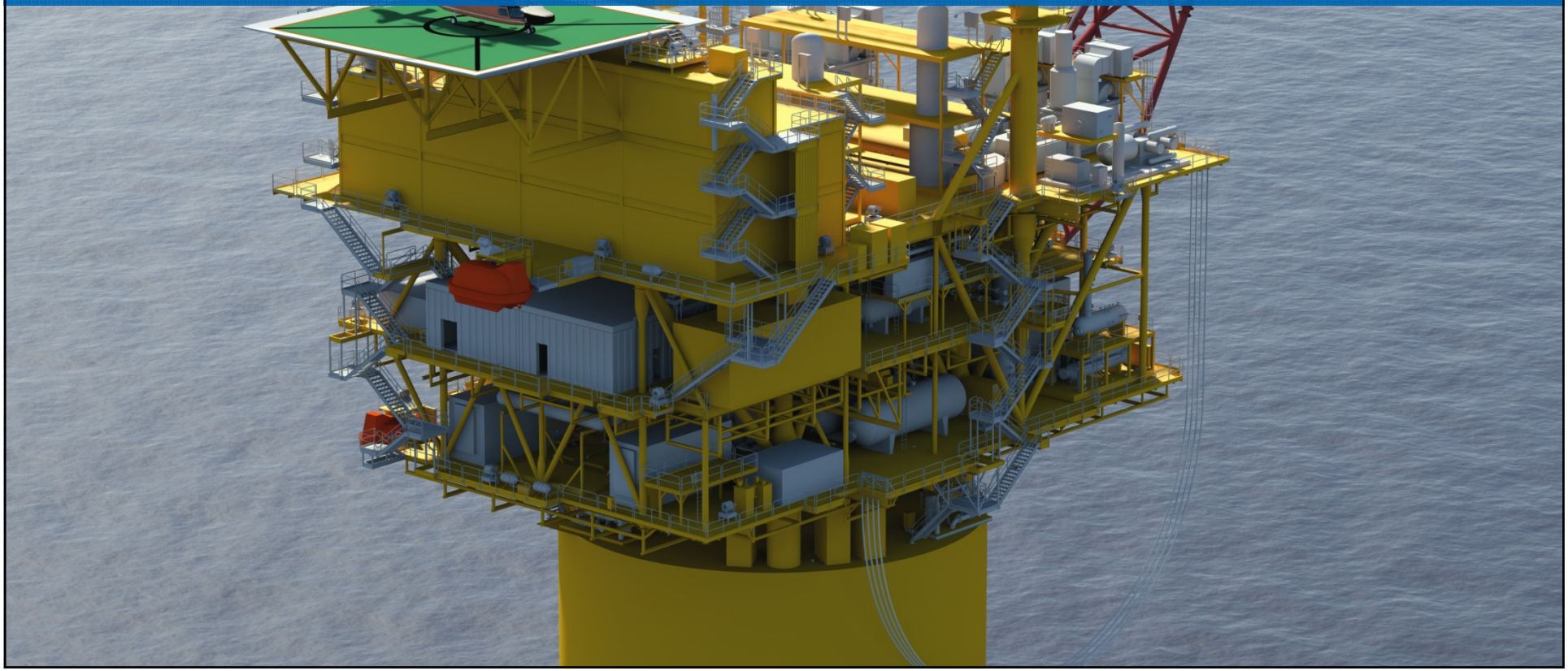
Offshore Reliability, Made in America

Stafford Menard, Gulfstar Development Manager

API Delta Chapter

August 13, 2013



Overview of today's presentation

- Gulfstar vision
- Build American
- Gulfstar features
- Update on GS1 fabrication
- Commercial
  - Fee structure
  - Definitive agreements
- Delivery schedule

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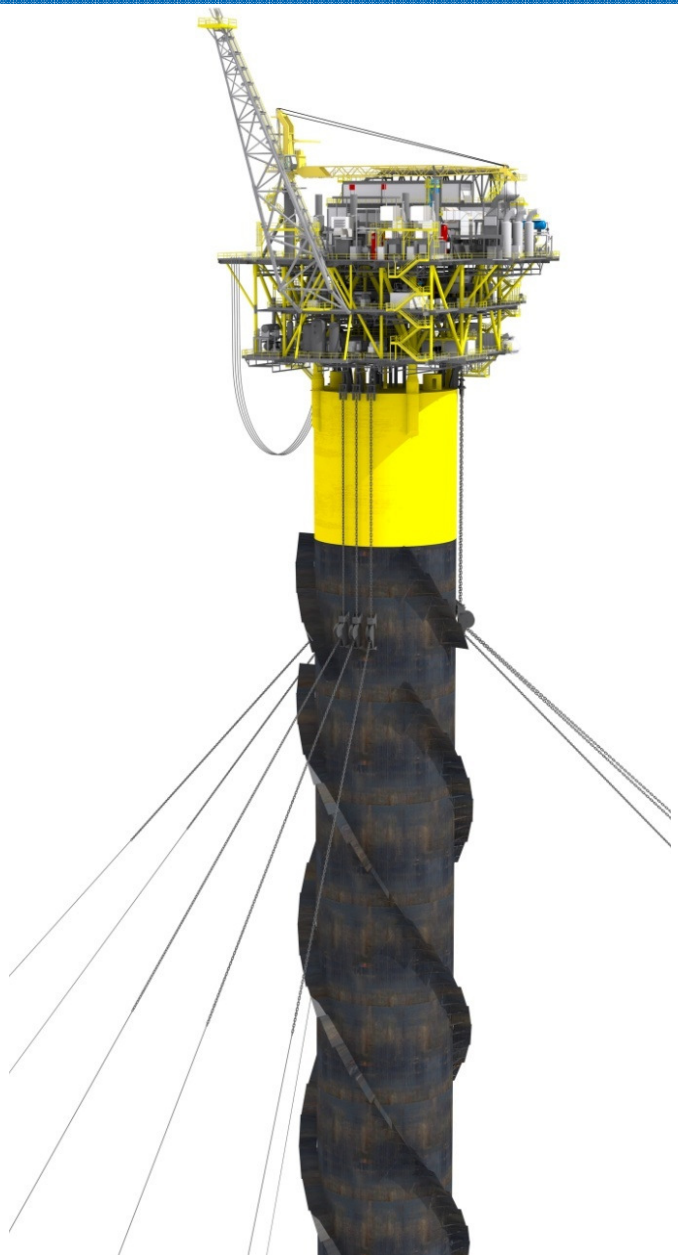
Gulfstar vision

- Design one; build many
- Develop core module with “plug and play” options
- Continuously improve design through lessons learned
- Enhance safety and reliability with each follow-on unit
- Provide significant reduction in delivery schedule
- Reduce risk of E&C cost overruns
- Align producer and owner interests and drivers



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Build American

- First FPS (traditional spar hull) constructed in the United States
- Benefits
  - Provided over 1,000 jobs in more than 20 states
  - Sourced 90% of materials/equipment domestically
  - Reduced cost of site construction management team
  - Eliminated risk of trans-ocean tow
  - Eliminated risk of currency exchange
- Challenges
  - Securing skilled craftsmen in Corpus Christi area
  - Maintaining fabrication schedule and installation windows
  - Overcoming new “lessons learned”

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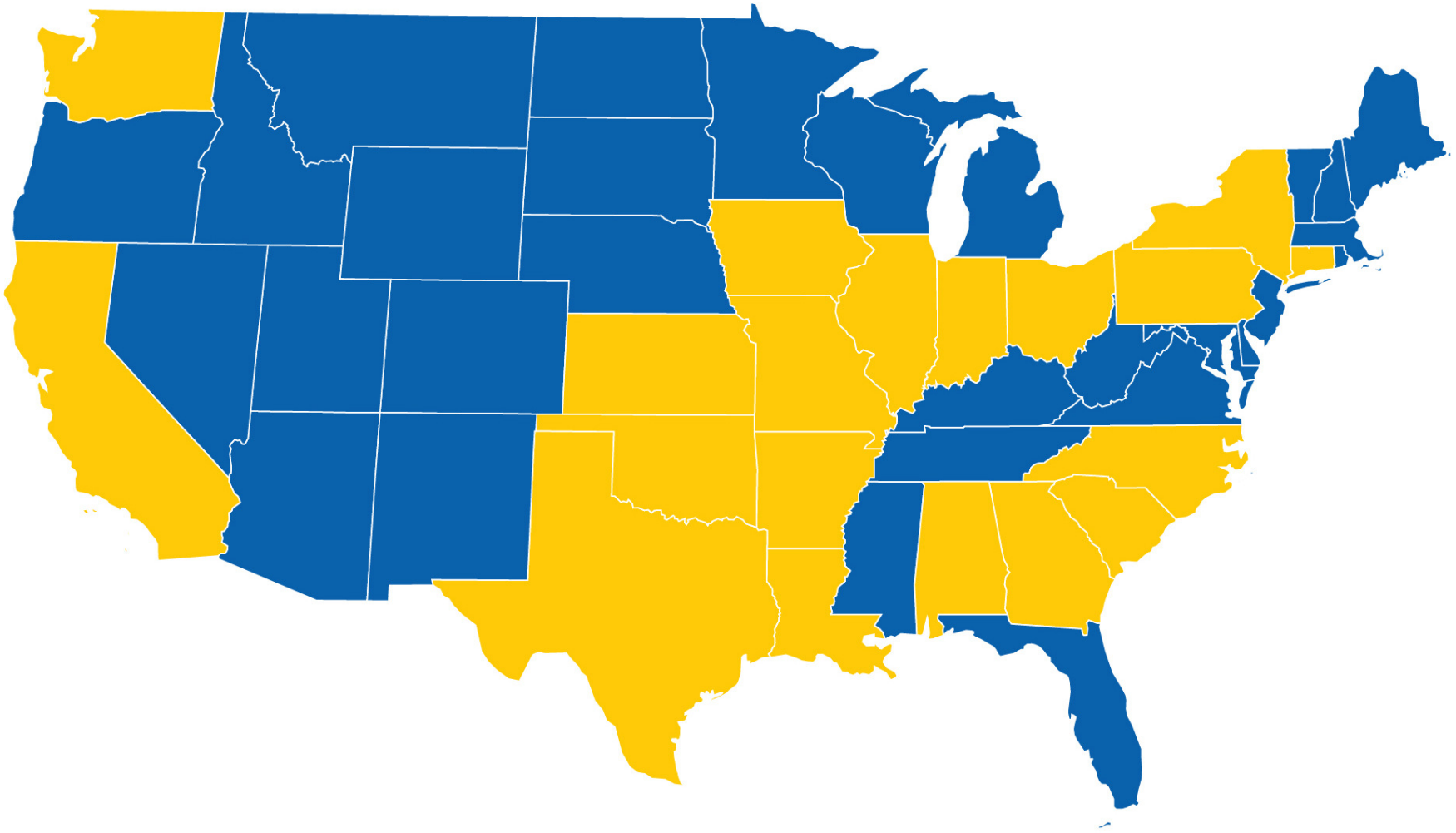
1,000 jobs in 20 states



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GS1 nameplate

- Capacities
  - 60,000 bopd
  - Up to 135 MMcfd
  - Up to 40,000 bwpd
- Seawater injection
  - 1 x 60,000 bwpd unit @ 8,500#
- Base export
  - Gas: 1,850# (boosting to 3,200#)
  - Oil: 2,310# (re-stage for 3,200#)

Marubeni Group

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GS1 topside: Key characteristics

- Three-level deck
- Wells: wet trees only (no rig)
- Max. operating payload: 8,600 s. tons (includes payload for options)
- Production separation: 3 two-phase x 40,000 BLPD
- Test separation: 1 three-phase x 40,000 BLPD
- Power generation: three T-60s
- 50-person living quarters
- Helideck: S-92 helicopter
- Lift: single piece, 6,600 s. tons
- 25-year design life

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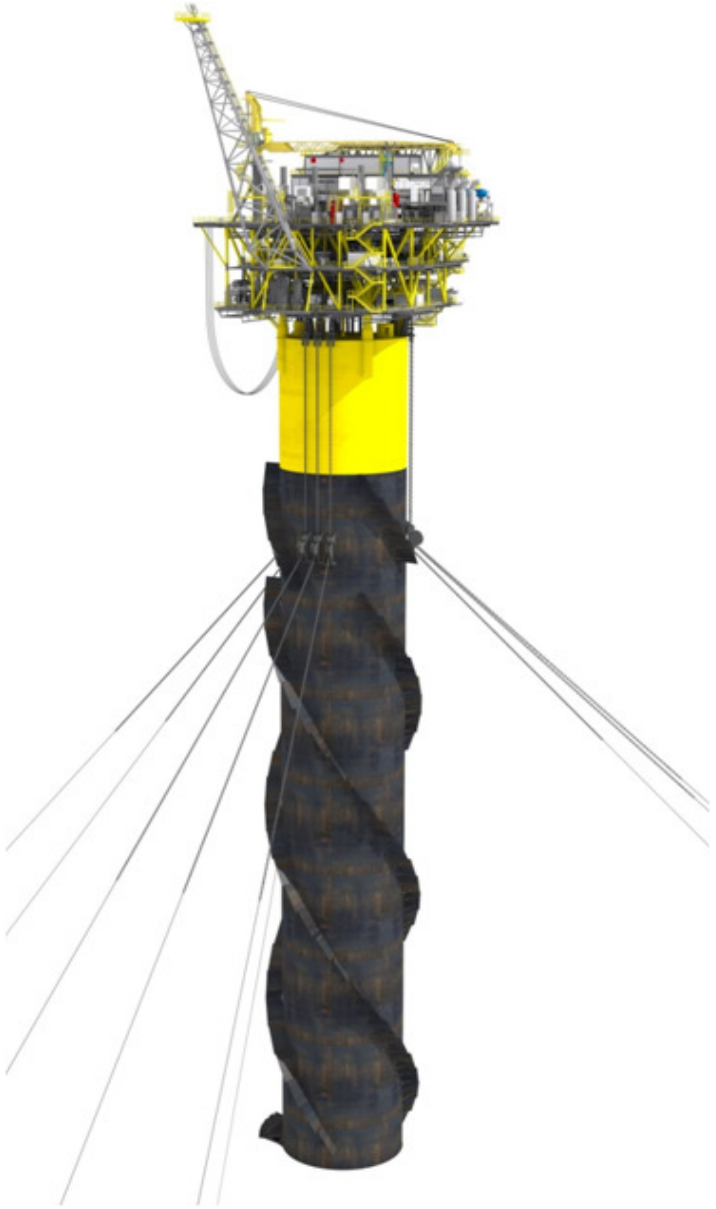
GS1 hull: Key characteristics

- Hull form: classic spar
- Water depth: 3,000 ft. – 8,500 ft.
- Outside diameter: 85 ft.
- Freeboard: 60 ft.
- Draft: 524 ft.
- Centerwell: wet, circular, 30’ diameter
- Strakes: 11’ (13%), 3 starts
- Fixed ballast: 9,500 st
- Mooring system: polyester, 3x3
- Fairlead elevation: (-) 88 ft.



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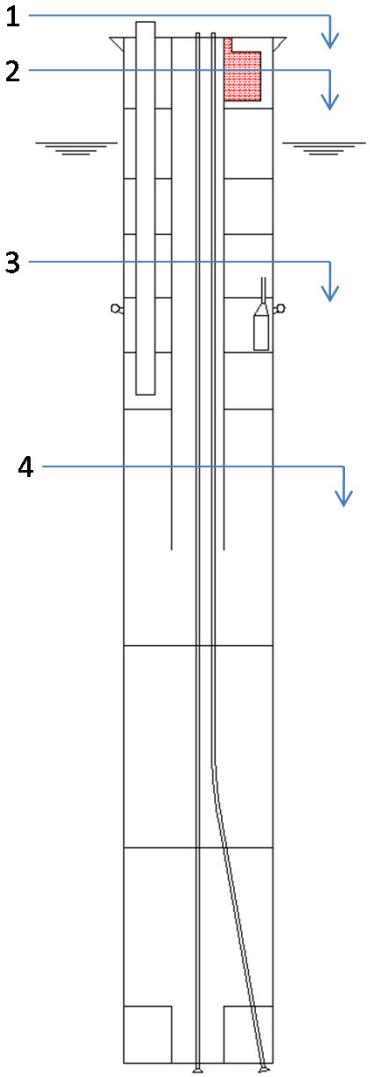
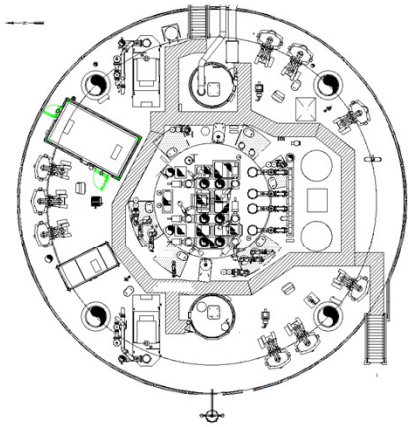
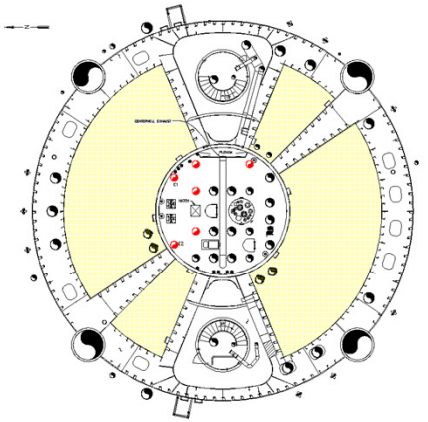
Hull configuration

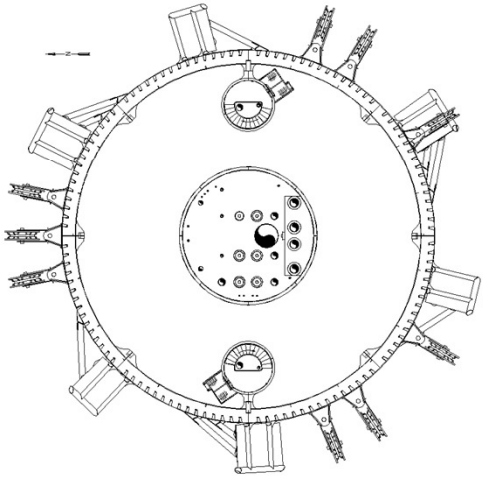




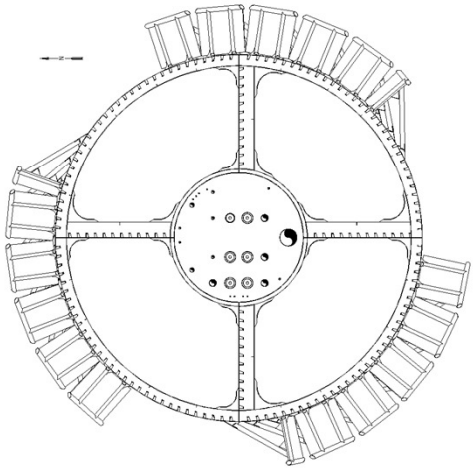
1 - Top of Hull



2 - In-hull Storage



3 -Typical Void



4- Seawater Ballast Tanks

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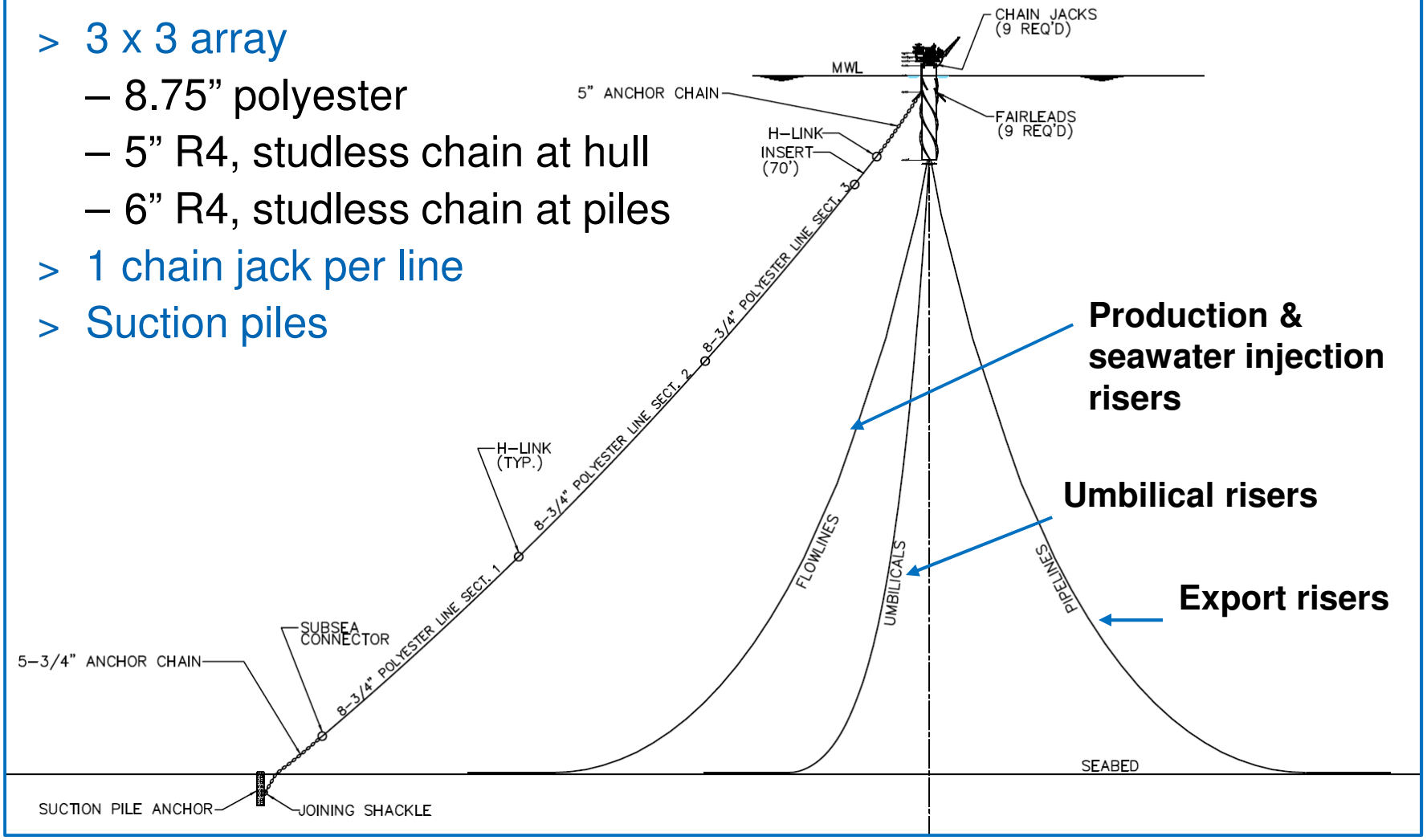
Mooring system

- 3 x 3 array
  - 8.75” polyester
  - 5” R4, studless chain at hull
  - 6” R4, studless chain at piles
- 1 chain jack per line
- Suction piles



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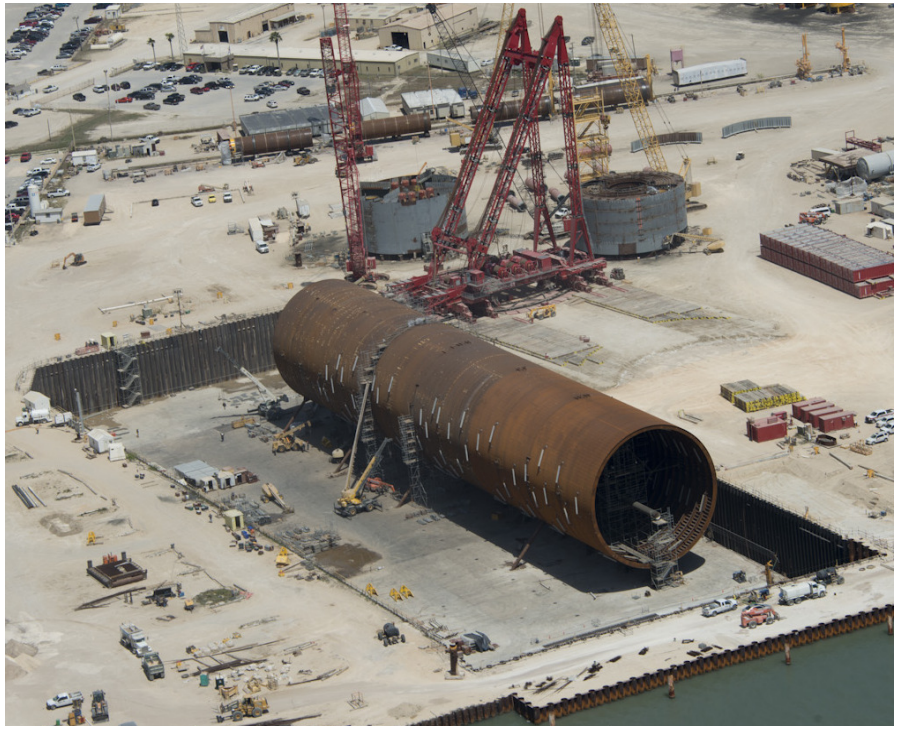
GS1 construction under way

- Hull fabrication: Gulf Marine Fabricators – Ingleside, Texas
  - Target completion date – Q4 2013



- Topsides fabrication: Gulf Island Fabricators - Houma, La.
  - Target completion date – Q1 2014

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Panel line and quarter jigs

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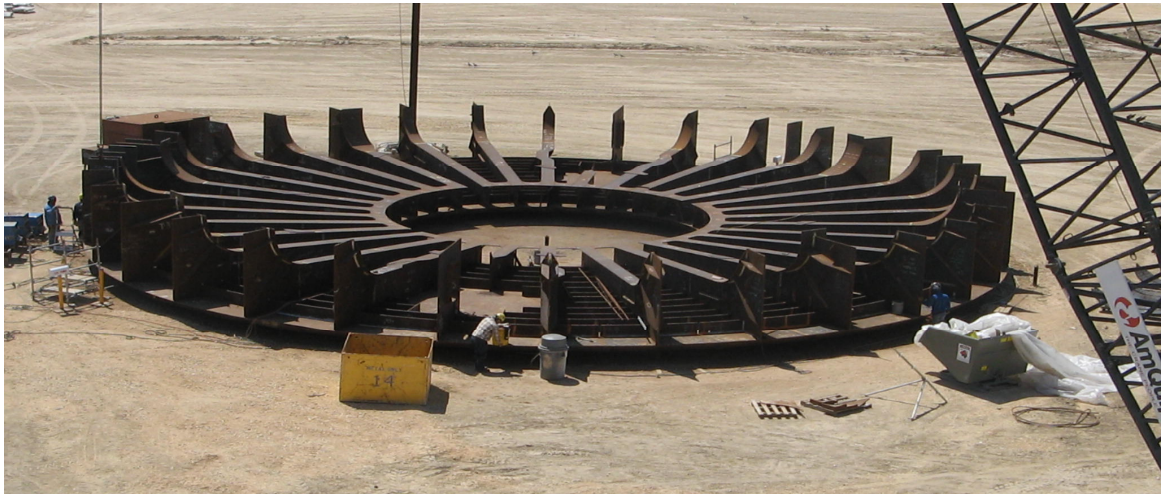
Hull block assembly



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Rotating and setting first block

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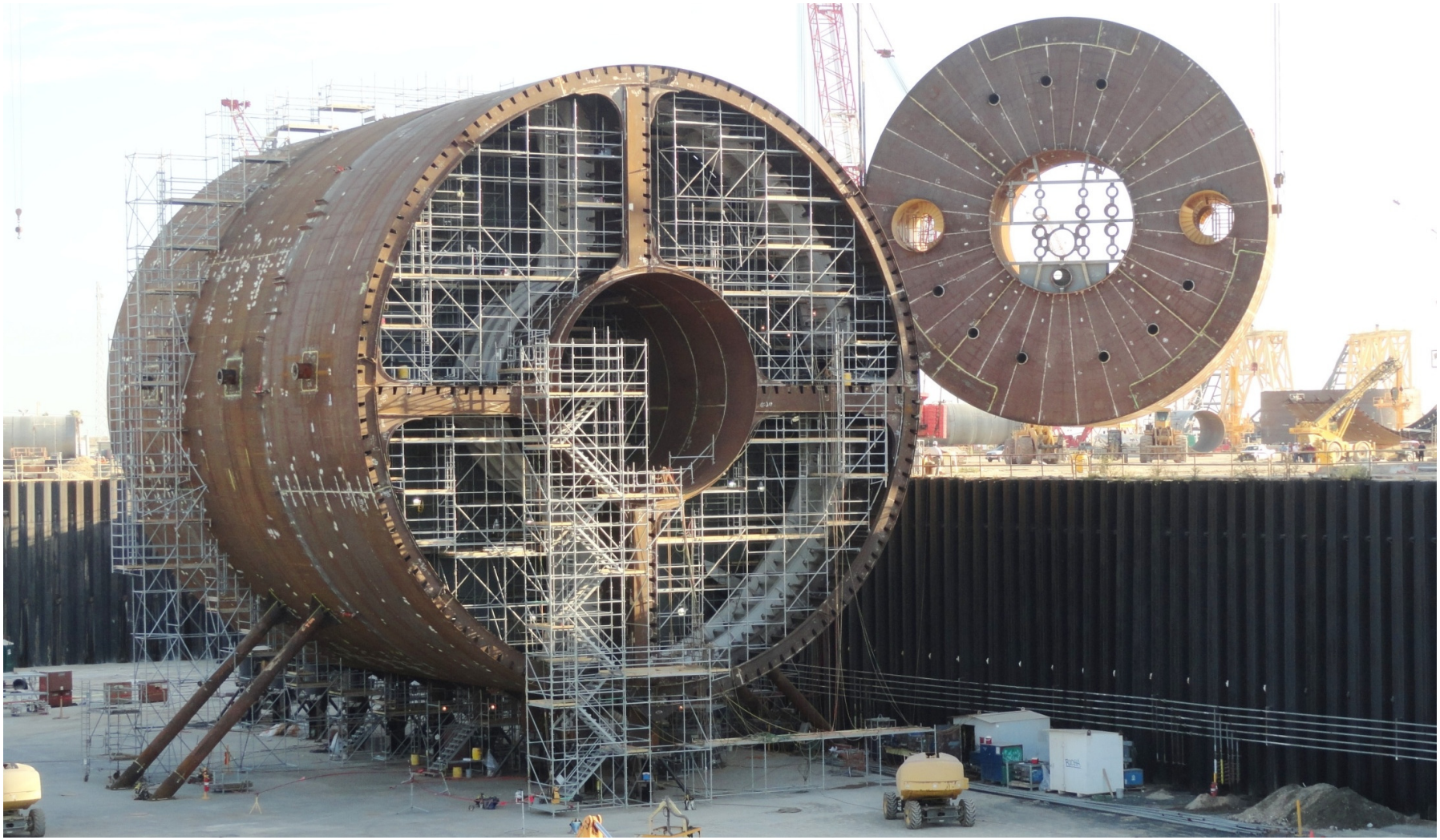
Setting of fourth hull block in graving dock



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Hull assembly — November 2012

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In-hull storage blocks

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Hull assembly — May 2013

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Topsides cellar deck

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Production deck lift

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Production deck float

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Main deck lift

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Offshore installation campaign

Technip Deep Blue: Flowline installation

Technip G1200: Export installation

McDermott DB50: Hull & mooring T&I

Saipem 7000: Topsides lift

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The commercial deal structure –GS2

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Firm capacity reservation matches P-50

- Oil: First six years, producer to establish requirements (MBOPD) in two-year increments (see next Slide)
- Gas: Producer's GOR * oil MBOPD
- Produced water: Initial up to 20,000 BWPD (firm) but adjusted for actual requirements up to 40,000 BWPD
- SWI: Barrel for barrel based on oil production handling reservation

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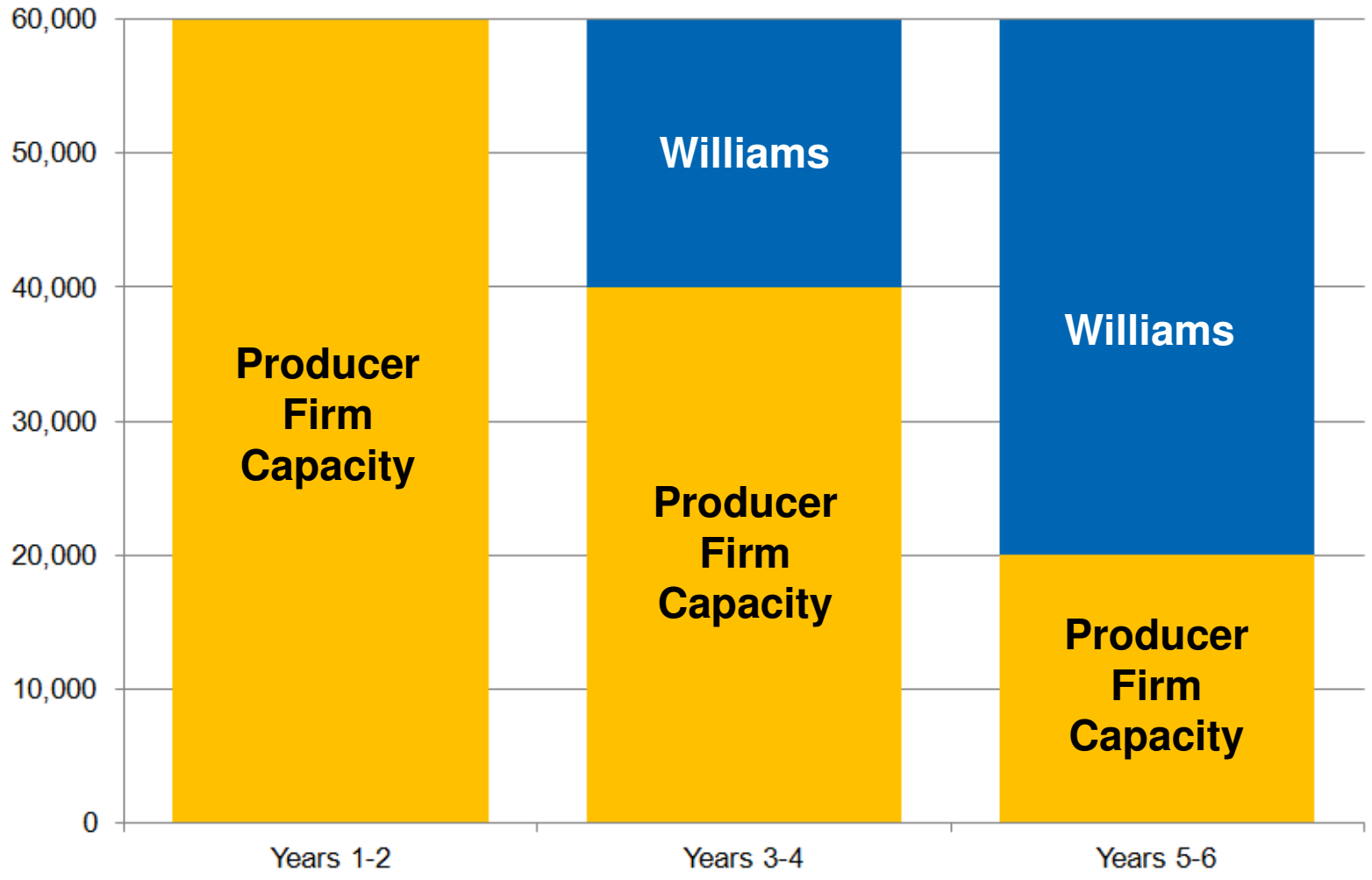
Commercial — oil firm capacity



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Commercial — firm fees

- Infrastructure access fee (IAF)
  - Fixed monthly payment for 72 months
  - IAF based on producer's firm capacity requirements
- IAF provides:
  - Use and access to host and host facilities
  - Boarding access: (2) J-tubes for production, (1) I-tube for SWI and (2) I-tubes for umbilicals
  - Services provided by owner: accounting, billing, administrative, etc.
  - Quartering (up to 2 liaison personnel)
- Production handling fees (PHF) - $/BBL and $/Mcf
- FPS O&M – 100% reimbursable by producers (allocated on BOE throughput basis)

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Commercial — definitive agreements

- Gulfstar definitive agreements
  - CCA – Construction coordination agreement
  - PHA – Production handling agreement
  - OEA - Oil export agreement
  - GEA – Gas export agreement

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GS2 delivery schedule

Scope	Delivery Schedule (Months)																																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Execute I/A	X																																			
Site Specific Engineering																																				
Reserves Data Room																																				
Execute PCA				X																																
Detailed Engineering																																				
Procurement of L/L \1																																				
Award Hull Fab \2																																				
Award Topsides Fab \2																																				
Develop Firm Fees																																				
Project Sanction										X																										
Project Execution																																				
Onshore PCC																																				
Install H&M																																				
Install Export P/Ls																																				
Install Flowlines																																				
Pull-In Risers																																				
Install Topsides																																				
Install Umbilicals																																				
Offshore Hook-Up & PCC																																				
First Production																														X						

\1 Procurement of Long Leads (L/L) subject to Cancellation:

Cellar Deck L/L: Pipeline Pumps; Crude Cross Exchanger; Production Manifold; Emergency Generator

Production Deck L/L: Flash Gas Compressors; MCC Building

Main Deck L/L: Living Quarters; Solar Turbines; Crane

\2 Award Contracts subject to Cancellation

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Gulfstar FPS™

Floating Production System

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