

# CEM 515

## PROCESS ANALYSIS & IMPROVEMENT

Presented BY: Omar Abdulrahman Srour

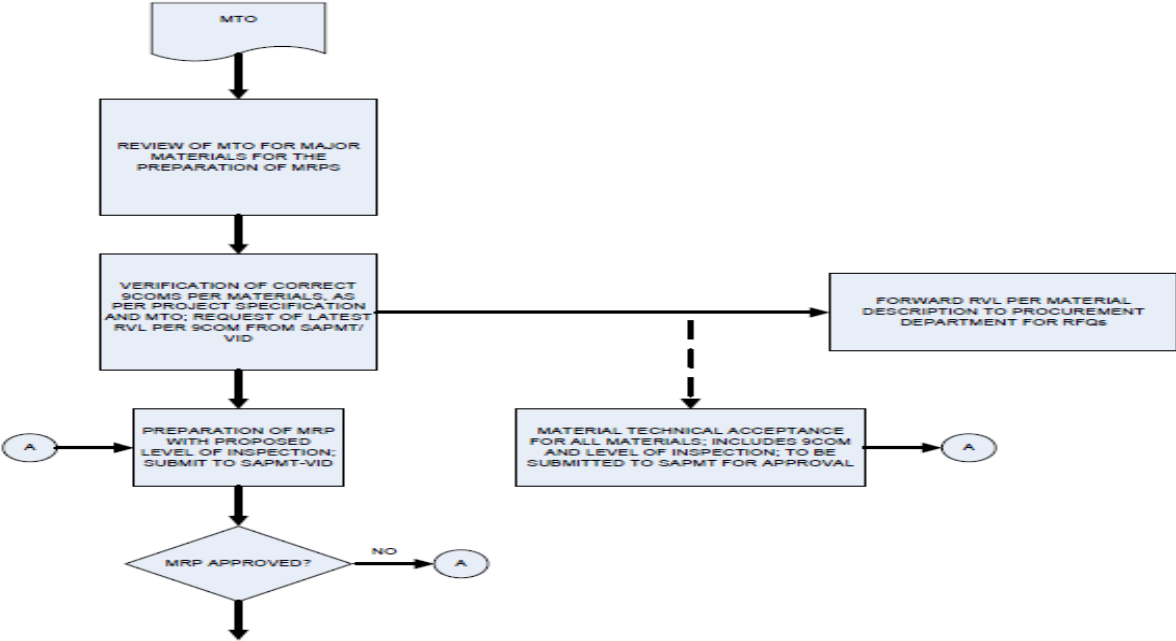
# Process Description

This process is followed by contractors working for Saudi Aramco LSTK & LSBP contracts for the procurement of major materials and equipments . The process starts upon the award of contracts to contractors and should be strictly followed while procuring long lead materials. The main milestones of the process are the following:

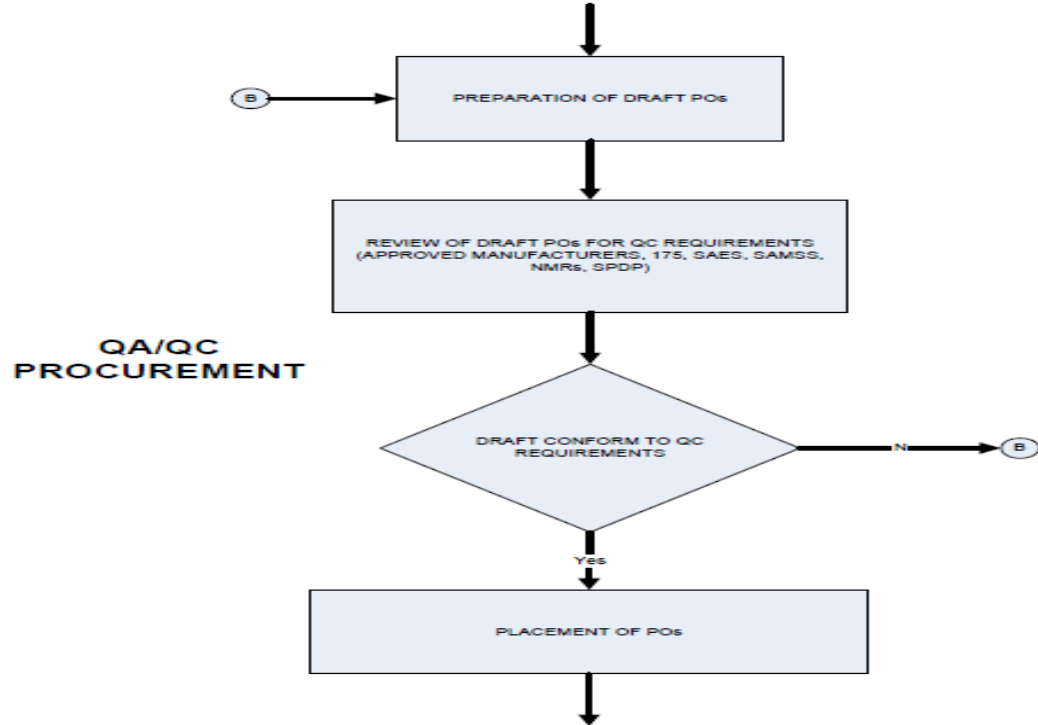
1. **Technical acceptance Package:** this package includes the proper description of the materials, it's proper 9Com number and category and the agreed level of inspection.
2. **Material requisition Package (MR):** This includes the request for quotation package and the content of this package includes the data required by the manufacturers to bid for the supply of the equipments (i.e. material description and qty, specification and related standards, Drawings and datasheets)
3. **Inspection Assignment Package (IAP):** The IAP is prepared for all equipments with level of inspection greater than 0 . This includes at least the MR content in addition to the Purchase Order( PO), Inspection and Test Plan (ITP), Third Party Inspector resume, pre-inspection meeting (PIM) agenda, approved none material requirements (NMR-601)

# Process flow chart

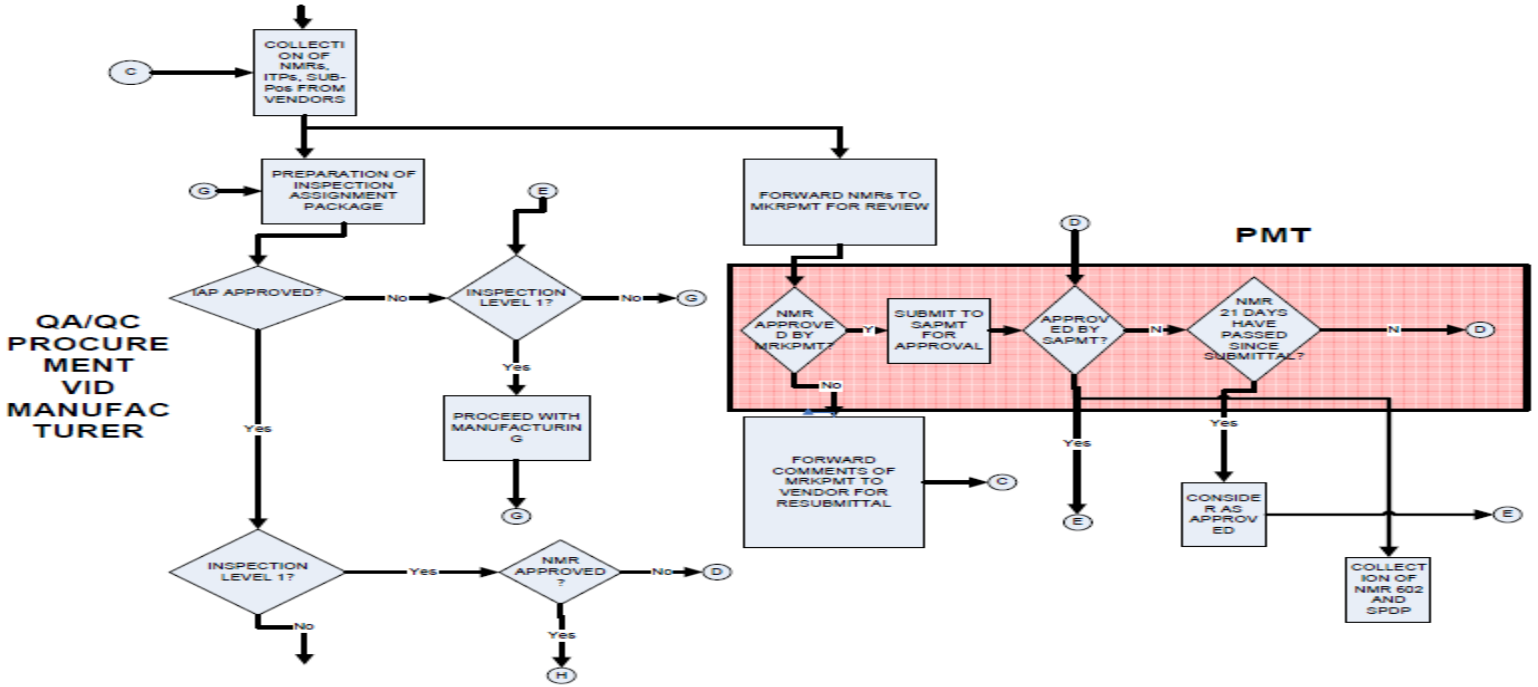
**QA/QC  
PROCUREMENT  
SAPMT/VID**



# Process flow chart

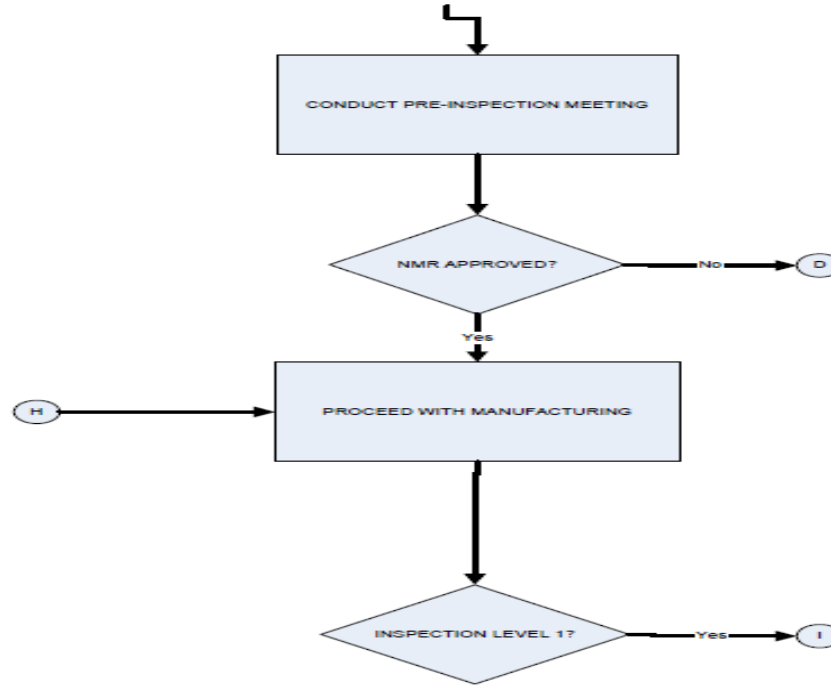


# Process flow chart



# Process flow chart

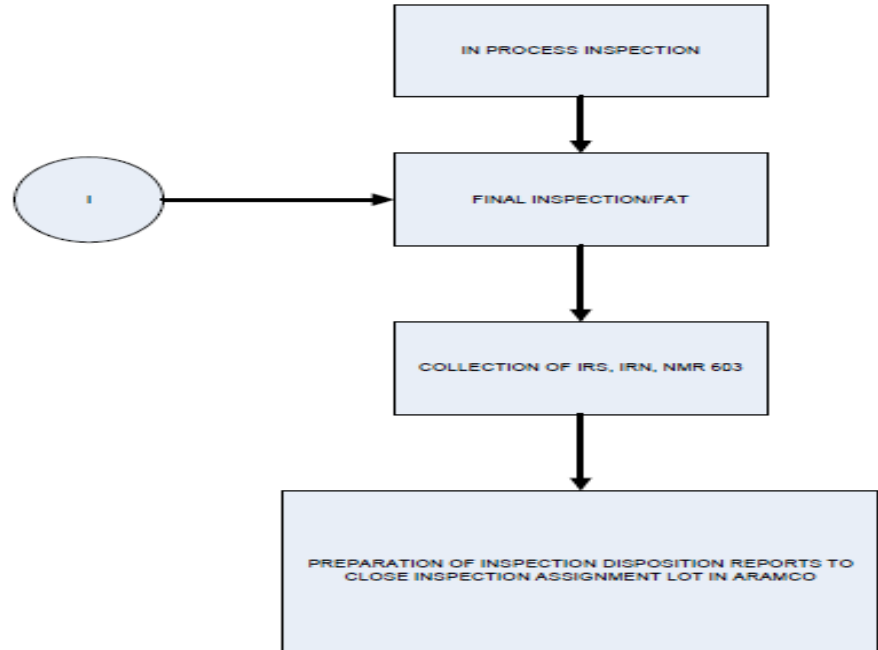
QA/QC PROCUREMENT  
THIRD PARTY INSPECTOR  
ARAMCO INSPECTOR  
MANUFACTURER



# Process flow chart

QA/QC PROCUREMENT  
THIRD PARTY INSPECTOR  
ARAMCO INSPECTOR  
MANUFACTURER

QA/QC PROCUREMENT  
VID



# Process Customers



The Customers of the described Process are:

1. The Project Team
2. The Client ( Saudi Aramco)



# Customers expectations

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The expectations of Process Customers are:

1. Procurement of equipments per the project standards and specifications
2. On time Delivery of the project equipments

# Process Inputs and Interfaces

The inputs of the Process are:

1. The project Material Take Off sheets (MTO)
2. The Project specification and design
3. The client standards

The Process Interfaces are:

1. Contractor Project execution Team
2. Saudi Aramco Project Management team (SAPMT)
3. Vendor Inspection Department (VID), Saudi Aramco
4. Contractor Procurement Department
5. Equipment's manufacturer
6. Third Party Inspection Agency
7. Main contractor store / Project Store

# Process Outputs

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The outputs of the Process are:

1. Procurement of project equipments from regulated vendors incompliance with project design, specification and standards

# Process Problems



It has been noticed during the 15% external quality audit of this process that the procurement department have placed orders to none approved vendors and an NCR have been issued.

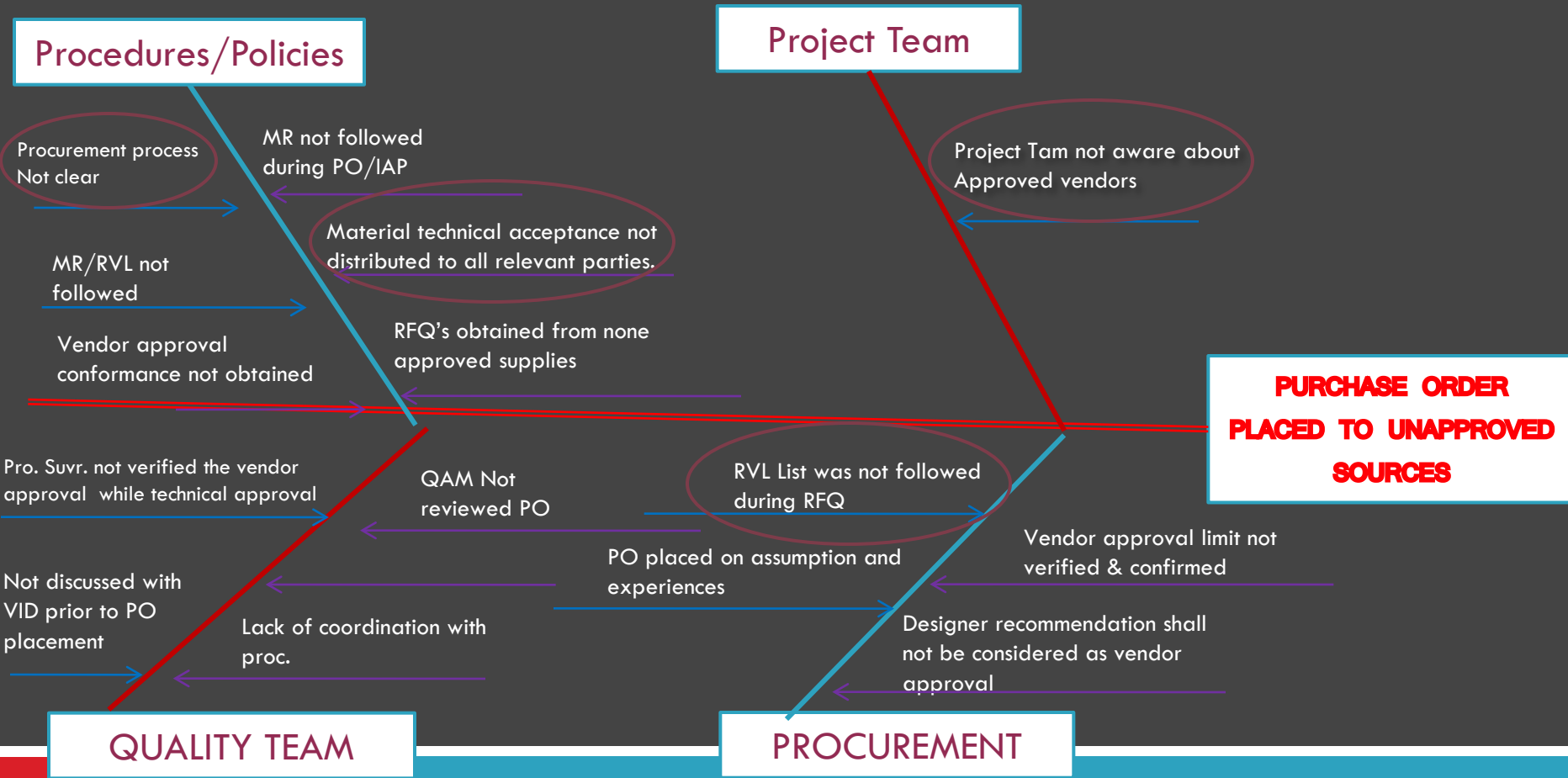
# NCR Copy

| NON-CONFORMANCE REPORT (NCR)   |                  |                          |          |                               |
|--|------------------|--------------------------|----------|-------------------------------|
| Project: BI-3563, UPGRADE WASTEWATER TREATMENT FACILITIES @JR & MARINE AREA  |                  |                          |          |                               |
| CRITICALITY:   | CATEGORY         | 3A<br>1B                 | CATEGORY | 2                             |
| CATEGORY   | 5                | CATEGORY                 |          | 5                             |
| NCR No.:   | URCSWTF-PROC.002 | OBSERVATION DATE & TIME: |          | MAR 16' 2009                  |
| <b>NON-CONFORMANCE IDENTIFIED:</b>   |                  |                          |          |                               |
| Procurement Department placed order for the supply of Plug Valves from an unapproved Saudi Aramco source (Dezurick). It is a violation against the Saudi Aramco Procedures and Procurement Quality Plan. |                  |                          |          |                               |
| <b>INITIATED BY :</b>  |                  | <b>REVIEWED BY:</b>      |          | <b>DATE</b>                   |
| QC Personnel (Name & Sign.)  |                  | QA Manager               |          | Procurement Manger.           |
| ANIL KUMAR   |                  | Anil Kumar               |          | O.K MAMMOOTTY                 |
| DATE:  |                  | DATE                     |          | DATE                          |
| Mar 16 '09   |                  | Mar 16 '09               |          | 3/17/09                       |
| <b>CORRECTIVE ACTION RECOMMENDED:</b>  |                  |                          |          |                               |
| To hold the order and discuss with SAPMT/CSD/VID, the proposed supplier is recommended by the designer as per the project specification and the approved suppliers did not quote for this job.           |                  |                          |          |                               |
| <b>RECOMMENDED BY</b>  |                  | <b>TARGET DATE</b>       |          | <b>ACTUAL COMPLETION DATE</b> |
| Name & Sign.   |                  | DATE                     |          |                               |
| ANIL KUMAR   |                  |                          |          |                               |
| <b>CORRECTIVE ACTION (ACTUAL):</b>   |                  |                          |          |                               |
|  |                  |                          |          |                               |
| <b>CHECKED BY :</b>  |                  | <b>VERIFIED BY :</b>     |          | <b>DATE:</b>                  |
| QC Personnel (Name, Title & Signature)   |                  | DATE                     |          |                               |
|  |                  |                          |          |                               |
| <b>SAPMT NAME, SIGN., OBSERVATION AND COMMENTS IF ANY :</b>  |                  |                          |          |                               |
|  |                  |                          |          |                               |
| <b>FID/VID: NAME, SIGN., OBSERVATION AND COMMENTS IF ANY :</b>   |                  |                          |          |                               |
|  |                  |                          |          |                               |
| <b>NON CONFORMANCE CRITICALITY RATES:</b>  |                  |                          |          |                               |
| Category 1: A) No system in place for a key quality activity or process<br>B) A serious deficiency which potentially results insignificant rework or a potential hazard                                  |                  |                          |          |                               |
| Category 2: A significant number of deficiency against a defined system of control / procedure   |                  |                          |          |                               |
| Category 3: Isolated deficiencies against a defined system of control / procedure  |                  |                          |          |                               |

# Problem Root Cause

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Ishikawa fishbone diagram tool have been utilized to illustrate the possible causes of the problem



# Recommendations



1. Revise the Process layout for more clarity
2. Insure the compliance with TA by all parties via proper distribution of the document
3. Procurement Dept should refrain from sending RFQ's to none approved vendors

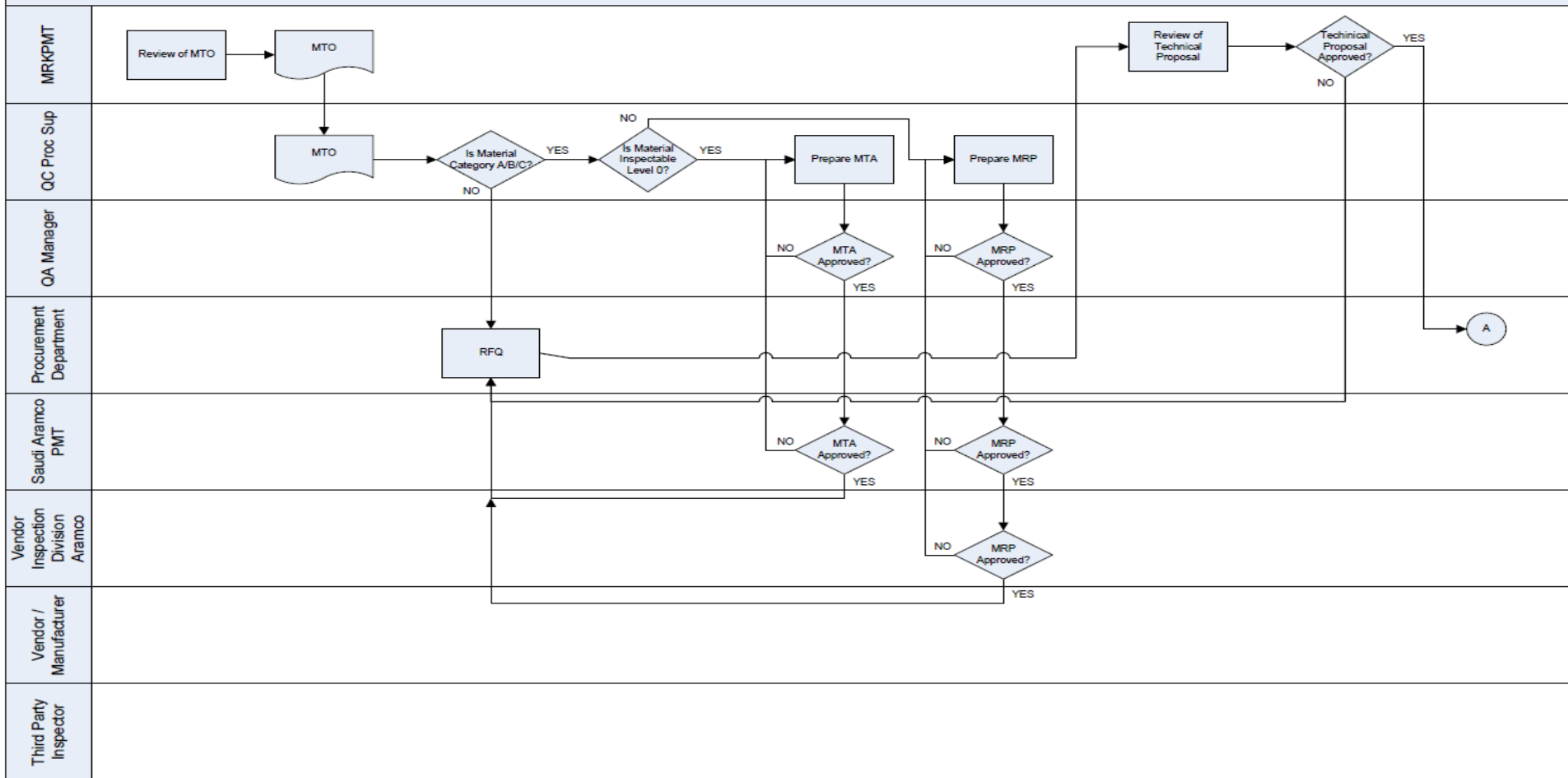


# Revised Process flow chart

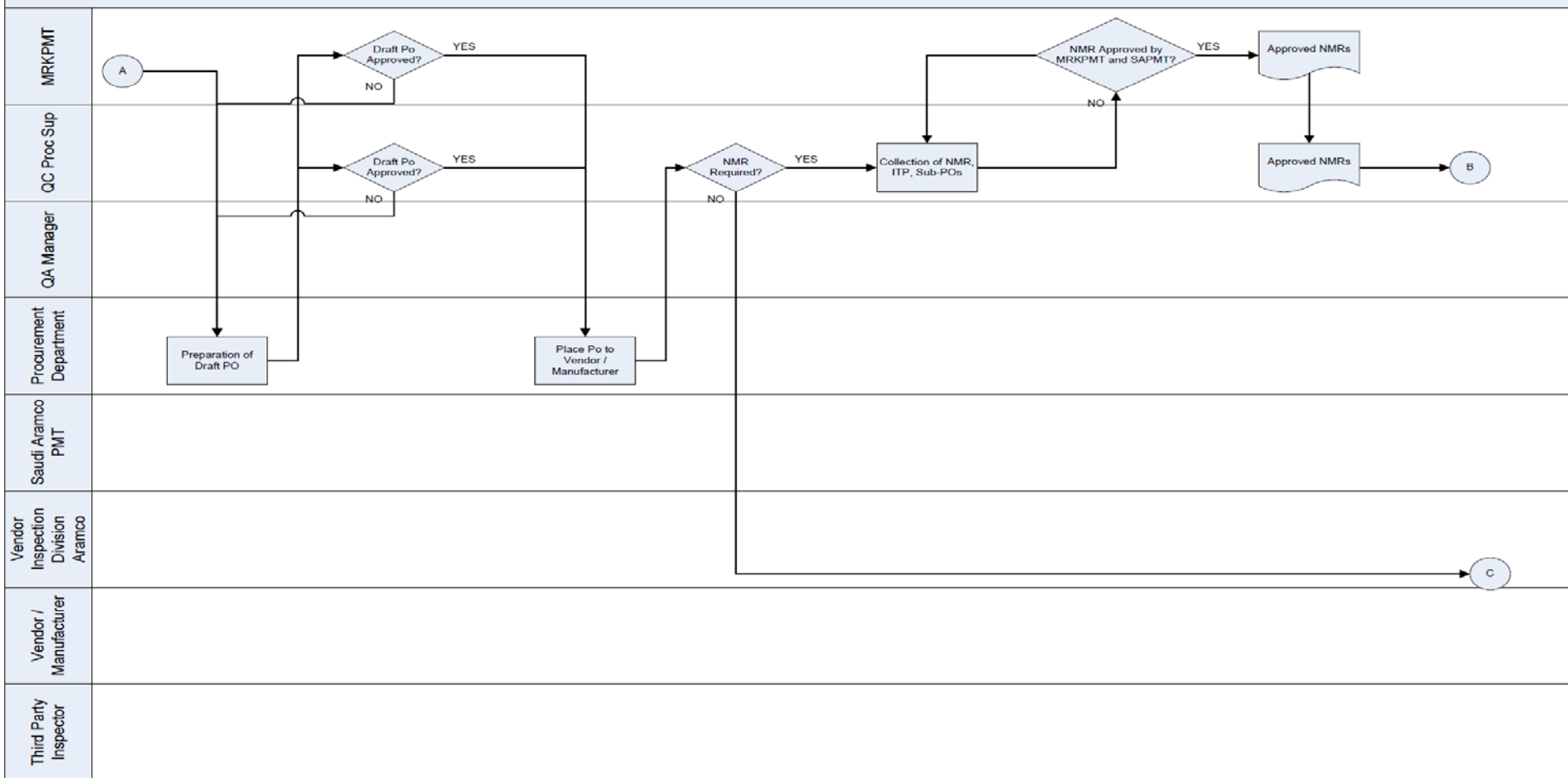


The Following slides shows the revised Process diagram and will be implemented on a pilot project prior to final implementation

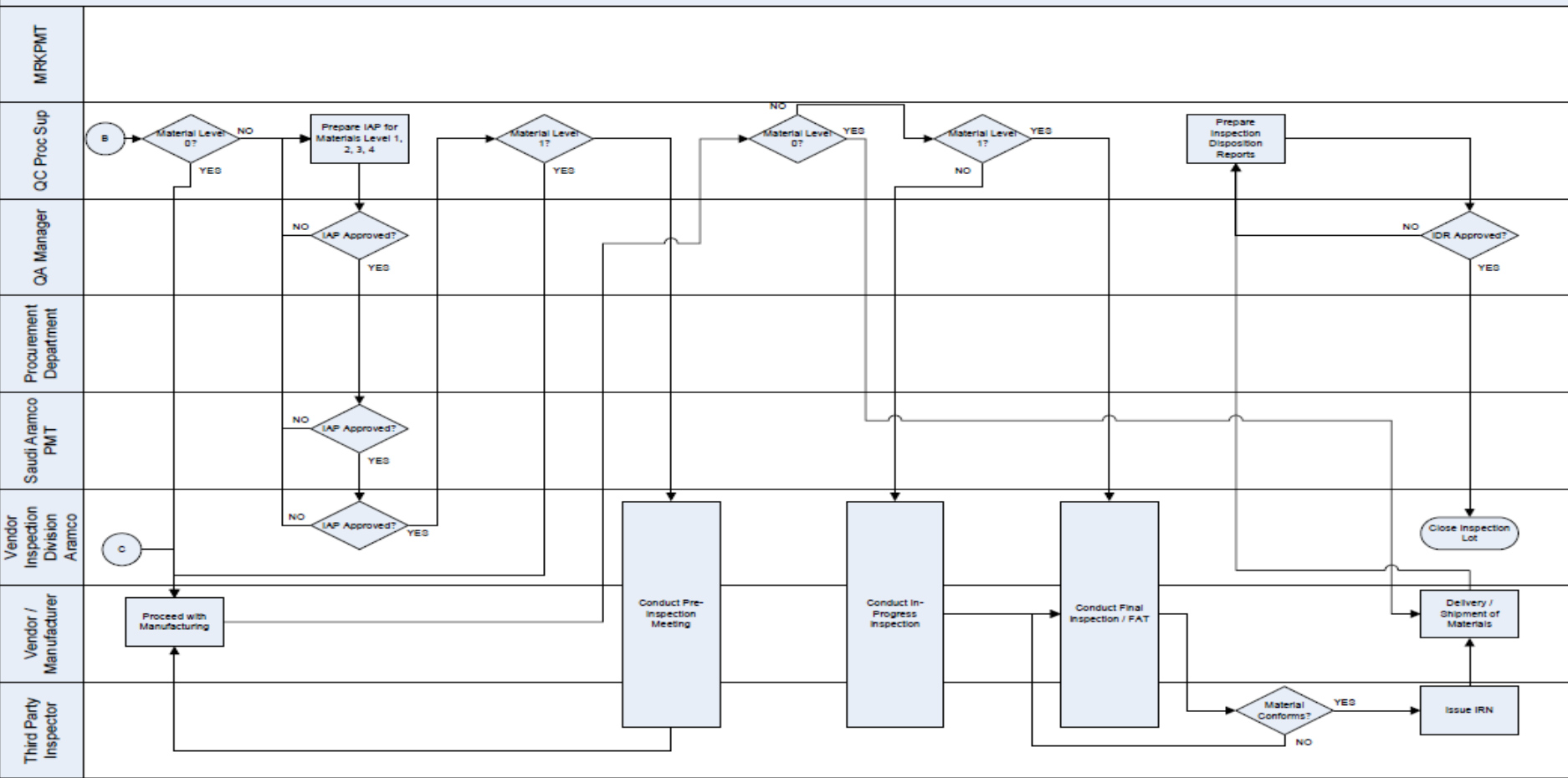
# MRK Procured Materials for Aramco Projects Processes Flow Chart



# MRK Procured Materials for Aramco Projects Processes Flow Chart



MRK Procured Materials for Aramco Projects Processes Flow Chart





Thank You