

NORSOK STANDARD

SYSTEM REQUIREMENTS
COOLING MEDIUM
SYSTEM NO. 40

P-SR-006
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	4
5.6 Process/Ambient Conditions	4
5.7 Operational Requirements	4
5.8 Maintenance Requirements	5
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

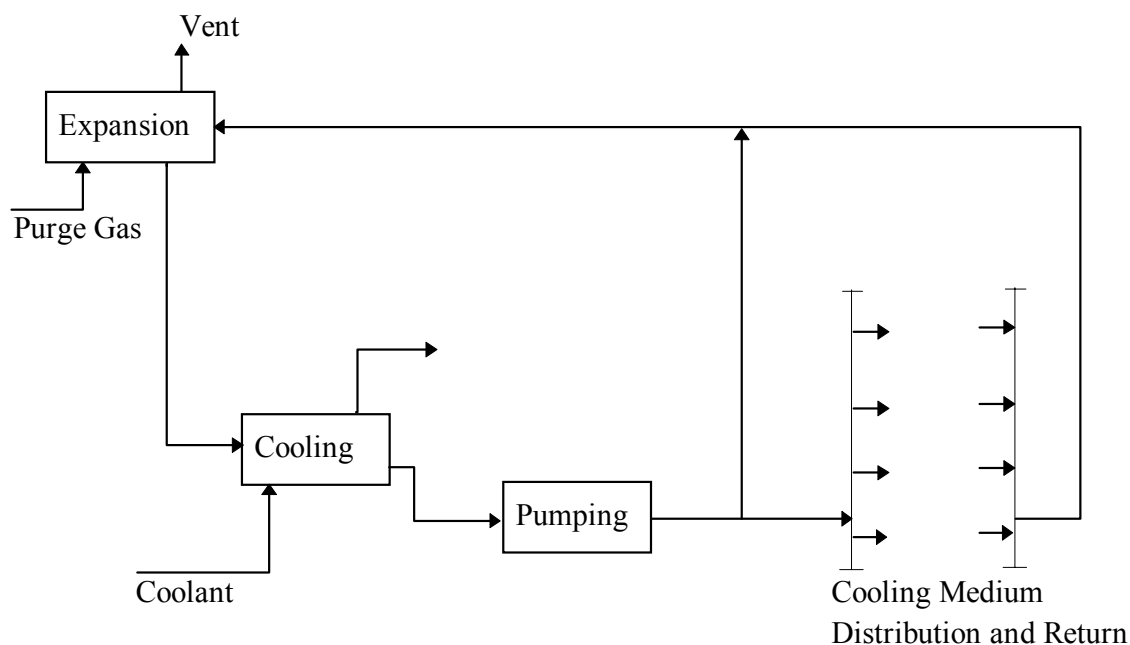
5.1 General

A closed loop cooling medium used for removal of heat in process and utility systems where direct seawater cooling is not applicable.

5.2 Products/Services

- Water/ glycol mixture 35 % TEG (by weight)
- Product Quality

5.3 Equipment/Schematic



5.4 Performance

5.4.1 System Capacity

- Sum of all normal continuous operating loads.
- Intermittent loads handled by spare pump.

5.4.2 Operating Life

Project specific.

5.4.3 Temperature cooling

Varies with load, with seawater temperature constant.

5.4.4 Temperature seawater

Seawater temperature used in the design shall cover only 95 % of the operating time.

5.4.5 Expansion tank

Capacity to control volume expansion from temperature variation with hydrocarbon monitoring installed enabling detection of leakage with option to purge to flare.

5.5 Regularity**5.5.1 Regularity**

99 %

5.5.2 Training/sparing

Normal continuous load shall be handled with one pump. A second pump shall be available for period with high loads.

5.6 Process/Ambient Conditions

System can be located in the open air.

5.7 Operational Requirements**5.7.1 Control and Monitoring**

System shall be controlled and monitored from local control panel. Selected information shall be available in CCR as detailed below:

OS/VDU Functions	P	T	L	F	A	Other
Pump discharge pressure	M				X	
Pump discharge temperature		M			X	
Expansion tank level			M		X	
Hydrocarbon detector					X	

P = Pressure, T = Temperature, L = Level, F = Flow, A = Alarm,
M = Monitoring, X = Alarm available as required.

5.7.2 *Fill-up/ drainage*

Fill-up line shall be permanently installed. System shall be gravity drained to tank or boat.

5.7.3 *Mode of operation*

Either pump may serve as standby pump.

5.8 Maintenance Requirements

Coolers should be designed for maintenance to be done offshore. If onshore maintenance strategy is selected, then lifting devices shall be installed for dismantling and transportation.

5.9 Isolation and Sectioning

Block valves and spool pieces as necessary shall be installed around pumps, coolers and cooler users for individual isolation to allow removal of units for maintenance. Drainage of isolated volumes shall be installed to open drain system.

5.10 Layout Requirements

- Cooling medium coolers shall be located low.
- Expansion tank shall be located at the highest point in the circulation loop.

5.11 Interface Requirements

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|------------------|--|
| • Nitrogen | Expansion tank shall be continuously purged. |
| • Chemicals | Injection of corrosion inhibitor upstream of pumps shall be provided. |
| • Power | Critical power shall be available for one pump. Pump selection shall be done manually. |
| • Seawater | As required for energy balance. |
| • Instrument Air | As required. |
| • Vent header | If hydrocarbons are detected. |

5.12 Commissioning Requirements

High point vents shall be installed.