcfd (Enterprise will have an 80% interest in the platform entity and Cal Dive will own the remainder 20%)
 - Enterprise will build, own and operate a new 134-mile, 24-inch natural gas pipeline, named *Independence Trail*, with a capacity of 850 MMcfd to transport production from the Independence Hub to an interconnect with Tennessee Gas Pipeline in WD68
 - An integrated project team (“IPT”) with representatives of the Enterprise and the AVPG and other industry experts will build Independence Hub
 - AVPG will own and construct tie-back pipelines from the nine anchor fields to Independence Hub
 - First production expected 2007
 - Independence Hub is Enterprise’s third deepwater platform development
-

Independence Hub and Trail





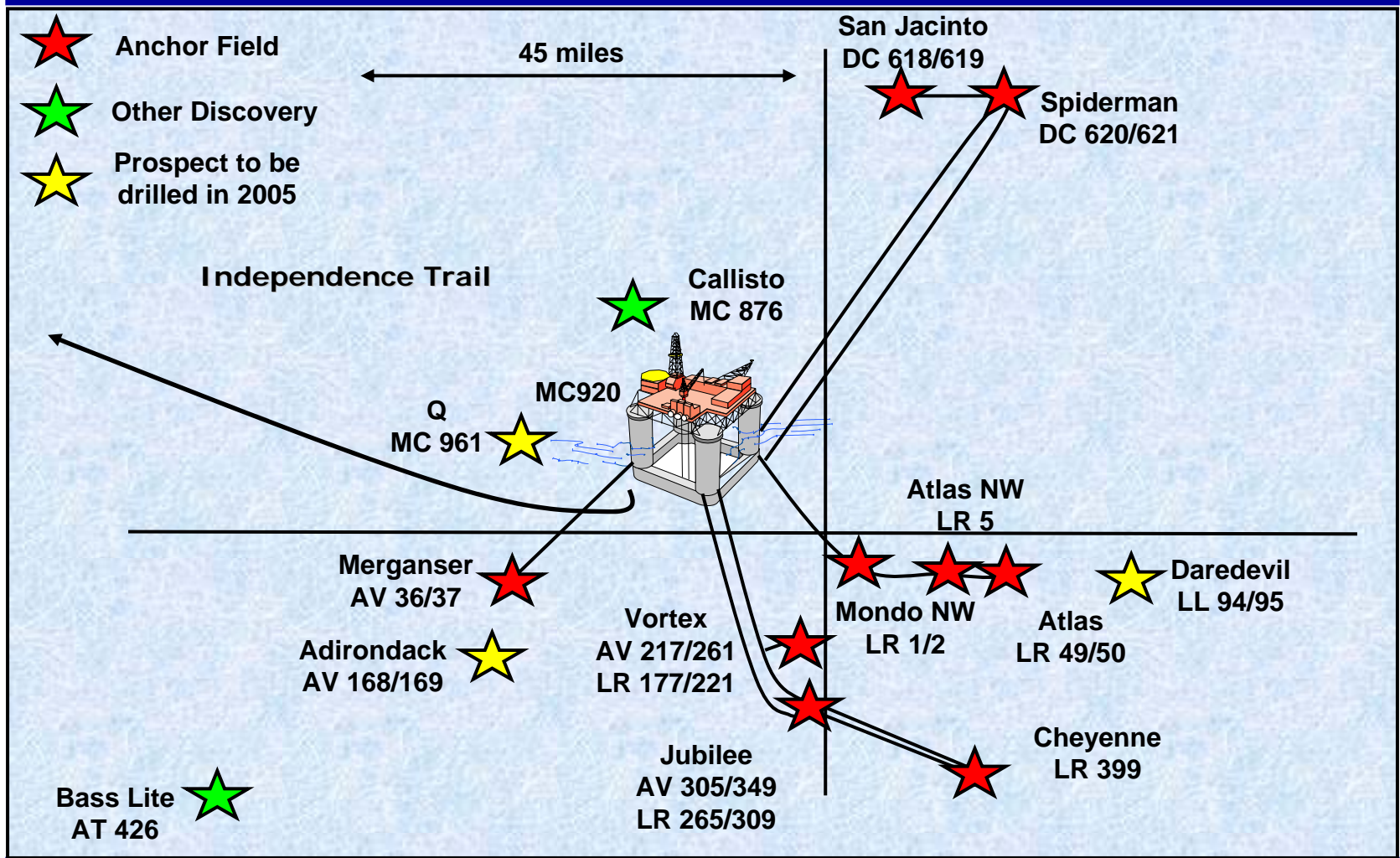
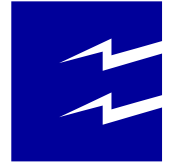
Independence Hub

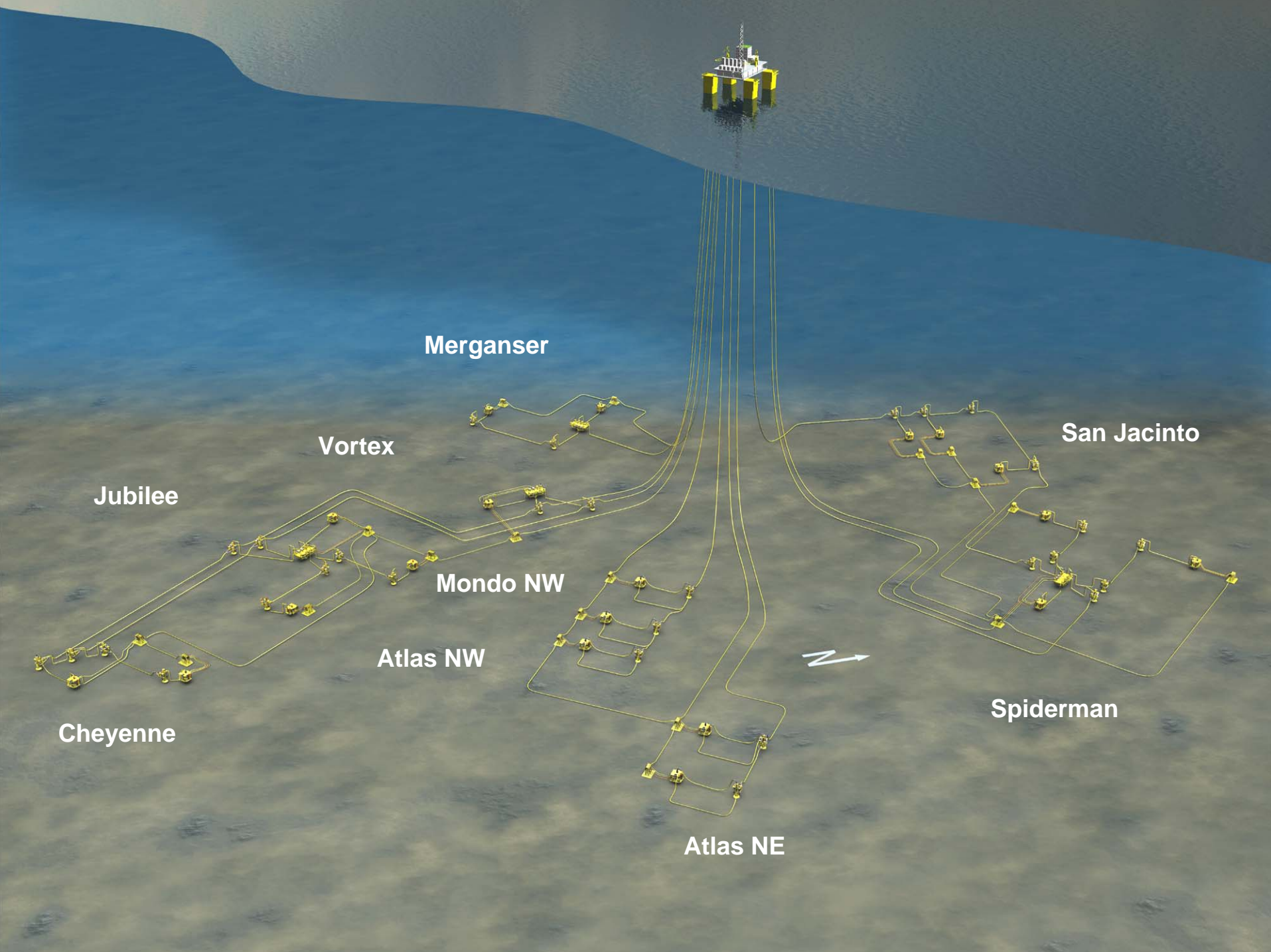


- Atlantia Semi in MC920
- 8,000 feet water depth
- 850 MMCFD capacity
- 17 risers
- 75,000 HP compression initially
- Access to 7 million acres supply basin
- 134 mile 24-inch export pipeline
- 9 gas fields with initially 19 wells to be tied-back initially in water depths up to 9,000 feet



Independence Project





Merganser

Vortex

San Jacinto

Jubilee

Mondo NW

Atlas NW

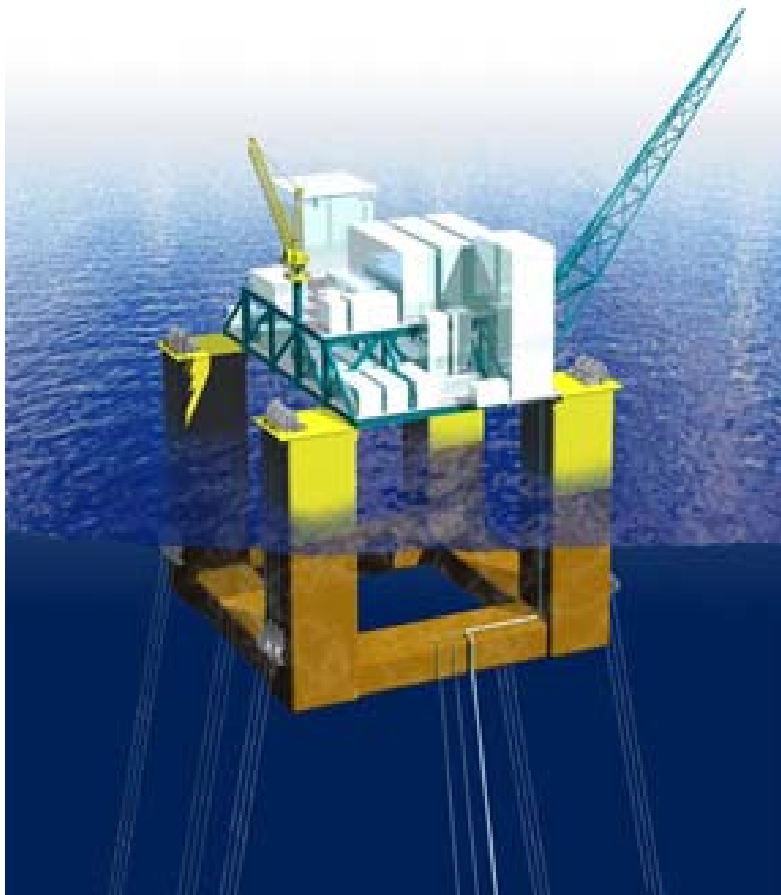
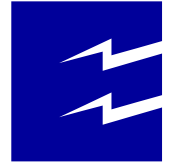
Spiderman

Cheyenne

Atlas NE



Platform Hull and Moorings



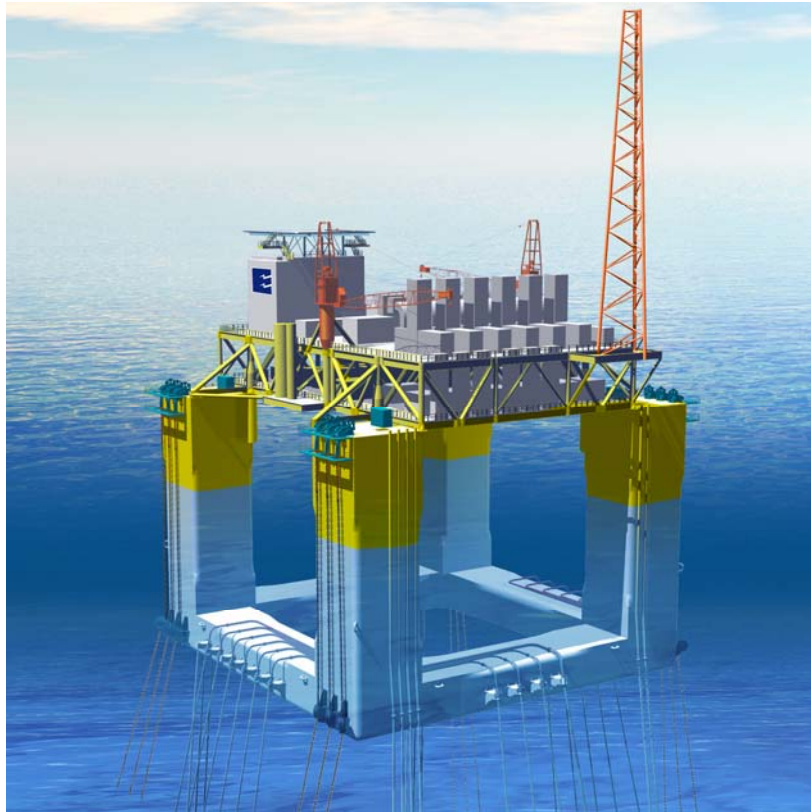
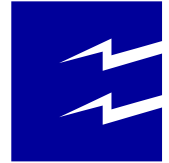
Hull

- 4-column semi with ring pontoon
- Outside 232' x 232' x 160'H
- Columns 46' x 46'
- Pontoons 38' x 26'
- Operating draft 105'
- Displacement 46,160 tons
- Hull dry weight 14,370 tons

Moorings

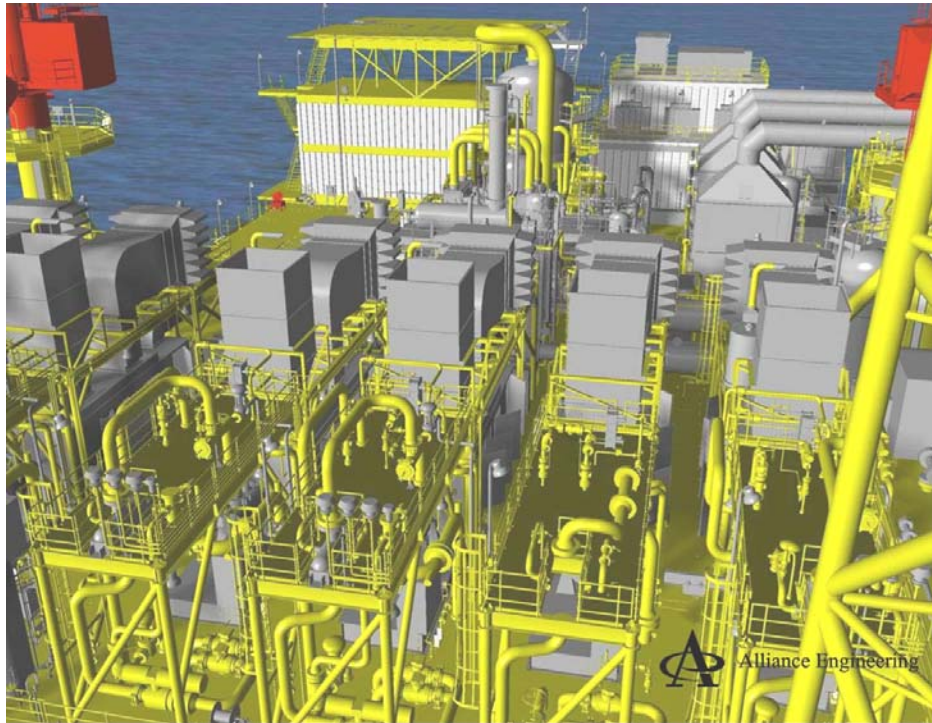
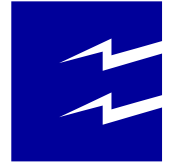
- 12 x chain/polyester/chain lines
- 2.5 miles long
- Mooring horizontal offset 10,400'
- Polyester test inserts
- 15.5' x 100' suction piles

Platform Topsides



- Two-level deck 140' x 232' nominal
- Capacities
 - 850 MMcf/d gas
 - 4,250 bpd condensate
 - 3,000 bpd water
- Dedicated allocation separation
- Gas dehydration
 - Process design pressure 2,220 psig
- ~75,000 hp compression (5 Mars 100 units)
 - Export pipeline MAOP 3,250 psig
- Hydrate inhibition with reclamation
- Dry weight 8,400 tons
- Operating weight 10,100 tons

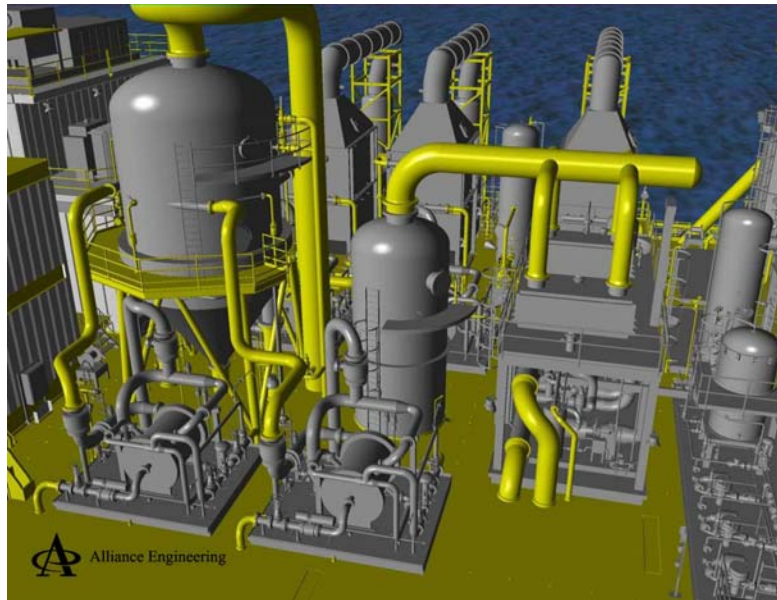
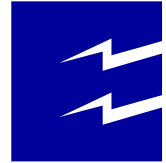
Platform Compression



- **6 x Mars 100 Turbine Driver Packages (5 Current, 1 Future)**
- **90,000 HP (ISO Rating)**

- **Two Stages of Compression 600 to 3100 psig**
- **Single Stage Identical Compressor Trains**

MEG Reclamation Unit



OFFSHORE MEG RECLAIMER FEED CAPACITY

- Statoil Asgard (N. Sea) 3 x 1800 BPD
- Kerr – McGee Red Hawk 580 BPD
- Shell Mensa 750 BPD
- Enterprise Independence 7800 BPD

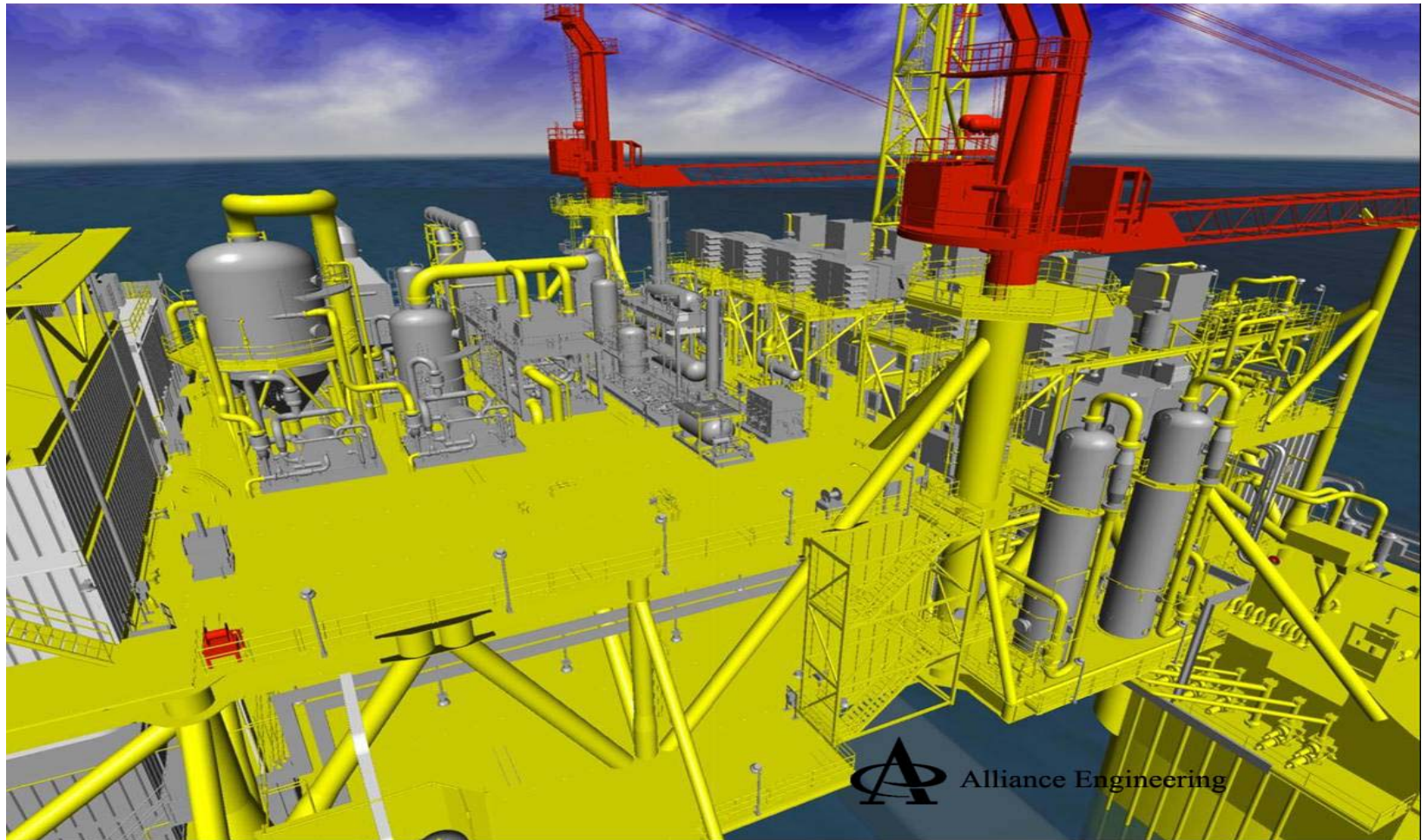
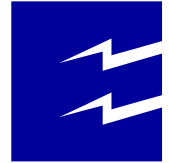
COST SAVINGS / WEIGHT SAVINGS

- Single Train/Spared Pumps
- High Flux Exchangers
Heaters/Condensers
- High Efficiency Structured Packing
- High MTD Exchangers
- Simplified Piping Scheme
- Condensation vs. Vacuum Duty

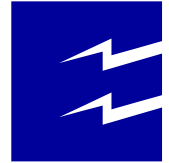
APPROXIMATE DRY WEIGHT

- Asgard 740 tons
 - Independence 375 tons
- ➔ Half the Weight, 40% Greater Capacity.

Space and Payload Reserve

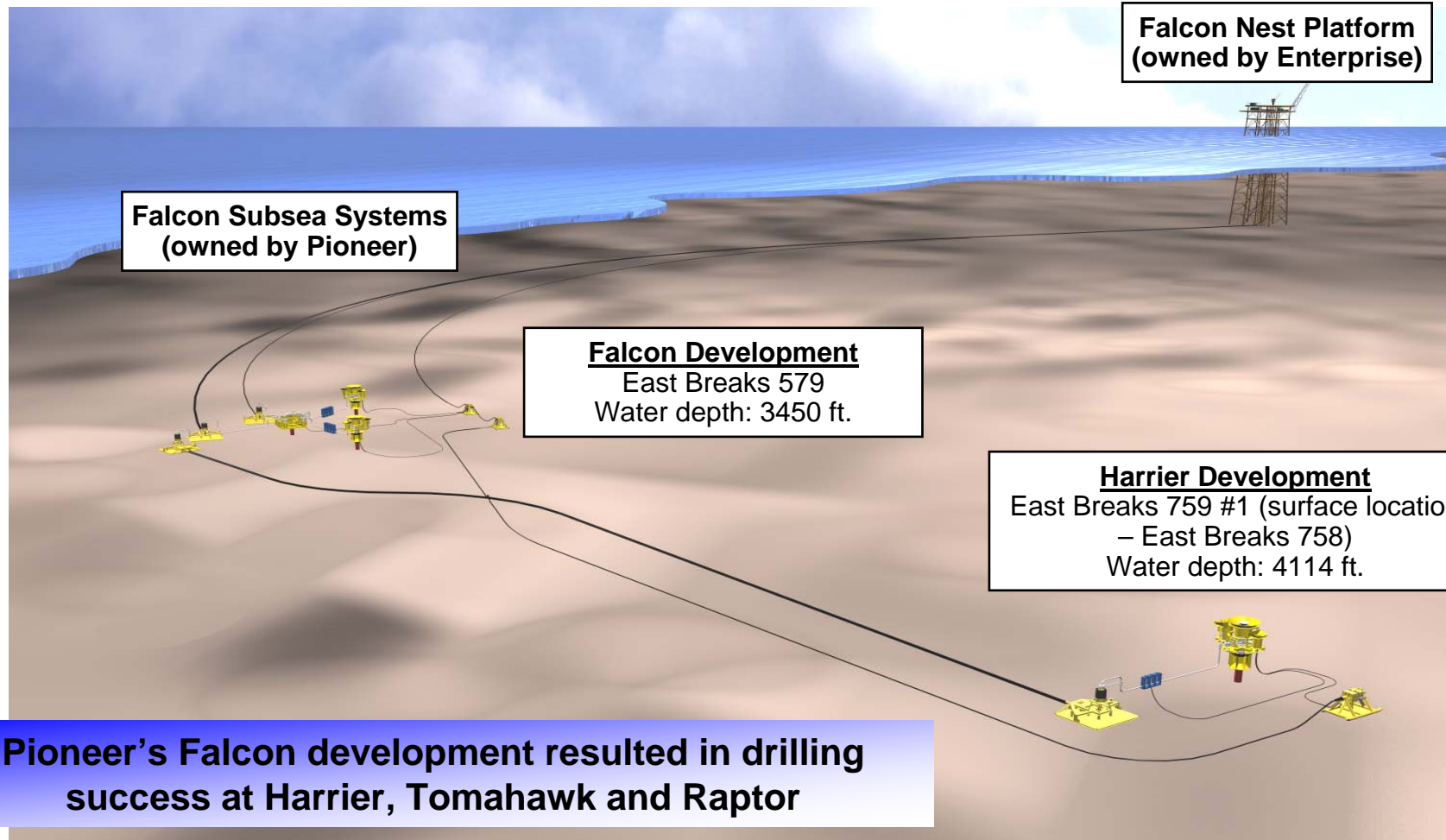
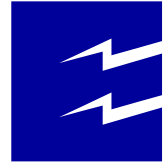


What made this Area in the Eastern Gulf Attractive to Enterprise?

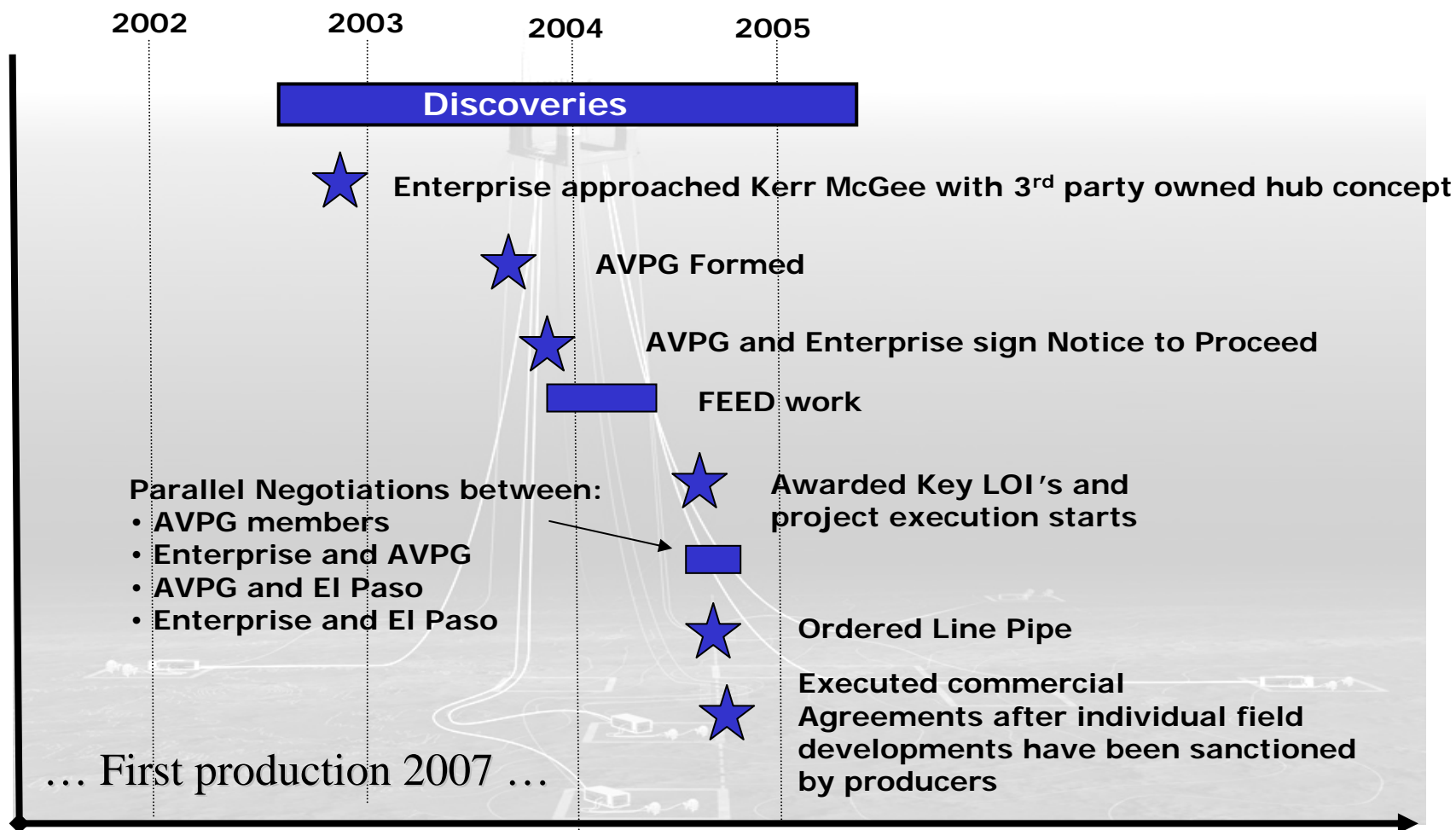
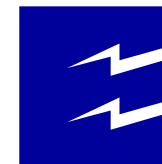


- Remote location with no infrastructure and nine stranded fields
→ First mover advantage
 - Platform will have excess capacity once the decline of the nine anchor fields starts → Stimulate additional drilling in the area
 - Majority of gas fields are relatively shallow
 - Low dry hole cost
 - Low drilling and completion cost
 - Low tie-back cost → lower the development threshold for future fields (from 500 BCF to 25 BCF)
 - Relative shallow fields: less wall thickness required
 - Additional pipeline loop not required because of gas production
 - Future wells can be connected to existing flowlines and manifold
 - Less flow assurance problems
 - Platform with subsea tie-backs will provide large footprint → discoveries in a supply basin of over 7 million acres (size of the State of New Jersey) can be tied-back to the platform
-

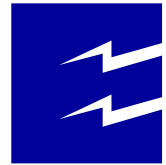
Falcon Corridor



Independence Project - Timeline



Independence Project Structure



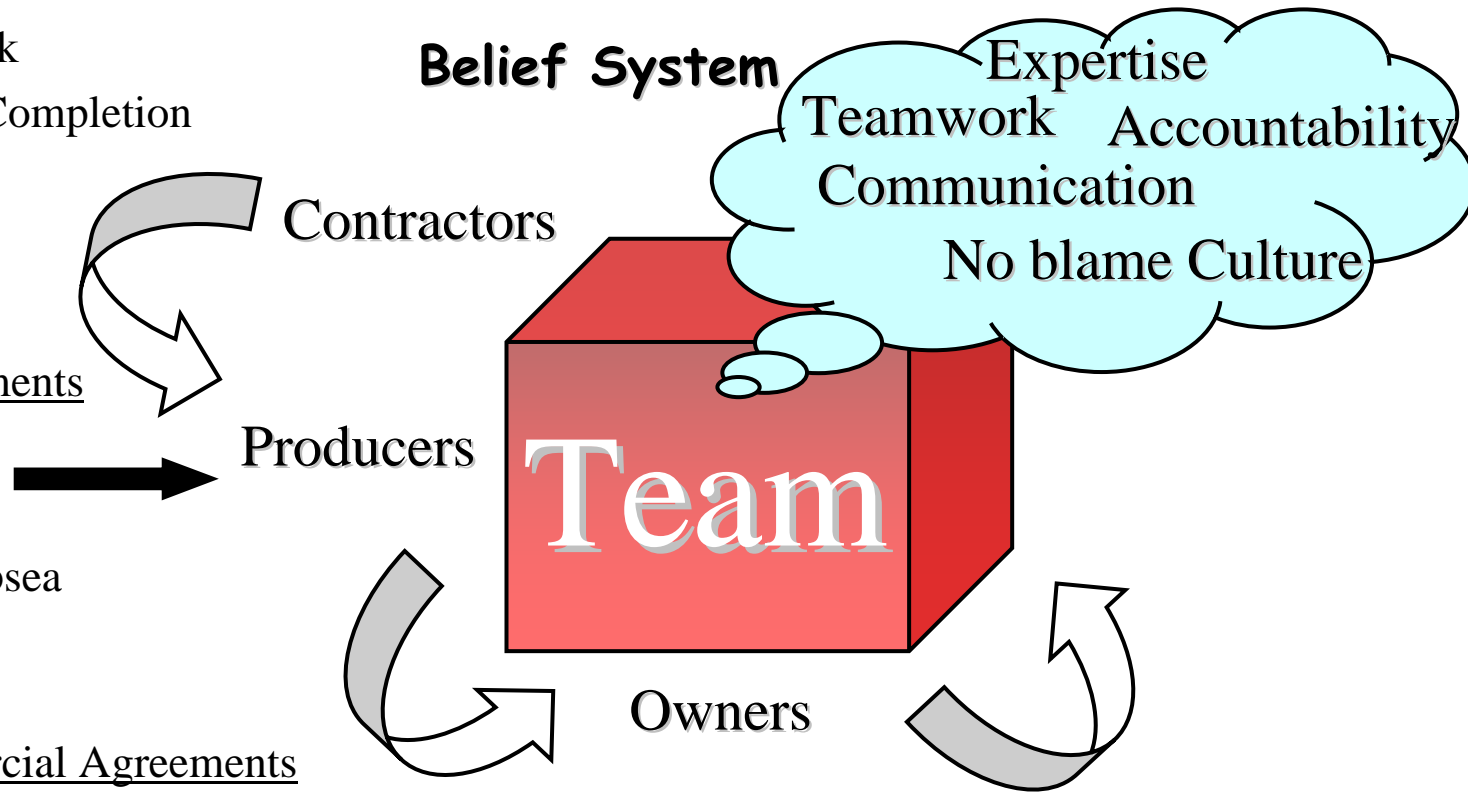
- Subsea Work
- Drilling & Completion

Commercial Agreements

- Ownership
- Operation
- JOA / shared subsea flowline system

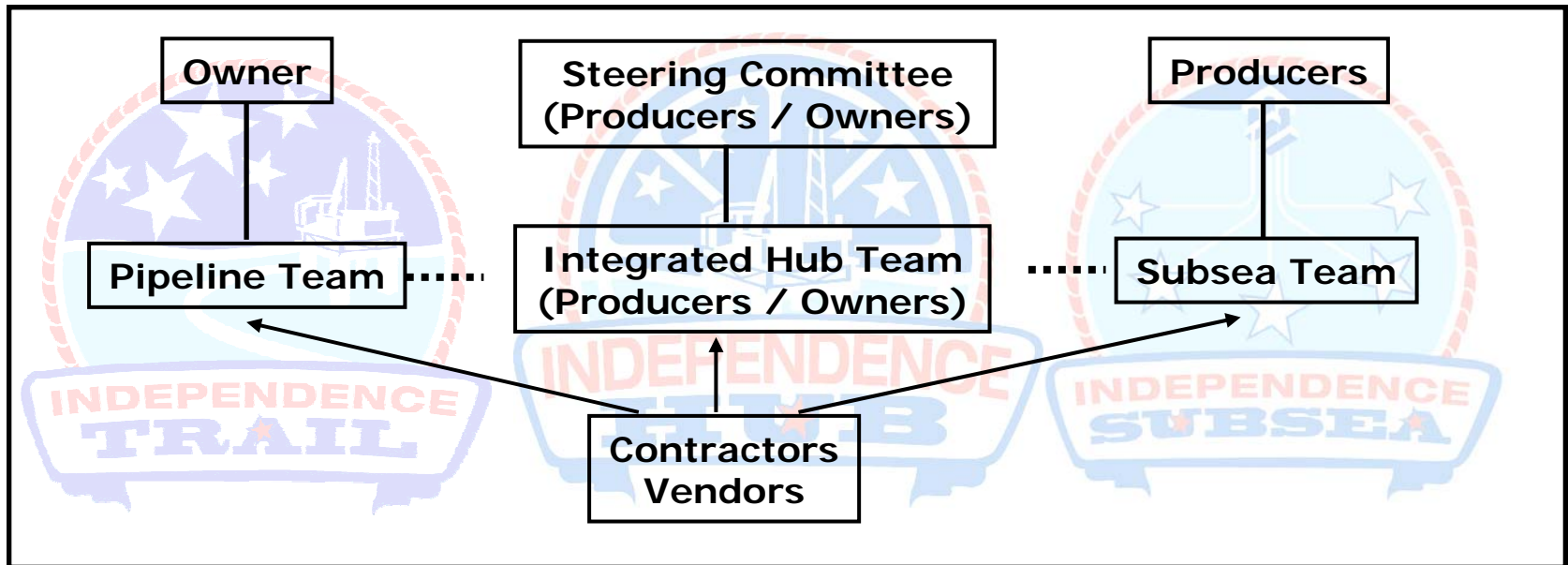
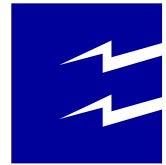
Commercial Agreements

- Ownership
- Construction
- Operation

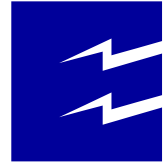


- Platform
- Pipelines

Independence Project Organization



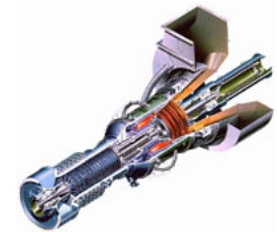
Major Contracts for Hub



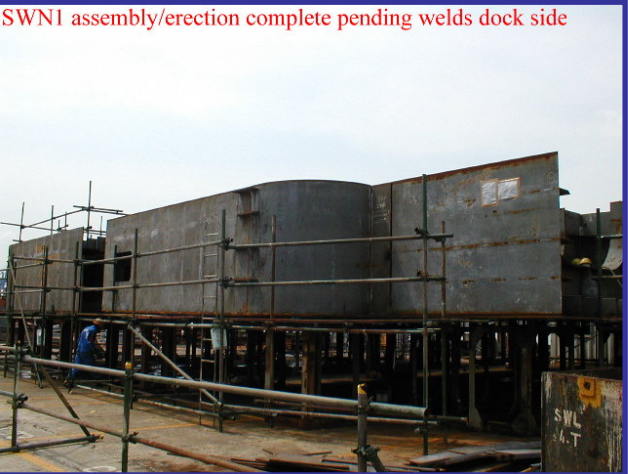
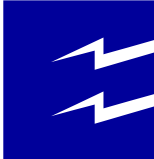
- Hull and moorings design and fabrication
- Installation of the anchor piles, polyester Mooring system along with the Semi-submersible Hub facility



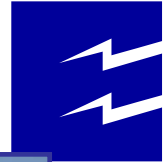
- Gas Turbine Compressor manufacturing
- Structural fabrication of the Topsides and the assembly of the facilities and interconnect piping. KOS will also perform the 8,400 ton lift of the Topsides onto the Hull and the integration activity



Jurong Fabrication Progress

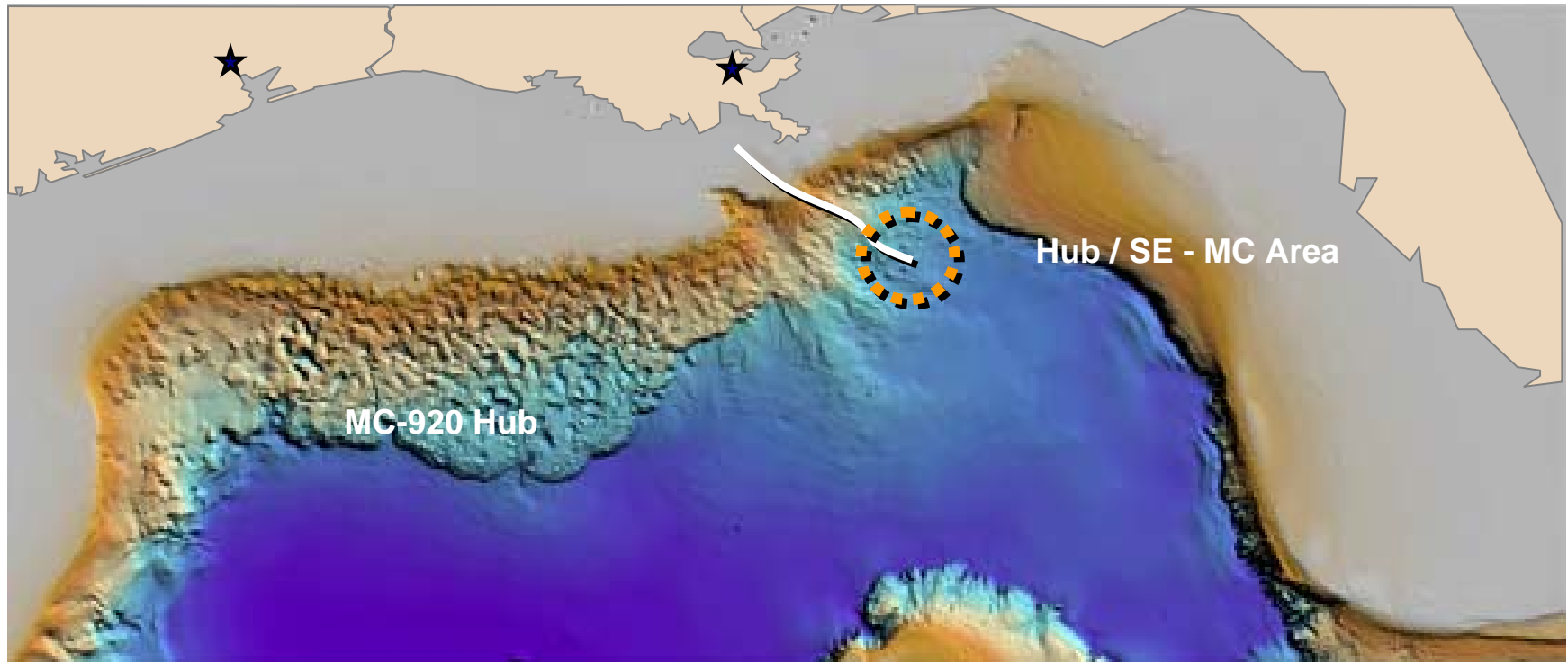
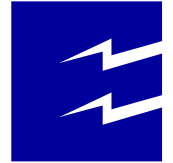


Fabrication Progress – KOS Topsides





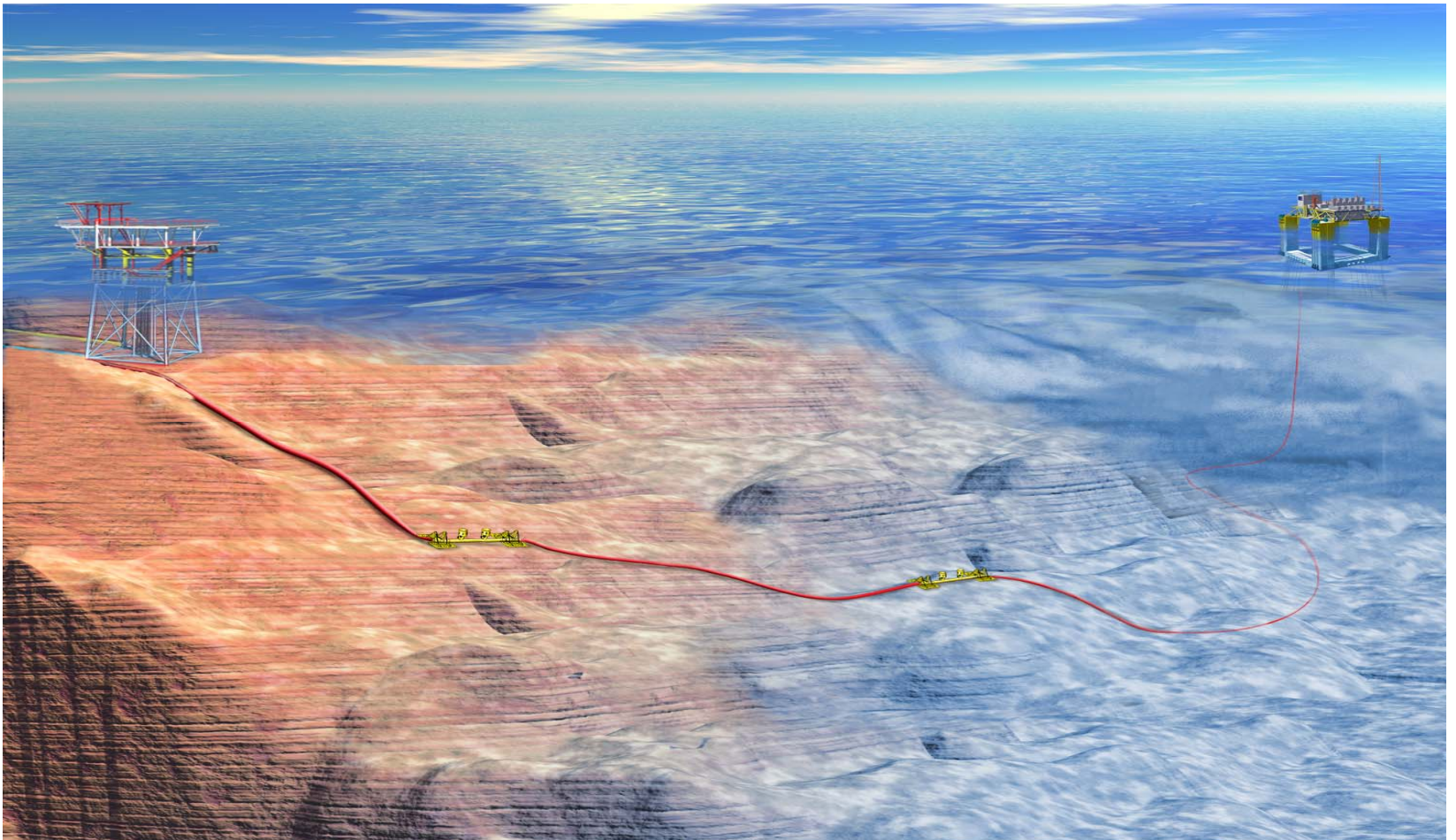
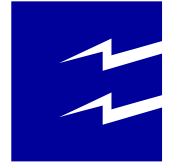
Independence Trail



Independence Trail will initiate as a 24-inch diameter pipeline at a new fixed Platform in WD-68 in approximately 115 (fsw) and extended southeast a distance of approximately 134 miles and ending with a 20" SCR onto **Independence Hub**, in MC-920 in 8,050 (fsw).

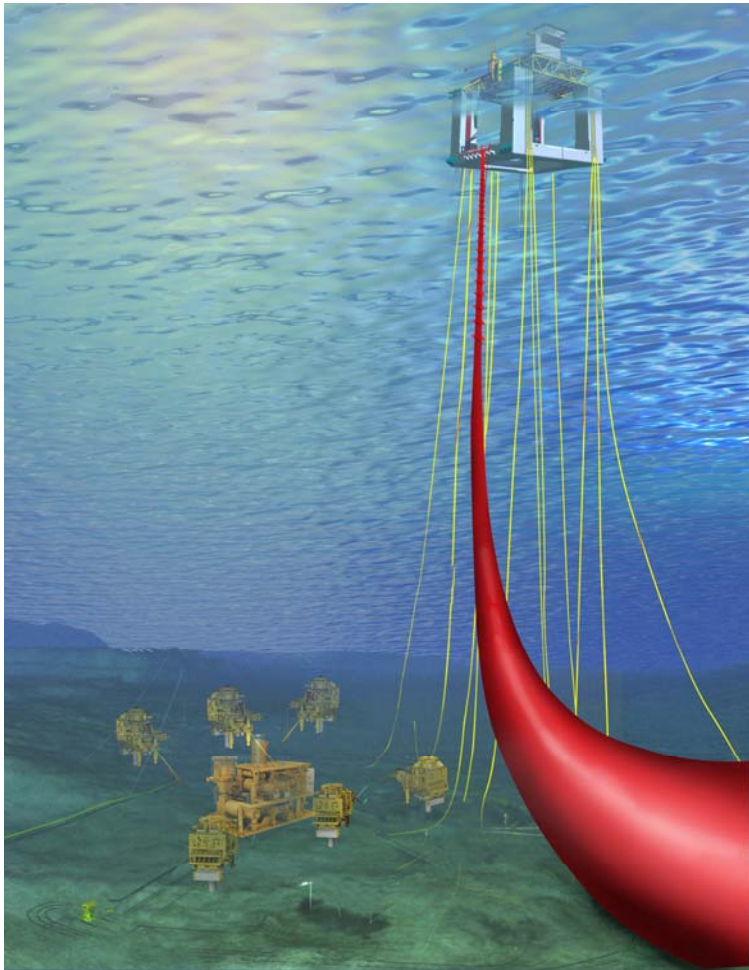


Independence Trail





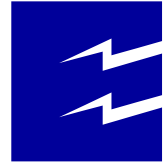
Independence Trail SCR



- 20-inch and W.T. of 1.21-inch
- 9,000 feet of VIV Strakes
- Maximum lay-tension of 600 te.
- Dry recovery weight SCR ~ 460 Te.
- Wet recovery weight SCR ~ 900 Te.



Line pipe



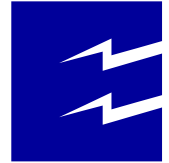
Welspun



Voest Steel Mill

- 24-inch line pipe with four W.T. (0.95", 1.07", 1.22", 1.35") and 20-inch SCR with W.T. of 1.210"
- Steel plate from Voest Alpine and Ukraine
- Pipe rolled by Welspun (India)

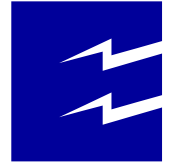




- **Stinger Elongation from 110 m to 140 m**
- **Tension Up-Grade 525 MT to 800 MT**
- **A&R Up-Grade 420 MT to 1,000 MT**
- **Additional Aft ship buoyancy / 4,000 MT**

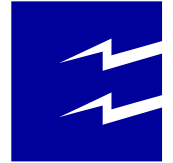


Solitaire / Rotterdam

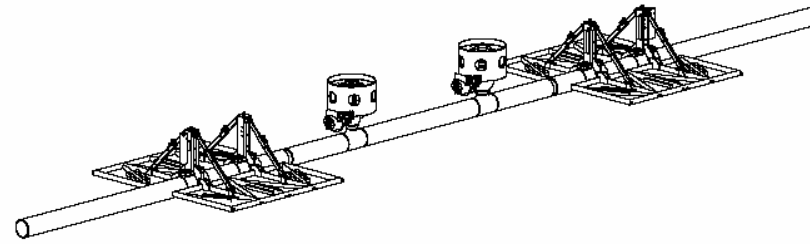
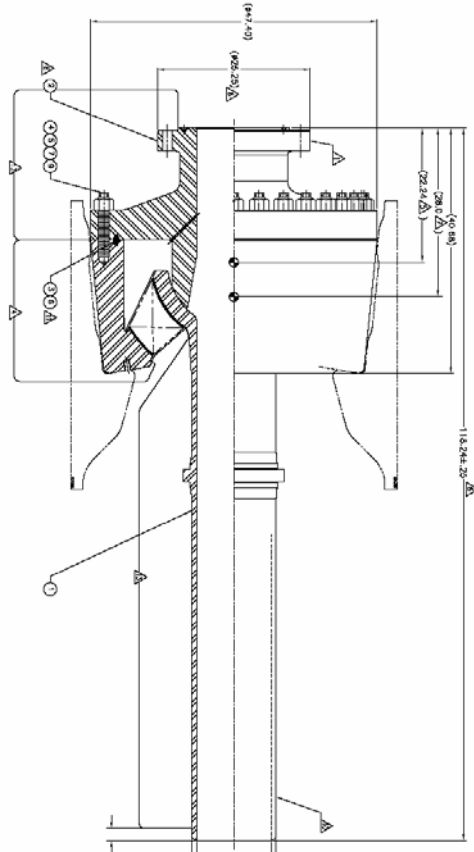
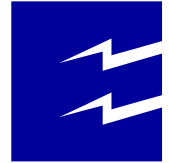


Vessel back to work in Norway

April 2005



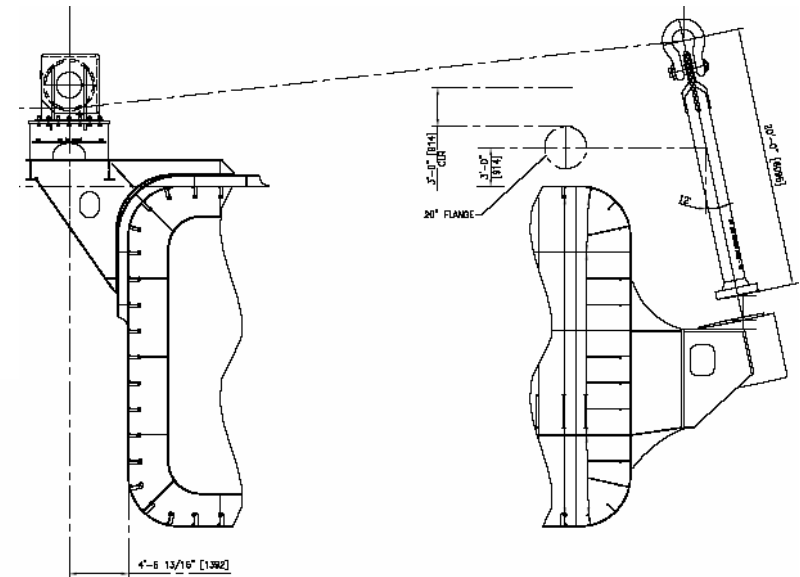
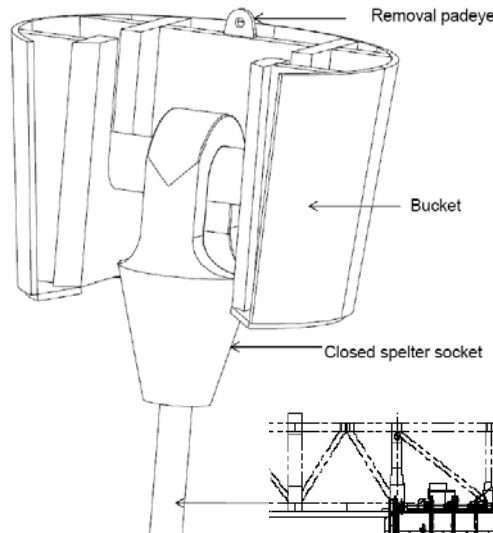
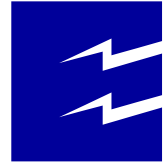
In-line Dual T- Sleds and Flexjoint



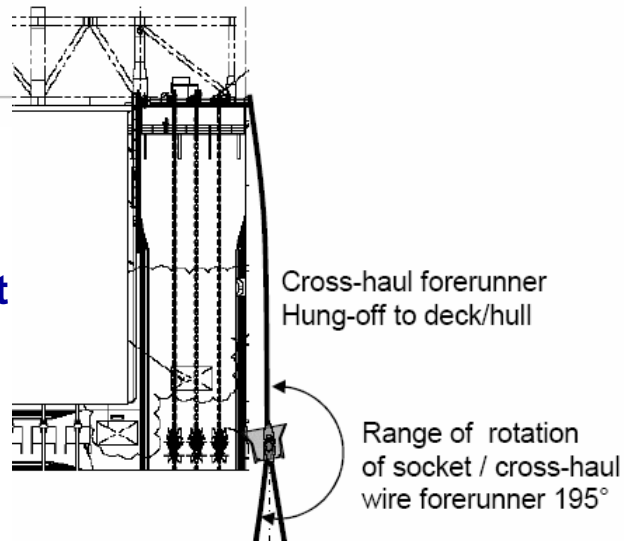
- **20" SCR Flex- Joint & Dual Tee Assemblies (12-inch and 16-inch on 24-inch)**

Oil States

Riser Recovery and Hang-Off

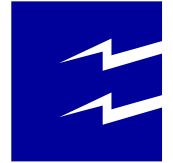


Cross Haul Support bucket



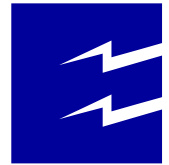
- SCR Cross Haul hang off rigging
- Lift and Hang sequence
- Hull mounted pull-in structures and sheaves

Keys to Success



- Collaboration and open discussion of problems and challenges
 - Performance of project team, vendors, contractors
 - Interface management
 - Timely completion of all wells
 - Regulatory review of permit applications and development plans
 - Environmental ‘forces of evil’ (hurricanes and loop currents)
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To be Continued.....



In 2006

