

Engineering Procedure

SAEP-121

31 August, 2002

Operating Instructions for New Facilities

Document Responsibility: Project Support and Controls Dept.

Saudi Aramco DeskTop Standards

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1 Scope

This Saudi Aramco Engineering Procedure (SAEP) describes the format and content for initial or revised operating procedures for all new Saudi Aramco facilities that have mechanical equipment which involve regulation or control. This SAEP also assigns responsibility for the preparation and revision of the operating procedures.

2 Applicable Documents

Saudi Aramco Engineering Procedures

SAEP-020

Equipment Inspection Schedule

[SAEP-122](#)

Project Records

Saudi Aramco Engineering Standard

[SAES-A-005](#)

Safety Instruction Sheet

3 Instructions

Operating Instructions shall be separate book(s) and distributed by the Project Manager in accordance with [SAEP-122](#).

The content of Operating Instructions depends on the nature of the facility; format shall follow the general arrangement indicated in Attachment I, unless the project involves modifications/additions to an existing facility where the Operating Department requires the Project Manager to duplicate the format of existing manuals.

4 Responsibilities

4.1 New Issues

The Engineering Contractor is responsible for the preparation of a complete, comprehensive and clear Operating Instructions for new facilities. Such Operating Instructions shall contain all procedures required to safely start, operate and shut-down the new facilities, including component equipment. Lay-up measures for short T&I durations will also have to be addressed by these procedures.

Where detailed instructions and trouble-shooting procedures are contained in vendor manuals, the Operating Instructions shall refer to the applicable documents. The project Management team and the Operating Department shall ensure the above requirements are met.

4.2 Revisions

The Operating Department in consultation with Operations Engineering shall be responsible for modifying the new instructions as required to suit actual operating conditions when facilities are expanded or replaced by the Operation Department. When new installed facilities interface with existing equipment, the Engineering contractor is responsible for updating the existing operating instructions to reflect the new changes interfaces. The Process & Control Systems Department and Consulting Services Department shall be consulted as appropriate.

The Operating Department shall be responsible for providing Project Management with all portions of the Operating Instructions which relate to the existing facilities included in the project scope and identify any specific requirements for operating instruction to be included in the contract package.

4.3 Approval

The Operating Department Manager is the final approval authority for Operating Instructions for new facilities and for subsequent revisions.

5 Notes

None.

Revision Summary

31 August, 2002	Revised the "Next Planned Update". Reaffirmed the contents of the document, and reissued with minor changes.
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Attachment 1 – Operating Instructions

- I Index of Operating Instructions
- II Outline for Plant as a whole
 - A. Introduction
 - 1. Purpose of Plant
 - B. General Description
 - 1. Process Description
 - 2. Description of Unit Flow
 - a) Include Plot Plan, Process Flow Diagrams, and Piping and Instrument Diagrams
 - b) Line Designation Tables (If required by Operations)
 - 3. Description of Utilities
 - a) Flow descriptions and diagrams of auxiliary systems: air, steam, water, power, fuel, etc.
 - b) Utility Material Balances
 - 4. Control Systems
 - a) Distributed Control Systems (DCS)
 - 1. Control Narratives
 - 2. Logic Narratives
 - b) Emergency Shutdown (ESD)
 - 1. Control Narratives
 - 2. Logic Narratives
 - c) Management Information Systems (MIS)
 - 1. Control Narratives
 - 2. Logic Narratives

5. Overview Drawings

- a) Electrical One Line Diagram
- b) Area Classification Diagram
- c) Material Selection Diagram
- d) Valve Operating Diagram
- e) Hazardous Area Diagram
- f) Plant LAN or other Control Network Diagram

6. General Safety Instructions

C. Operating Instructions

- 1. Preparation of detailed instructions for initial start-up
- 2. Detailed start-up procedure
- 3. Operating procedure logic diagrams
- 4. Troubleshooting logic diagrams/procedures
- 5. Detailed procedure for normal shut-down with checklist or logic diagrams
- 6. Detailed emergency shut-down and re-start procedures with checklist or logic diagrams
 - a) Equipment Failures
 - b) Utility Failures
- 7. Cause and Effect Diagrams
- 8. Plant hazards requiring special precautions

D. General Equipment Information, List of all Equipment Giving

- 1. Individual Name
- 2. Individual Number

E. Standby Equipment

Identify all standby equipment and instructions for switchover as well as frequency of switchover defined.

III Outline for Individual Equipment

A. Brief description of Major Equipment

1. Purpose of Equipment

B. Operating Instructions

1. Preparation for initial start-up with checklist or logic diagrams

2. Start-up procedure with checklist or logic diagrams

3. Normal operation, including operating variables with checklist or logic diagram

4. Shut-down procedure with checklist or logic diagram

5. List of Consumables required for startup including dosing rates, etc.

C. Operating Limitations

1. Include Safety Instructions Sheets

2. Performance Criteria, allowable variances, and a list of setpoints for safety operations in accordance with specified operating parameters.

D. Safety Items and Operational Hazards

E. Recommendations for Maintenance and Repairs by Operating Personnel

IV Support Systems

A. Corrosion Protection Systems

B. Communications Systems

C. Safety Systems