Turnaround Management

connected excellence in all we do
Turnaround Delivery Team
Function and Responsibility

Purpose of the function is to facilitate effective turnarounds by maximising work done during turnarounds and interventions to increase the unit integrity.

Own the delivery of all turnarounds and interventions
► Control and Manage the turnaround and intervention scope
► Effectively prepare and organise resources, materials, suppliers and vendors
► Plan the work and integrate with the Operational Plan

Turnaround Phasing

The Amec Foster Wheeler methodology follows the adage that preparation is the key and considers the turnaround in 5 phases. Movement from one phase to the other is achieved by passing through a stringent gate approval process involving peer review and client approval.

Appraise/Scope – Define the business need and Drivers
► Select/Plan – Identify what, who and how the work is to be done
► Define – Develop and Produce the Execution Plan
► Execute – Carry out the Work
► Operate – Review, Learn from the work
► Create the best environment for successful turnarounds and interventions

Turnaround Management

Timescales for Effective Interventions

Interventions in the operation of the units are likely to impact production and always increase the risk of unplanned production loss.

The Amec Foster Wheeler methodology planning and preparation process for any intervention minor or major will be carried out rigorously and challenged to minimise or eliminate the possibility of unplanned downtime affecting production.

<table>
<thead>
<tr>
<th>Shutdown Category</th>
<th>Shutdown Duration (Days)</th>
<th>Shutdown Key Drivers (Scope Limits)</th>
<th>Planning Timeline in Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Overall</td>
<td>Detail</td>
</tr>
<tr>
<td>Major</td>
<td>&gt; 21</td>
<td>&quot;Major CP/Project Major Vessel &amp; Inspection Programme S.D. Critical Integrity Maintenance&quot;</td>
<td>17</td>
</tr>
<tr>
<td>Minor Intervention</td>
<td>&lt; 7</td>
<td>&quot;Small Pit Stop type outages minimal hydrocarbon breaching scopes &amp; S.D. critical integrity maintenance Escalation potential assessed as HIGH; Small Pit Stop type outages minimal hydrocarbon breaching scopes &amp; S.D. critical integrity maintenance Escalation potential assessed as LOW&quot;</td>
<td>4</td>
</tr>
</tbody>
</table>

Right to left thinking
Turnaround Management Process Summary Level

The process of managing the turnaround is illustrated. It identifies at a high level the essential documentation or inputs and outputs necessary to deliver the turnaround efficiently and effectively.

Turnaround Management Process Level 2
**Event Learning**

Planning for turnarounds will begin with an evaluation of previous events, reviewing previous lessons and applying the learning considering people development, making process improvements or even by recommending improved equipment or materials.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Area</th>
<th>Recommendation</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope Identification Workmate Completeness</td>
<td>People</td>
<td>Training and development package to raise the profile of Workmate and Shutdown Processes and their requirements to increase everyone’s understanding of its use and constraints</td>
<td>Shutdown Manager</td>
</tr>
<tr>
<td>Addressing poor Scope quality and Detail</td>
<td>Process</td>
<td>Introduce a procedural “gate” to review content and completeness of potential Work Orders before they are sanctioned</td>
<td>Shutdown Team</td>
</tr>
<tr>
<td>Late establishment of Resource requirements</td>
<td>Process</td>
<td>1 Agree an early timeline with milestones for logistics dates. Recruitment, Material order/delivery dates etc. 2 Incorporate Business Plan milestones into the planning and preps plan to avoid late options disrupting final plans</td>
<td>Planning Manager</td>
</tr>
<tr>
<td>Materials Control on the Platform</td>
<td>Process</td>
<td>Review Materials process from identification through requisition, ordering delivery onshore. Packaging delivery offshore, storage, issuing and finally onshore returns. To consider areas for improvement (Bar code traceability??)</td>
<td>Supply Chain Manager/ Quality Manager</td>
</tr>
<tr>
<td></td>
<td>People</td>
<td>Supplement Platform Materials control with a Controller dedicated to the Shutdown</td>
<td></td>
</tr>
</tbody>
</table>

**Terms of Reference Developed From Business**

The key to successful delivery is to understand the client’s business drivers and ensuring their objectives are clear and the turnaround delivery team, the Operations team, the maintenance team and indeed all of the stakeholders are aligned and geared to achieving those objectives.

**TAR Execution Plan Developed From Business**

Once business drivers are understood and scope and timescales are broadly established Amec Foster Wheeler will consider how best to manage the delivery and the organisation structure of its preparations team. They will consider every aspect of the event and prepare a management plan reflecting the learning, customer drivers and Amec Foster Wheeler best practices for acceptance approval and application throughout the turnaround preparation and implementation.

Will identify:
- Delivery Strategy
- TAR Team Organisation
- Interface management of Stakeholders
- Systems and Tools
- Communications Plan
- Target Duration
- Target Cost

Priorities identified in:
- Asset Plan (5 Year Plan)
- Asset Performance Record
- Planned Maintenance Schedules
- Potential work list
- Market Status
- Will identify
- Initial scope
- Business Drivers
- Likely Duration
- Order of Cost
Work List

Will be developed from
► The Initial Scope and subsequent change requests

Will be developed by
► Screening all potential tasks through the TAR Acceptance Criteria

Will consist of
► Detailed Work list of Tasks
► Accepted Growth

Scope Challenge Process

A key element of learning in managing a turnaround event is the need to control the work list using a disciplined gate process.

The potential list will be subject to the same gated approval process to ensure it meets the accepted criteria and priorities are established for the work schedule to be developed.

Event Schedule developed from the detailed work list

Will be developed by:
► Job stepping to sequence elements of each task
► Quantification of each task Application of norms
► Consideration of complexity factors
► Application of delivery and source logic
Target Performance

Support in achieving the following KPI’s
Key Performance targets will be agreed for:

► Safety
► Quality
► Schedule
► Budget

Other performance targets can be agreed.

Assurance Peer Review

An independent service to support the delivery team by challenging and assessing progress at the beginning to ensure the event is at full readiness before the event.

Terms of Reference Challenge and Risk Workshop.

► Engagement of the Team, Roles and Responsibilities
► Common understanding of T of R
► Shared Knowledge of Drivers and Risks
► Agree and Establish cultural approach and messaging
► Cultural Incentives
► Risk Register
► TAR Execution Plan Challenge Workshop
► Process and Systems Overview
► Review Learning from previous Event
► Identification of system, procedural and delivery “pinch” points
► Common understanding of Execution
► Strategy and Risks
► Identification of Report Content, and Audit/Review/Health Checks
► TAR Cultural Calendar and Communications Plan
► Peer Review Challenges
► Safety, Health and Environment
► Planning and Scheduling
► People and Organisation
► Cost Management
► Contractor Management
► Work Listing
► Engineering
► Material Management
► Communications
Completion Certification

Right to left Thinking.

Considered Work Pack development is the essential building block of the preparations, schedule and procurement processes. It also serves to identify the completions, test and quality certification required to bring the platform back into operation.

Amec Foster Wheeler’s process ties the work pack documentation to the commissioning process and uses dedicated completion managers to deliver effective inspection, punching and defect close out for smooth transition to the commissioning and start up teams.

► Delivering Quality Assurance
► Documentation development and management
► Providing evidence and surety of inspection and testing
► Demonstrating system readiness

Cultural Focus on Event Delivery

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► Review Learning from previous Event
► Identification of system, procedural and delivery “pinch” points
► Common understanding of Execution Strategy and Risks
► Identification of Report Content, and Audit/Review/Health Checks
► TAR Cultural Calendar and Communications Plan

Cultural Calendar & Communications Plan

As well as workshops to promote working together the Amec Foster Wheeler methodology is to develop an open communications structure of Newsletters, forums, lunch and learns, e mail shots to keep stakeholders and interested parties informed as we approach and achieve key project milestones.

Stakeholder Engagement

► On Shore
► Offshore
► Package Contractors and Vendors
► Engineering
► Workforce
► Maintenance
► Concurrent Works
► Business Leadership
► Induction

Written communications
► Event Messaging
Amec Foster Wheeler designs, delivers and maintains strategic and complex assets for its customers across the global energy and related sectors.

With pro forma 2014 scope revenues of £5.5 billion and over 40,000 people in more than 55 countries, the company operates across the whole of the oil and gas industry - from production through to refining, processing and distribution of derivative products - and in the mining, clean energy, power generation, pharmaceutical, environment and infrastructure markets.

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