

NORSOK STANDARD

SYSTEM REQUIREMENTS
CRUDE HANDLING
SYSTEM NO. 21 & 30

P-SR-003
Rev. 1, December 1994

CONTENTS

1. FOREWORD	2
2. SCOPE	2
3. NORMATIVE REFERENCES	2
4. DEFINITIONS AND ABBREVIATIONS	2
4.1 Definitions	2
4.2 Abbreviations	2
5. FUNCTIONAL REQUIREMENTS	2
5.1 General	2
5.2 Products/Services	2
5.3 Equipment/Schematic	3
5.4 Performance	3
5.5 Regularity	3
5.6 Process/Ambient Conditions	3
5.7 Operational Requirements	4
5.8 Maintenance Requirements	4
5.9 Isolation and Sectioning	5
5.10 Layout Requirements	5
5.11 Interface Requirements	5
5.12 Commissioning Requirements	5

1. FOREWORD

This standard has been developed by the NORSOK Standardisation Work Group.

2. SCOPE

3. NORMATIVE REFERENCES

NORSOK Standard

P-CR-001

Process Design

4. DEFINITIONS AND ABBREVIATIONS

4.1 Definitions

4.2 Abbreviations

5. FUNCTIONAL REQUIREMENTS

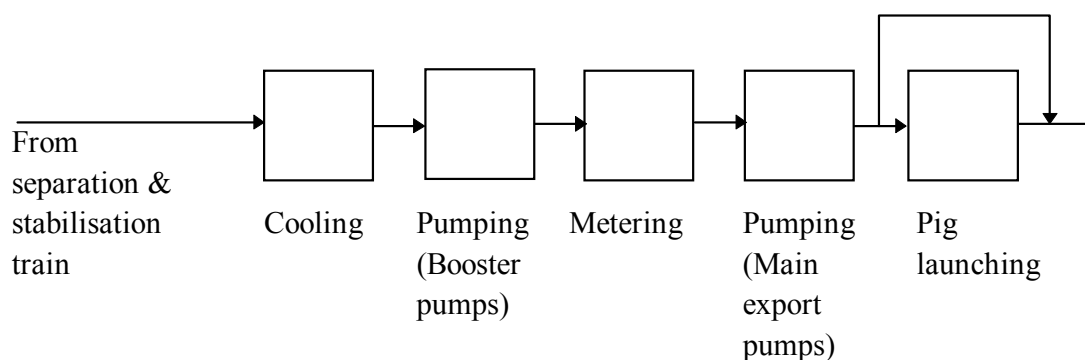
5.1 General

Crude cooling, pumping, metering and export (incl. pigging).

5.2 Products/Services

Crude oil to export specification.

5.3 Equipment/Schematic



5.4 Performance

System Capacity (Sm^3/h)
Export pressure (bara)
Export temperature ($^{\circ}\text{C}$)

5.5 Regularity

5.5.1 Regularity

99%.

5.5.2 Sparing

- | | |
|------------------------|--|
| • Cooling(if required) | No sparing required (min. 2 coolers) |
| • Pumping | 33-100% spare capacity. (min. 2 pumps) |
| • Pig launcher | No spare |

5.6 Process/Ambient Conditions

Inlet pressure
Inlet temperature

5.7 Operational Requirements

5.7.1 Control and monitoring

System operation and performance monitoring shall be fully available in CCR. The following functions shall be provided:

OS/VDU Functions	P	T	L	F	A	Other
Coolers		C			X	$\Delta P(M)$
Pumps	M		C ¹⁾		X	
Pig Launcher	M				X ²⁾	

P = Pressure/Discharge Pressure, T = Temperature, L = Level, F = Flow, A = Alarm, M = Monitoring, C = Control, X=Alarm available as required

Notes:

- 1) Separator level controlled by:
Hydraulic coupling or frequency controlled el.motor or downstream level control valve with discharge recirculation.
- 2) Pig detector shall be of surface mounted/clamp on - type.

5.7.2 Drain/vents

Coolers (hydrocarbon side), pumps and pig traps should be connected to flare system and drain with hard piping.

5.7.3 Coolers

Parallel flow plate heatexchanger - type (to avoid waxing).

5.7.4 Pig Launcher

Flexible hose for purging with inert gas shall be available for connection when launcher is in use.

5.7.5 Pigs

Pig trolley and lifting arrangement only required for pigs weighing more than 80 kg.

5.8 Maintenance Requirements

Plate heat exchanger will normally be repaired/overhauled onshore. Installation shall facilitate access and transportation.

5.9 Isolation and Sectioning

Double block & bleed shall be installed on pig launcher outlet and inlet.

5.10 Layout Requirements

- Space for transportation and handling of pigs to/from piglaunchers shall be provided.
- Export pumps should be located at low elevation to minimize cavitation risk.

5.11 Interface Requirements

5.11.1 Cooling

Cooling medium or seawater.

5.11.2 Inert gas

Nitrogen.

5.11.3 Chemicals

- | | |
|--|---|
| • If waxing is likely | Injection of wax inhibitor. |
| • If pipeline export | Injection of corrosion inhibitor (Material dependant) |
| • If pipeline exportcapacity limitations | Injection of flow-improver/drag reducer |

5.12 Commissioning Requirements

When commissioning of system 20 and 21 is planned to take place prior to available well fluids (e.g. onshore), a tie-in tee should be installed downstream the pumps, for connection of temporary recirculation lines through the systems.