

PETRONAS TECHNICAL STANDARDS

DESIGN AND ENGINEERING PRACTICE

MANUALS

ACTUATED VALVE MANAGEMENT STRATEGY

PTS 32.36.01.19

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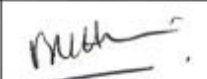
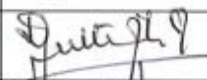
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This new PTS **32.36.01.19 – Actuated Valve Management Strategy (February 2010, Revision 0)** has been developed to provide guide in actuated valve management.

This PTS also includes PETRONAS Lessons Learnt and PETRONAS Best Practice for the subject matter **Actuated Valve Management Strategy**.

Document Approval

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PREFACE

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TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1	OBJECTIVE	1
1.2	SCOPE OF COVERAGE	1
1.3	DEFINITIONS.....	1
1.4	CROSS-REFERENCES.....	2
2.	STRATEGY FRAMEWORK.....	3
3.	SCOPE OF RESPONSIBILITY	4
4.	ENGINEERING DESIGN	6
4.1	SELF ACTING REGULATING VALVES	6
4.2	ESD VALVES.....	6
4.3	PARTIAL STROKE TEST (PST).....	6
4.4	HANDWHEELS.....	7
4.5	POSITIONER	7
4.6	ACCESSING MOUNTING INSTALLATION.....	7
4.7	CONTROL VALVE SPARES	7
4.8	TECHNICAL REQUISITION DOCUMENT	8
5.	PROCUREMENT	9
5.1	MANUFACTURER SELECTION.....	9
5.2	REQUEST FOR QUOTATION (RFQ) OR INVITATION TO BID (ITB).....	9
5.3	SPARES PROCUREMENT	9
5.4	PRESERVATION	9
6.	INSTALLATION	10
7.	COMMISSIONING	11
7.1	PRE-COMMISSIONING.....	11
7.2	COMMISSIONING	11
8.	MAINTENANCE.....	12
8.1	PHASE 1 – EQUIPMENT MASTER LIST (CONTROL VALVE DATABASE).....	12
8.2	PHASE 2 - EQUIPMENT CRITICALITY ASSESSMENT (ECA).....	12
8.3	PHASE 3 - MAINTENANCE PLANNING AND EXECUTION	13
8.4	PHASE 4 – SHUTDOWN / TURN-AROUND (TA) PLANNING AND EXECUTION ..	14
8.5	PHASE 5 - BAD ACTOR MANAGEMENT	17
8.6	PHASE 6 – OBSOLESCENCE MANAGEMENT	17
8.7	PHASE 7 – PERFORMANCE METRICS AND REPORTING	17
9.	DE-COMMISSIONING	18
10.	REFERENCES	19

1. INTRODUCTION

1.1 OBJECTIVE

This Strategy document, developed and approved by the SKG 14 (Instrumentation and Control) Technical Professionals and Technical Managers, provides the Best Practice framework for the execution of a Total Control Valve Management Strategy in PETRONAS. Control valves are the final element in an instrument loop and are a critical component in ensuring safe and reliable operation of the process. The intent of this strategy is to ensure that control valves in PETRONAS are designed, maintained and managed in the on-shore and off-shore process facilities in a fit-for-purpose manner, to safely deliver its best returns on investment to PETRONAS at optimum cost.

1.2 SCOPE OF COVERAGE

The scope of coverage for this strategy are as follows:

1. Engineering Design
2. Procurement
3. Installation
4. Commissioning
5. Maintenance
6. De-commissioning

For the context of this document, “actuated valves” are defined as all pneumatic (air and gas) and hydraulic actuated valves used in Emergency Shutdown (ESD), depressurizing valves, deluge valves, throttling control and on-off/sequence control.

The Instrument Engineer's scope of responsibility for the control valves covers all the process units, package units and rotating equipment packages. Hence, control valves, such as, anti-surge valves, tuning of control valves, where applicable, falls under the responsibility of the Instrument Engineer and not under any other discipline engineers' responsibility.

Specifically excluded from the coverage of this document are:-

1. Manual, hand-operated valves
2. Relief valves
3. Breather valves or vacuum Breakers
4. Motorized valves, except where 4-20 mA signals or Fieldbus signals are used. In such cases, the Instrument Engineers shall assist the Electrical and Mechanical Engineers.

1.3 DEFINITIONS

1.3.1 General Definitions

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

1.3.2 Specific Definitions

ANSI	American National Standards Institute
API	American Petroleum Institute
BEC	Basic Equipment Care
BOM	Bill of Material
CBM	Condition Based Monitoring
CM	Corrective Maintenance
DCS	Distributed Control System
DEMM	Design Engineering Management Manual
ECA	Equipment Criticality Assessment
EPC / EPCC	Engineering Procurement Construction / Engineering Procurement Construction and Commissioning
ESD	Emergency Shutdown
GSCMD	Group Supply Chain Division
GTS	Group Technology Solution
H₂S	Hydrogen Sulfide
HIPPS	High Integrity Pressure Protection System
iAMS	Instrument Asset Management System
IPF	Instrument Protective Function
iPOCS	PETRONAS Plant Operating System
ITB	Invitation To Bid
MOC	Management of Change
MTBF	Mean Time Between Failure
NSR	Non-Standard Repair
OEM	Original Equipment Manufacturer
P&ID	Piping and Instrumentation Diagram
PEFS	Process Engineering Flow Scheme
PLC	Programmable Logic Controller
PMMS	PETRONAS Maintenance Management System
PPM	Planned Preventive Maintenance
PRM	Proactive Maintenance
PST	Partial Stroke Test
PTFE	Polytetrafluoroethylene
PTS	PETRONAS Technical Standard
QA/QC	Quality Assurance / Quality Control
RFQ	Request For Quotation
RFSU	Ready For Start-Up
PMMS	Computerized Maintenance Management System
SIL	Safety Integrity Level
SkG	Skill Group
SME	Subject Matter Experts
SPIR	Spares Parts Interchangeability Records
TA	Turn-Around
TP	Technical Professional
TSO	Tight Shut-off

1.4 CROSS-REFERENCES

Where cross-references to other parts of this PTS are made, the referenced section number is shown in brackets. Other documents referenced in this PTS are listed in [\(10\)](#).

2. STRATEGY FRAMEWORK

This overall control valve management strategy provides greater emphasis on accountability and responsibility of the control valve performance on the Instrument TP. The strategy requires the proactive “hands-on” execution by the Instrument TP. The strategy covers the entire scope of the control valve management, from design up to decommissioning. This strategy shall apply to both Upstream and Downstream process facilities.

This strategy encompasses the existing PTS and GTS guidelines already in place. This strategy intends to specify the exact requirements to be in place in all stages of the control valve management. Failure at one stage of the management will result in failures at the subsequent stages. Hence, the responsible Instrument TPs shall institute all the requirements specified in this document at the earliest opportunity.

This strategy constitutes a joint effort by the Group Instrument TPs and shall be subjected to updates from time to time.