



JEM ADVISORS

The background of the slide is a photograph of several large, cylindrical industrial storage tanks. The tanks are arranged in a row, receding into the distance. They have a metallic, ribbed appearance. The lighting is somewhat dim, giving the scene a blueish-grey tone. The tanks are the central focus of the lower half of the slide.

JEM Advisors Case Studies – Major Project Planning and Execution

JEM Advisors Case Studies

Overview



Case studies have been summarized to illustrate specific expertise and experiences that JEM Advisors have with planning, executing, commissioning and starting up large capital projects.

Some of these case studies represent work done by Advisors working within the JEM Advisors organization. Other represent experiences individual Advisors gained prior to joining the JEM Team.

JEM offers experience which spans the energy spectrum, delivers multi-company best practices and provides a solid skillset in project delivery and operational excellence.

JEM Advisors would be pleased to work with clients to develop a proposal to develop a Project Delivery System to assure major project excellence.

JEM Advisors Case Study

Project Execution Optimization



Challenge

A \$20+B Upstream/Midstream Project in a remote location with extensive site development and broad in-country requirements. Coupled together, these challenges were expected to have a significant impact on the project's cost and schedule performance.

Actions

Studies were conducted to determine methods to optimize the project cost and schedule during the site development period as well as reduce the remote location personnel logistic impacts:

- Modularization of key ISBL and OSBL portions of the facility were identified
- Evaluations were conducted of numerous module fabrication yards
 - Identified technical, physical and staffing capabilities and constraints
 - Identified equipment, yard and execution enhancements
- Partnered with transportation specialist to optimize loading, transport & unloading of modules

Continual improvements and monitoring of fab yard performance was required during module construction:

- Staffing adjustments
- Contractor supplied and Company supplied material management
- Module transportation weight and anticipated completion date coupled with vessel availability
- Management of carry-over work to remote job site

Results

Modules were built in three different fabrication yards to provide the technical expertise and delivery schedule required to maintain the optimized parallel construction schedule.

Peak site manpower was reduced which in turn reduced the number of required beds, catering and transportation requirements.

JEM Advisors Case Study

Completions



Challenge

A Petrochemical Complex Project on the US Gulf Coast with a wide-range of process, utility and chemical ISBL / OSBL systems to handover. Project product marketing commitments and contracts had been signed and were incorporated into the Project's schedule. Completion of system work historically reaches a point where the contractor starts asking the owner "can you live with" incomplete work on a system. This approach requires additional work after handover to complete the system and ultimately delays the start-up activities. Requiring contractor to be "completely finished" when handing over systems to the start-up team is a critical component to improving a project's outcome.

Actions

EPC firms understand the importance of handover and have processes/tools to help them, and owner involvement is essential to fine tune the process for a seamless handover.

The Owner handover requirements were incorporated into the EPC contract. The key components were:

- Staffing requirements for EPC, key subcontractors and owner's team
- Defining Mechanical Completion (e.g. loop functional testing, insulation, scaffolding, etc.)
- Subcontract development requirements (e.g. insulation adder for installing "block-outs")
- Handover planning requirements including Civil and I&E systems plus sub-systems to better facilitate the system walkdowns and start-up
- An innovative system completion grading matrix tied to a "completely finished" incentive program

Results

- The project was completed and successfully started up 2-3 weeks ahead of schedule. The factors that lead to the schedule improvement were:
- Execution improvements (e.g. completing insulation prior to walkdown)
- System tracking tools with EPC's and Owner's information requirements to help ensure system is ready for walkdown
- Walkdown team size and responsibilities well defined (not a review by committee)
- Level of completeness at the time of the walkdowns got better and better as the handover progressed for two reasons:
 - more stringent grading criteria was made after the foremen had been made away of an issue (e.g. missing bull plug)
 - walkdown grading competition between the foremen who sought to have a better walkdown grade than their peers

JEM Advisors Case Study

Start Up Planning for Risk Reduction



Challenge

An aromatics expansion project team had a project objective to produce on test product at normal rate within 6 – 8 weeks of feed introduction. During baseline discussions with Independent Project Analysis (IPA) they were told they had less than a 1% chance of meeting this startup objective and should be planning on 8 months to accomplish their objective.

Actions

Project Operations personnel, led by one of current JEM Advisors, engaged IPA to determine reasons for protracted start up forecast and visited Company recommended by IPA as Best in Industry at starting up new plants

- One reason was “New Technology” (like RHCU at BMP). Project Operations team addressed this by:
 - Assigning the Patent Holder of new technology to manage Operations procedures to ensure strict adherence to technical requirements (change from normal way the procedures would be developed)
 - Project completion included 2 months of turnaround at end to complete tie-ins. Project Operations team developed plan to test part of new technology that made final product purity while TA was being executed.
 - Determined final product technology not operating properly
 - During TA engineered and installed piping to utilize old product purification section of plant (intended to be decommissioned)
- Another reason for protracted start ups was “Operator mis-response to an emergency” A feeling of pressure to meet schedule even when problems arose
 - Developed a concept of “Safe Havens” and inputted into procedures to allow operations to always know it was ok to “hold” and bring plant into a safe position and then address the issues regardless of what schedule required

Results

By engaging IPA and Best in Industry the Aromatics plant managed start up more effectively and obtained normal rate with on test product within 7 weeks of feed introduction.

JEM Advisors Case Study

Commissioning



Challenge

\$9B Gas to Liquid Project had contracted the EPC to do pre-commissioning after construction and then handover to the Owners commissioning and start up team. The contract included the EPC systemizing the plant. The EPC only considered pre-commissioning needs during systemization, which did not support commissioning effort. They also did not have sufficient resources to properly plan and execute pre-commissioning.

Actions

- The Project Commissioning Manager (CM) (a current JEM Advisor) and his team could not re-systemize the plant as it was late in the project construction and system P&ID's had already been finalized. CM and team developed a new turnover protocol. Developed Sub-Units which were basically "Commissionable Systems" and were combination of one to five of the current systems into a bigger system. This was a simple but very effective solution.
- During delays in field construction the CM loaned 20% of Commissioning team to write and then execute the pre-commissioning procedures. This was an EPC requirement, but it benefited to project to take this action.

Results

- Use of Sub-Units was a tremendous success, which facilitated safe and effective Commissioning and Start up.
- Use of Commissioning personnel assisted the EPC contractor who was not resourced properly to execute this work, and it benefitted commissioning because the pre-commissioning work familiarized the commissioning team on their work.

Learning

- Ensure expert commissioning resources are available in early project phases to develop proper systemization and to ensure contracts include adequate definition of pre-commissioning, commissioning, handover and startup requirements.
- Look for "teamwork opportunities" to drive better project results.

JEM Advisors Case Study

O&M Mentoring



Challenge

Advisor was asked to assist with commissioning, startup, and initial operations of a large sour gas treating facility in Asia. Despite a multi-year training program, the Operations and Maintenance team were inexperienced and not confident with their ability to operate the facility safely.

A focused mentoring program was designed to improve organizational capability in parallel with completion of construction and commissioning the facility, including the following features:

Short classroom refresher training on process and equipment

- Focused additional training on procedures and routine duties – on-site with access to equipment
- Small teams formed to participate with pre-commissioning and commissioning work
- Commissioning experts developed and delivered specific training for more complex equipment:
 - Local control panels for turbo-equipment
 - Furnace lighting safety procedures
 - Boiler controls
 - Flare lighting

Results

- Expert advisors added to each operating shift for commissioning, startup, and initial operation.
- Maintenance advisory support, including development of turnaround plans continued after startup.

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Contract Lessons Learned



Challenge

Advisors were asked to perform an Operational Readiness Review (ORR) for a speciality chemical production facility near the end of the construction phase. The facility was developed by a venture capital firm with little petrochemical experience.

The ORR revealed significant contract omissions and lack of clarity in many key areas, which caused conflicts and disputes, especially during pre-commissioning, commissioning, and handover to owner.

Results

Critical Contract detailed requirements were identified for future projects:

- Basic Engineering and Design Data (BEDD) (including utilities and process design basis)
- Basis of Schedule (define assumptions, calendars, constraints, exclusion, relationships & risks)
- Basis of Estimate (define what's included, excluded, owner's costs, etc. for each component of scope)
- Interactive Planning (best schedule tool to get EPC discipline agreement and owner's understanding)
- Engineering Sequence (P&ID development sequence varies slightly between EPCs)
- Engineering Specifications (Standardize where appropriate, fit-for-purpose)
- Model review (team needs to understand roles and expectations of what they'll see at each review)
- System Sketches (Diagrams showing key components of entire systems)
- Requirements for procedures and owner training / competency programs (Recommend owner team handles)
- Roles and Responsibilities for pre-commissioning, commissioning, handover, and startup
- Specify project documentation requirements (Process safety information, equipment information, QA/QC records, etc.)

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Operational Readiness Process



JEM Advisors have experience developing best practice work processes and leading implementation across entire international enterprises. Our Advisors have proven success building sustainable internal and local capability while implementing projects and work process improvements.

JEM recently worked with a major international petrochemical company to standardize and improve planning and execution processes for Operational Readiness, Pre-Commissioning, Commissioning, Handover and Startup across the company's full CAPEX portfolio. In the first year, these processes have been implemented within 6 major projects, including one "mega-project".

JEM has demonstrated similar capability to transform work processes for Maintenance, Reliability, Mechanical Integrity, and Operational Excellence. We have active digital transformation projects applied to improve reliability, production optimization and safe work permitting.

"JEM Advisors has a very deep bench of capital project management expertise. We found JEM Advisors consultants to be very experienced, knowledgeable, and most capable. Over the course of nearly a year's partnership, we have found JEM Advisors to be more agile, efficient, and faster acting than some larger companies we have worked with in the past.

JEM Advisor's consultants assisted our organization in an assessment of a newly developed Operational Readiness process incorporated into the existing project management process. Their input led to constructive changes and ultimately a much more robust overall project management program. JEM Advisors also assisted us in conducting several project Operational Readiness Reviews along the project lifecycle at designated review control points. During these reviews the Advisor's consultants helped to identify significant gaps and provided professional recommendations for actionable improvements helping these projects track towards successful operationally effective project delivery. "
- Global Projects Leader for major international petrochemical company

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Operational Readiness Process



The JEM Operational Readiness (OR) Process is focused on 6 key areas of Operations activity in early project phases, and 18 areas of critical Operations activity during the execution phase of projects.

JEM have defined specific details in each area that are required to ensure successful commissioning and safe and reliable startup and ongoing operation.

The Operational Readiness Process is optimally started in an early project phase, with OR planning starting early and progressively developing through the project life and OR reviews (ORR) scheduled with key project milestones. JEM can customize the ORR to focus on remaining activities for projects in later stages of completion.

Early Phase OR Activities

- Benchmarking & Performance
- Input & Design
- Tradeoffs & Decision Making
- Planning
- Engagement with Functions
- OR staffing integrated with project

Early Phase OR Activities

- Operating phase staffing
- Competency
- Training
- Risks and Mitigations
- HSSE Management System
- Operations Procedures
- Start-up process, plans, procedures
- Energy Isolation and MoC
- Project Information Management
- Crisis Management
- Maintenance and Reliability
- Operations Support Contracts
- Spares Management
- Permits, Regulatory Approvals
- OPEX and Business Plan
- Handover and Accountability
- Engineering Support
- Construction and Commissioning Support

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The Influence of Reliability & Maintenance



Problems

- Insufficient R&M influence and contribution
- Operations Efficiency (OE) Predictions too high
- Production & Cost issues due to quality of design, construction & commissioning
- Ops Readiness Inadequate: Safety, Reliability, Production, Inefficiencies

Approaches

- R&M Resources systematically deployed to all Major Projects
- Standard Maintenance Build Procedure implemented across the portfolio
- Community of Practice
- Systematic approach to maintainability reviews, HAZOPs, LOPA
- RAM Modeling & OE Benchmarking
- Operations Readiness Performance Management

Results

- A reduction in findings from Start up Assurance Reviews
- An increase in Maintenance Build quality and more consistency
- R&M resource demand (not including techs) dropped from 70% to 25%
- Operations Financial Memorandum (FM) Support paper including trade-off matrix
- OE targets benchmarked against Global Operations performance and documented in FM's before being approved by Head of Operations
- R&M being recognized by project management as value adding (changing mindset)

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The Value of RAM Modeling

Challenge

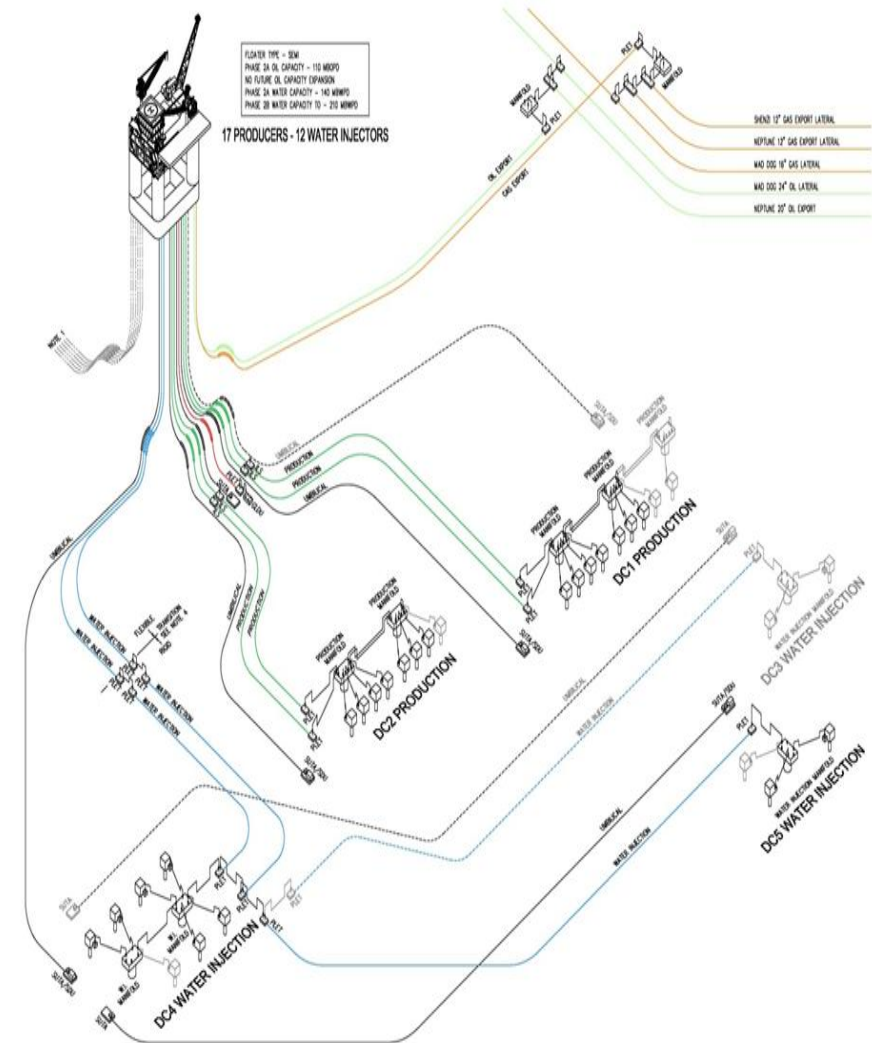
- Project Operations team requested a review of the RAM model in Concept Definition stage prior to entering Define

Action

- 2 day RAM workshop facilitated by Central Project Operations and Project R&M
- Effective collaboration with several teams included in workshop: Operations, Subsea, Planning, Engineering, Reservoirs and Wells; resulted in stronger commitment for future RAM analysis.

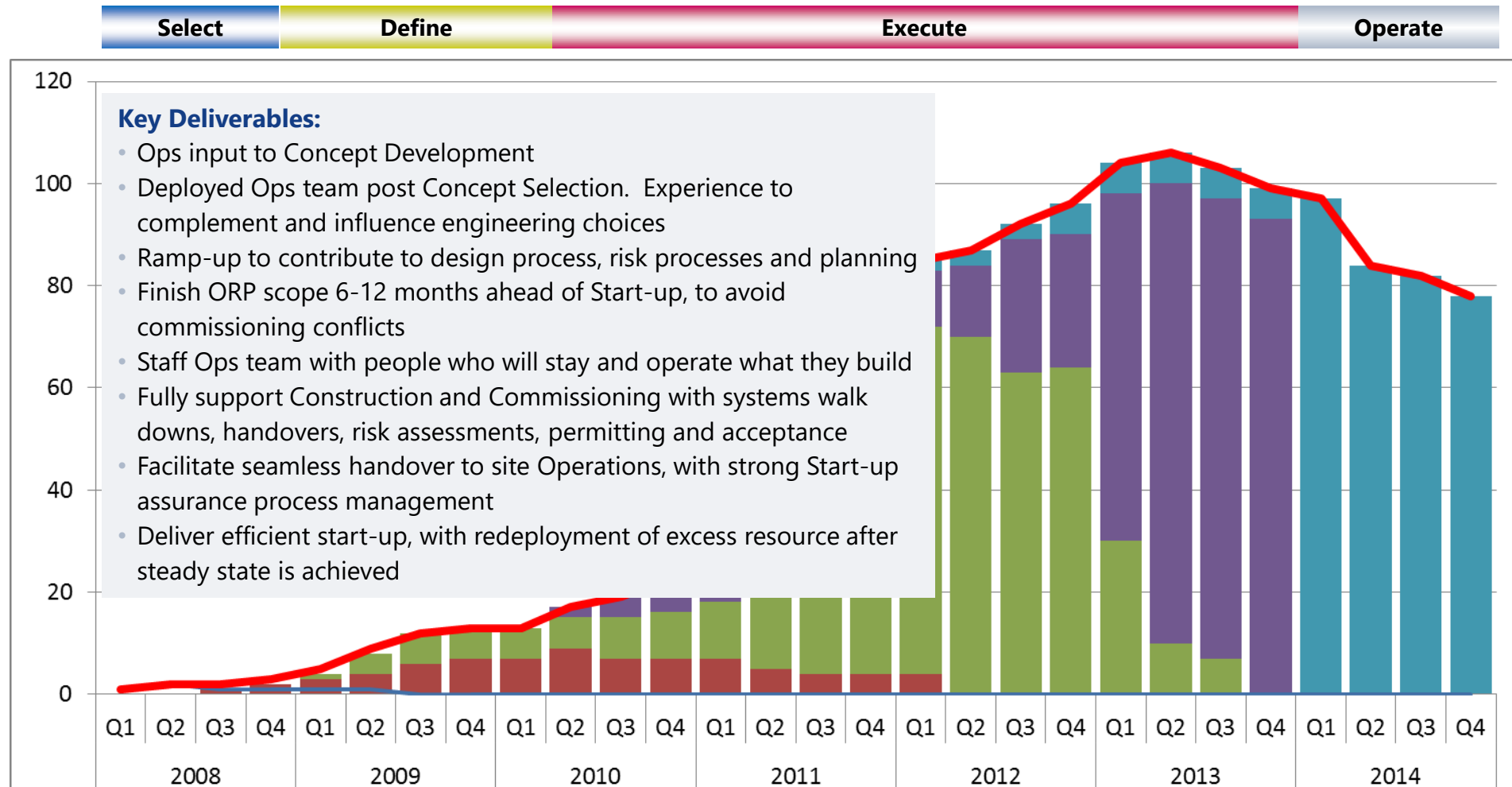
Result

- Presented Report-out to PM and Project Management team, who determined the key takeaways and opportunities to be very useful. Project R&M team incorporated the opportunities.
- Key opportunities identified to improve the RAM Model:
 - Interface with Wells team to understand the Well intervention risk, Develop formal Change Management process and incorporate into RAM model and use analysis to influence design changes, Include R&M team in MoC process in Define/ Execute, Evaluate impact of water injection system on production, Engage with newly created Water injection team, Evaluate impact of sampling (Subsea & Topsides), Surveillance and Stimulation incorporated, Include Cost basis & restocking scheme for spares parts strategy
- Workshop learnings were used by the Project Operations Central Function and Project R&M teams to refine the work around Operations Efficiency Prediction Guides



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OR, What Good Looks Like. . .



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The Benefits of a Quality Maintenance Build



Problem or opportunity:

- Opportunity to improve Operations Efficiency (OE) and deliver a high-quality Maintenance Build on project xx.

What simplification/improvement action was taken:

- High quality Maintenance Program delivered to Regional Operations with minimal issues identified as a result of the Maintenance Build delivery and quality

Who was involved:

- Project Operations, Regional Operations, Project Engineering and Central R&M function

What was the benefit / result & when?

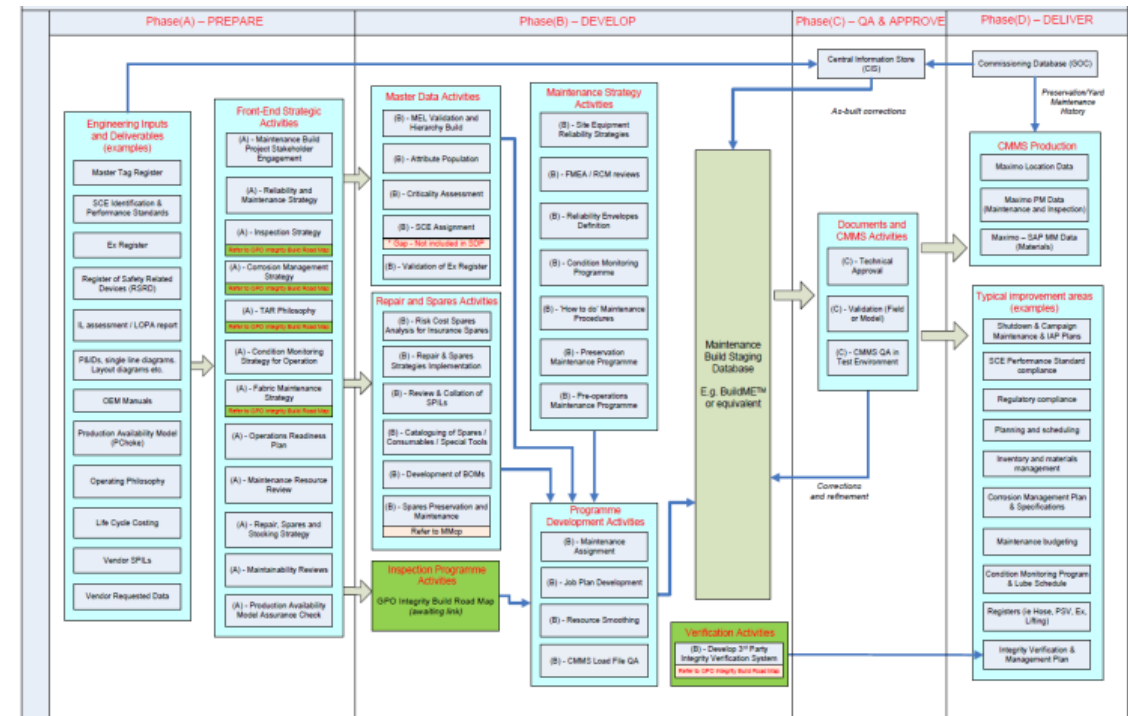
Reliability:

- Above target Operations Efficiency and high Plant Reliability in the 1st 2 years since start-up

	OE % FM (Planned)	OE % (Actual)	Plant Reliability
2014	85%	86.40%	95.20%
2015	89%	91.21%	97.90%

Maintenance:

- High quality Maintenance Build delivered:
 - 98% of PMs did not require changes following first time execution
 - Key learnings and improvements deployed in future regional projects



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Managing Spares



Learnings	Plan	Stakeholders	Measure
<p>Planning</p> <ul style="list-style-type: none"> Underestimated the effort of the Sparing activities – started late and not planning sufficient time Struggle to meet master data requirements – time and resources to get it done <p>Accountabilities</p> <ul style="list-style-type: none"> Unclear roles between functions and Suppliers/ EPC <p>Resourcing</p> <ul style="list-style-type: none"> Lack of early engagement with Suppliers/ EPC/ motivation/ remuneration of the Suppliers/ EPC Lacking a dedicated Spares coordinator or incomplete role 	<p>Stakeholder engagement: Facilitate discussions with key stakeholders to ensure alignment with the guidance and accountabilities are agreed.</p> <p>Implement the Guide: Stakeholder engagement, communication and training on the new process guide and tools (mastering SPIL template, Guide, Performance tracker, Supplier training) – schedule driven as required</p> <p>Performance management: A common Cross-Functional Performance tracker with key milestones and deliverables will be applied by each GPO project.</p>	<ul style="list-style-type: none"> VP PSCM VP Ops VP Project Ops VP Project Engineering PSCM Projects Manager PSCM Directors PSCM Managers Central R&M Manager Project Operations Managers Project R&M Managers/Leads 	<p>PSCM: A common Cross-Functional Performance tracker with no indication of gaps or constraints.</p> <p>Project Operations: Execute – Green indicators on OR Tracker Element 15, Ops Spares & Materials Plan.</p> <p>Operate –Following RCFA’s and investigations, no root causes attributed to spares requirements.</p>

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Managing Spares (continued)

Concept Development Phase

No Activity specific to Spares Process during the Concept Development Phase

Optimize Phase

1. Develop Spares Strategy
 - Insurance Spares Strategy
 - Operating Spares Strategy
 - Commissioning Spares Strategy
1. Develop Contracting and Procurement Plan
2. Develop Spares MM Plan
3. Optimize Phase Exit Criteria

Design Phase

1. Finalize and Implement Contracts
2. Fill SPIL Coordinator Position
3. Implement Catalogue Resources (complete MOC)
4. Kick-off SPIL Data Collection with Suppliers
5. Collect SPIL Data from Suppliers
6. Review SPIL Data Collection for Insurance Spares
7. Master Insurance Spares
8. Procure Insurance Spares (with Packages)
9. Define Phase Exit Criteria

Execute Phase

1. Review SPIL Data Collection and Close gaps for Commissioning Operating Spares
2. Define Non-Master Data for SPILs (Operating Spares)
3. Master SPILs (Commissioning and Operating Spares)
4. Procure Commissioning & Operating Spares
5. Expedite and Track Spares Delivery
6. Receive Spares
7. Confirm Quality requirements met and documentation received
8. Store Spares
9. Consume Commissioning Spares
10. Build Asset Hierarchy and Spare Parts Association
11. Prepare for Handover
12. Execute Phase Exit Criteria

Operate Phase

1. Handover Spares
2. Handover Spares Documentation
3. Enables CMMS and Asset management System

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Preservation



Appropriate preservation maintenance helps verify that equipment operates as intended during commissioning and throughout subsequent operation, minimising any production delays due to equipment quality issues. It also helps prevent the invalidation of equipment warranties by verifying adequate preservation prior to operation can be demonstrated and early involvement from the Operations/Maintenance team increases familiarity and ownership of equipment.

Provide guidance to major projects to better preserve equipment and systems, including:

- Initial Preservation – covers the application of preservatives, the fitting of specified protection to equipment and the appropriate packing by suppliers prior to delivery, in order to prevent damage to the equipment during FAT, transportation and installation stages.
- Warehouse Preservation - covers the inspection of the initial preservation to confirm it remains intact and functioning and covers other periodic activities to prevent damage or deterioration to the equipment while stored prior to installation. It will include bulk materials (pipework and valves) that may be delivered directly to the construction site.
- Installed Preservation - covers the activities required to prevent damage or deterioration to the equipment once it is installed prior to commissioning. It may also include:
 - The re-application of preservation if it is disturbed during the installation process.
 - Prolonged durations for start-up delays, during which appropriate preservation is required.
 - Consideration of the impact of processes such as hydrotesting or dynamic commissioning, which may introduce process or other fluids into equipment.
- Pre-Operations Maintenance – covers the maintenance activities required after equipment has been commissioned, but prior to going into full operation. Once in operation the standard maintenance regime shall normally apply.

Result

- Minimized delays to start-up and improved equipment reliability.

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AQ/QC: System Cleaning



Challenge

- Project experienced substantial rework and increased expenditure when having to replace several production-critical ball valves.
- On inspection, the defects were identified as welding slag and construction debris trapped between the ball and the seat, causing scoring and leakage.
- Following a RCFA, the root cause was deemed to be lack of effective flushing and purging procedures following hydrotests.

Action

- Develop a robust flushing and purging procedure that can be applied to a wide range of process designs and systems.
- Include any process-specific and mechanical cleaning requirements (process chemistry & moisture elimination requirements, piping passivation, low chloride requirements in SS systems, lube oil system flushing, etc.)
- Ensure all piping and equipment is cleaned and dried, meeting specification prior to introduction of hydrocarbons.

Result

- Minimized delays to start-up and improved mechanical integrity and reliability.

CLEANLINESS SPECIFICATION		
Cleanliness Spec	Description	Example
Gross (G)	large foreign material removed	laydown debris
Medium (M1)	All <u>visible</u> foreign material removed to reduce time for future cleaning or minimize impact of changing out strainers/filters during commissioning	All visible loose and rust/fine debris (dust) has been removed. Flush medium will be free of visible suspended solids.
Medium (M2)	All foreign material to a specified size (microns) is to be removed to protect downstream equipment (i.e. catalyst, burner nozzles)	40 micron mesh filter in line for particle removal.
Fine (F)	All foreign material removed to a target specification, chemical analysis, or particle count	target surface impacts, titration analysis, or millipore sample

DRYING METHODS		
Drying Methods	Description	Comments
A	Drain hydrotest or Depressure pneumatic test	
B	Drain and add air pressure to blow out low point drains	to ensure no water residual protection
C	Drain and pig with swab pig	to minimize corrosion
D	Drain and dry. Dry (hot) air	Minimum Dewpoint Specified

PRESERVATION			
Preservation Type	Description	Pad	Comments
I	Drain empty and conserve cleanliness	System to be isolated from external environment by valves in the closed position or blinds.	System is empty until startup.
II	Drain empty and reinstall system. Charge system with normal system fluid (steam, etc.) to maintain cleanliness.	System is pressurized with normal system fluid (steam, etc.) to maintain cleanliness.	System startup would immediately follow cleaning.
III	Dry to 0 degC air dew point at system's outlets	Preserved systems to maintain 0.05 to 0.10 barg dry air (0C) or nitrogen. Monitored by regular PM program.	
IV	Dry to -40 degC air dew point at system's outlets	Preserved systems to maintain 0.05 to 0.10 barg dry air (-40C) or dry nitrogen. Monitored by regular PM program.	
V	Purge system with dry nitrogen and then establish a nitrogen pad on the system.	Preserved systems to maintain 0.05 to 0.10 barg dry NITROGEN. Monitored by regular PM program.	



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Appendix

Our Core Competencies

We are a team of senior-level management and technical advisors, most of whom bring 30+ years each of industry practical experience. This team has intimate knowledge of Energy and Manufacturing Operations and Maintenance, Turnarounds, as well as significant expertise with large Capital Project Execution, Commissioning and Startup.

Process Safety and Operational Excellence – We have a passion for Process Safety and Operational Excellence which is evident in all our work. We offer expertise in Metrics/KPIs, Procedures, Operational Discipline, Competency and Training, and Operational Excellence assessment/improvement. Our focus is to ensure that client investment in our services realizes a high and sustainable ROI.

Operational Readiness and Capital Project Management Support – The JEM Advisors Operational Readiness process is a structured approach to planning of Operations, Maintenance, and other Owner activities to be executed concurrently with the project activities to assure optimal design, life cycle reliability, efficient project execution, and readiness for safe commissioning, startup and commercial operation. We have resources for contract development, engineering oversight, procurement processes, systems completions and handover support, and other functions of capital projects.

Transactional Due Diligence – We typically work alongside the purchaser or seller to assist with asset evaluation and environmental exposure of the transaction – as well as staffing options and profitability/CAPEX analysis when required.

Asset Preservation and Conversion Support – We have established cost effective preservation programs for capital projects during construction and for idled facilities, which keep the equipment in operable condition. Our advisors are experienced with evaluating multiple options for asset conversion to improve facility value. We have resources to evaluate contract strategies and advise details that should be included in EPC contracts to improve project outcomes.

Our Core Competencies

Mechanical Integrity, Maintenance, and Turnaround Support – We have deep experience establishing MI programs and optimized Maintenance and TAR processes. Effectiveness in these areas improves safety and reliability and drives down OPEX.

Litigation Support – JEM Advisors provides expert testimony for litigation support, specializing in the Energy sector. This unwavering dedication to integrity distinguishes our services in the field of litigation support.

Asset-Based Digital Transformation – We evaluate overall digitalization goals, but approach the client’s digital strategy from a practical, problem-solving view, involving end users and stakeholders to ensure implementation success.

Functional and Business Strategy Formulation – We work alongside clients to define, align, and implement strategies and programs for new and existing businesses. We can objectively assess current asset performance in support of business strategy development. We are prepared to assist client companies discern how their operations best meet the energy transition.

Leadership Practices and Coaching – We have a track record of helping individuals and teams develop greater awareness and approaches to collaboration and leadership.

Our Team



Gary Yesavage

Gary retired in June 2016 after 42 years at Chevron, where he was President of Manufacturing for Chevron's Downstream and Chemicals. He managed Chevron's El Segundo Refinery and served as Chairman of the Western States Petroleum Association and on the Executive Committee of the American Fuels and Petrochemical Manufacturers Association. He holds a B.S. in Chemical Engineering from Newark College of Engineering.



Tom Hanson

Tom has 33 years with Chevron in Engineering, Operations, and major project leadership. After retiring from Chevron, he now consults in O&G, Petrochemical, and LNG. With a BS in Electrical Engineering from Tulane, Tom specializes in Maintenance, Reliability, efficiency, production improvement, and Turnaround management. Tom is dedicated to safety and mentoring leaders.



Rex Kenyon

Rex has over 50 years in the oil industry, with experience in refining, upstream, pipelines, and chemicals. He retired from Chevron after 29 years, holding Executive positions in El Segundo Refinery and Chevron USA Refining. Rex specializes in Process Safety Management, Risk Management, Turnaround Management, and Maintenance Planning. Rex is Professional Engineer in California with a Bachelor's in Electrical Engineering.

Our Team



Harbo Jensen

Harbo has 40 years in the Petroleum industry, including international operations, corporate governance, and joint venture management. After 36 years at Chevron, he successfully launched a plastics startup. Harbo served 11 years on the MIT Board of Trustees and led technical projects in over a dozen countries. He is an expert in Middle Eastern business and has been a Director at the National US Arab Chamber of Commerce. He holds a Bachelor's from Northeastern, a PhD from MIT, and attended the Haas School of Business and The Fletcher School.



Marise Textor

Marise has over 40 years in EHS programs, working with Chevron, Honeywell, Western Refining, Tesoro/Andeavor, and Marathon Petroleum. She led EHS at major refining and chemical facilities and has extensive experience in EHS auditing, ESG Sustainability reporting, and regulatory advocacy, including air quality under the Clean Air Act. She holds B.S. and M.S. degrees in Chemical Engineering from Cornell University, with Professional Engineer certifications in Texas and California.



Tunji Taiwo

With nearly 30 years in Chemicals, Petrochemicals, and Energy, Tunji has held senior roles at DuPont, Williams Energy, and DCP Midstream. He drives Operational Excellence and business profitability, specializing in Process Safety, Reliability, efficiency improvements, Digital Transformation, Agile development, strategic planning, and risk assessment.

Our Team



Gavin McLeod

Gavin has over 40 years in Refining and Chemicals with 37 years at Chevron. He specializes in Operational Excellence, Commissioning, Project Execution, and Systems Completion. Gavin has overseen the commissioning of 20+ hydroprocessing units and advanced chemical facilities. As Deputy Project Director in the Middle East, he led commissioning and operations. He has led Operational Readiness teams globally for Chevron clients.



Bill Straker

Bill retired after 34 years with BP Exploration & Production, having held key leadership roles. As the global custodian of BP's Common Maintenance Strategy (CMS), he improved plant availability and mechanical integrity. Bill specializes in Reliability, Maintenance, Turnarounds, Process Safety, Mechanical Integrity, and Operational Readiness and managed global contracts and organizational capability for major projects.



Jan Ketcham

Jan has 38 years in Chemical Plant Manufacturing Operations, and Health, Safety, Environmental affairs, and more. She has extensive experience with chemical operations, capital projects, safety culture, and emergency response. Jan spent 26 years with Union Carbide Corporation and held senior roles at INEOS, TPC Group, and an EHS consulting firm. Jan holds degrees from Virginia Tech and is passionate about employee engagement in safety.

Our Team



Rod Spackman

Rod retired in October 2020 after more than 42 years in Public Affairs with Chevron, most recently as Manager of Corporate Affairs for the Los Angeles Basin. He managed relationships with elected officials, regulatory agencies, media, and NGOs, focusing on policy and public affairs to support Chevron's U.S. Downstream operations. Rod also worked on offshore O&G development and regulatory issues at Chevron's headquarters and began his career in Washington, D.C. with the White House Office of Public Liaison and Capitol Hill.



George Dannecker

With 20+ years in O&G, George has expertise in marketing, trading crude oil, refining, and trading products. He excels in identifying and maximizing opportunities across the value chain and managing balanced physical and financial portfolios. His background includes Trading, Supply Chain Management, and a Chemical Engineering degree with extensive field engineering experience.



Kim Post

Kim has over 25 years developing leaders in Fortune 100 companies globally. She specializes in group dynamics, coaching CEOs and C-Suite executives to transform corporate cultures and enhance agility. Kim's expertise includes leadership coaching, strategic focus, and personal effectiveness. She holds a Master's in Consulting Psychology and is certified in HBDI, Myers-Briggs, DiSC, and other assessments.

Our Team



Tim Ziman

Tim has a 30-year career with extensive experience across engineering, maintenance, EHS, procurement, trading, risk management, and more in the Energy, Refining, Petrochemicals, and Specialty Chemicals sectors. He worked in Europe with ICI and Huntsman Corp and in the USA with Huntsman and Ascend Performance Materials. His most recent role was VP of Operations and Strategy for TotalEnergies, overseeing commercial operations, business development, and major capital projects.



Gary Ladnier

Gary has nearly 40 years in refining, chemicals, and upstream operations, mostly with Chevron. He has extensive experience in Project Operations, Operational Readiness, and Turnaround Coordination. Gary worked on major projects in Kazakhstan, Nigeria, and the UK, serving as Lead Operations Rep. and Commissioning Manager. After retiring from Chevron, he joined Bapco Refining as a Training Advisor.

Our Team



Dave Reeves

Dave spent 37 years with Chevron in Research and Development, Safety, Compliance, Shipping, Offshore, and Refining. He pioneered gasket and bolting technology, resolving leaks in various applications and significantly impacting global industries. Dave is on the ASME B16.20 committee, has published technical papers, and teaches sealing and bolting at AFPM conferences. He has extensive experience in training and consulting on bolted connection issues worldwide.



Tony Semenza

Tony served as Chevron's Fire Chief for 22 years in New Jersey and Richmond, CA. After retiring from Chevron in 2000, he became Executive Director of Contra Costa Community Awareness Emergency Response (CAER) and consults globally on fire protection, emergency response, and security. Tony developed Incident Command System training for Chevron, mutual aid programs, and was involved in emergency alert system development in Contra Costa County.



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