



NEPIC Best Practice in Projects &
Turnarounds Conference

TA ESSENTIALS

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Middlesbrough

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CASE STUDY: SOME LESSONS LEARNED

Delays on the TA not only result in additional TA costs, the operating margin of the business unit is completely lost.

Plan:

- T/A for a hydro-cracker unit
- Duration: 35 days
- Operating margin loss: €1.0m/day

Actual:

- Duration: 73 Days
- Operating margin loss: €38.0m
- Additional direct TA costs: €7.0m

| Margins (example) | |
|--------------------|----|
| Revenue | 99 |
| Cost of goods sold | 49 |
| Gross margin | 50 |
| Operating expenses | 30 |
| Operating margin | 20 |
| Interest | 3 |
| Taxes | 5 |
| Net margin | 12 |


CASE STUDY: LESSONS LEARNED

- ◆ The **Asset Manager** treated TA preparation and execution as an outsider. There was no active contribution or ownership.
- ◆ The TAR **scope** was never formally agreed between the Asset and TA preparation team
- ◆ There were insufficient **resources** for the TA preparation. Amongst other issues, the detailed planning for some of the activities was not completed **on time** which resulted in delays during TA execution.
- ◆ A large proportion of scope was added after the “freeze” date. This was mainly maintenance work – the shutdown was seen as an **opportunity**.
- ◆ There was an unexpected gas leak during asset shut down. All work stopped for the evacuation. There had been no formal **risk management** process.
- ◆ Contractors were **under-resourced** from day 1.
- ◆ The issue of **work permits** was delayed on a daily basis which had a significant impact on available spanner time every day.
- ◆ The **wrong seals** were used. A week after start up the unit was shut down for another 10 days. QA/QC?



INTRODUCTION

We asked the question... “why?”



- ◆ Poor TA strategy
- ◆ Poor leadership and direction
- ◆ Inadequate preparation
- ◆ Poor execution management
- ◆ Never learning...

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INTRODUCTION

Topics today

- ◆ TA Strategy
- ◆ TA Management Process
- ◆ TA People resource
- ◆ Summary

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VISION AND LEADERSHIP



TA OBJECTIVES DOCUMENT (PER EVENT)

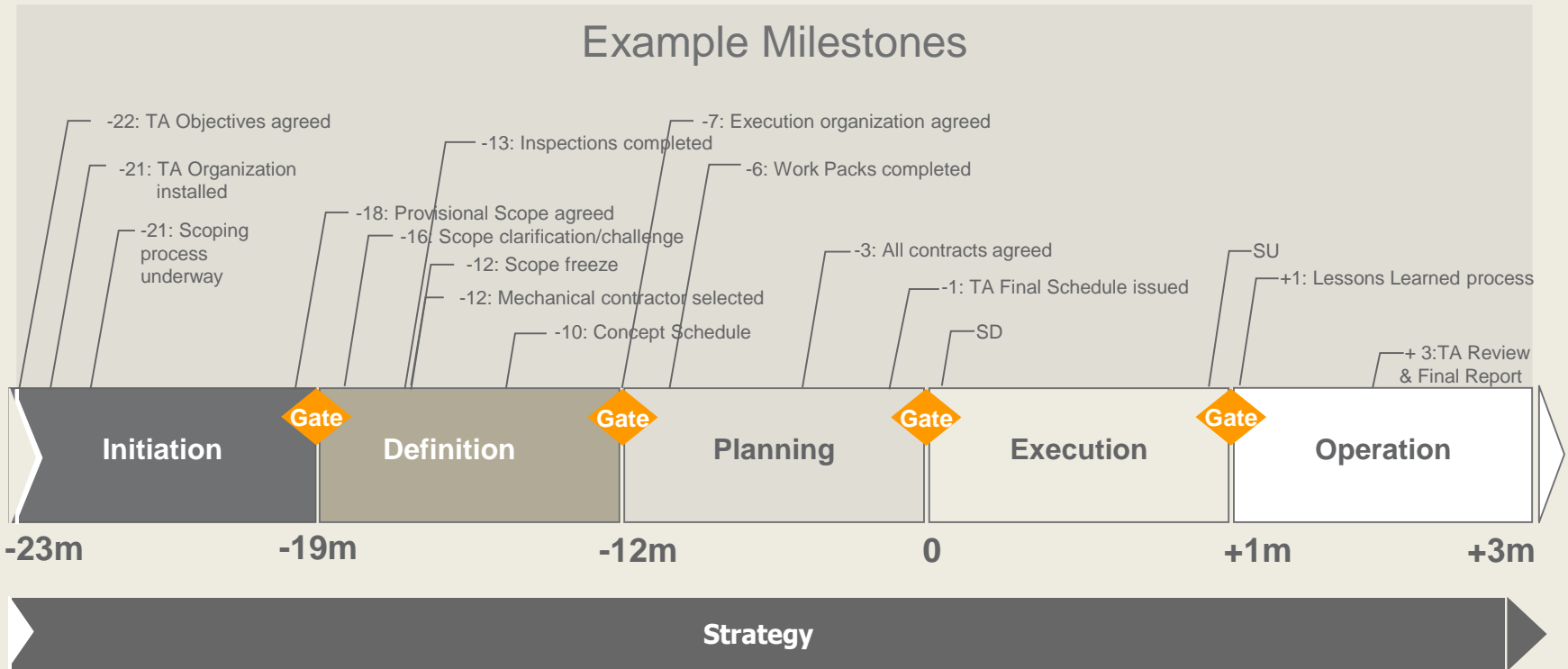
A written definition of the TA objectives (developed prior to the beginning of the Front End Loading process) is critical in setting the direction for the TA and gaining alignment.

- ◆ **Scope boundaries** (rules for what is in and what is out..)
- ◆ **Historical Data**, e.g.
 - Previous TAR performance
 - Seasonality
 - Margin loss
- ◆ **Assumptions** e.g.
 - Plant condition, risks.....
 - Operational assumptions (e.g.. feed quality)
- ◆ **TAR drivers** e.g.
 - License to operate (legislation)
 - Operational performance (Cleaning, equipment renewal...)
- ◆ **TAR Objectives**
 - Operational objectives (e.g. target availability until next TAR)
 - Maintenance scope objectives
 - CAPEX - Scope objectives
 - Performance objectives (duration, cost)
- ◆ **Contractor strategy** (site / event)
- ◆ **Lessons learned from last TAR** (most impactful)
- ◆ **TAR complexity assessment**
- ◆ **Front End Loading milestones**
- ◆ **Key Roles / Responsibilities**
- ◆ **Communication strategy and basic plan**

TA MANAGEMENT

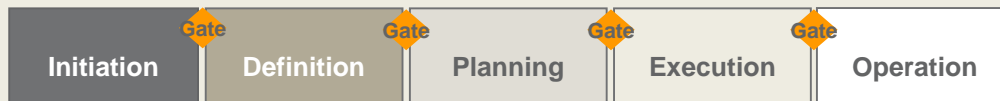


THE 5 PHASES OF A TA (EXAMPLE)



INTERNAL PROCESS GATES

An internal gate process is a formalized quality assurance system. Each gate has **pre-defined** deliverables that are reviewed and signed off by an appointed Gatekeeper.



Internal gate process:

- ◆ Qualitative and quantitative control mechanism
- ◆ Readiness tool for Steering and Core Teams
- ◆ Pre-defined deliverables
- ◆ Formalized sign-off at gates by Gatekeeper

Turnaround Gate Approval Document

Planning Phase

Example TAR Event, March 2015

| Phase | Scope Growth after Phase | \$ Value |
|-------------------------|--------------------------|----------|
| Location, February 2015 | 1% | 10% |
| | | 8,000 |
| | | 80,000 |

Gatekeeper: A. Cook

Date: 25. Mar 15

27. Mar 15

Planning Gate Approval - v 1.0 1


Planning Gate Approval - v 1.0 2

Planning Gate Approval - v 1.0 3

A PROCESS NEEDS PEOPLE



SUMMARY: SUCCESSFUL TA – MANAGE THE ELEMENTS THAT INCREASE THE RISK



Smaller TAs with clear objectives and “rules”

Minimised scope of work (Risk-based assessment of non-compulsory work)

Communication plan through all phases (all stakeholders)

Clearly defined production ownership and contribution

Successful TA elements

Well managed front end loading (volume and quality)

Fully integrated planning and scheduling

Long-term partnerships with competitive edge

Dynamic risk management process

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