NORSOK STANDARD

COMMON REQUIREMENTS MECHANICAL COMPLETION AND COMMISSIONING

Z-CR-007 Rev. 1, May 1996

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1 **FOREWORD**

NORSOK (The competitive standing of the Norwegian offshore sector) is the industry initiative to add value, reduce cost and lead time and remove unnecessary activities in offshore field developments and operations.

The NORSOK standards are developed by the Norwegian petroleum industry as a part of the NORSOK initiative and are jointly issued by OLF (The Norwegian Oil Industry Association) and TBL (The Federation of Norwegian Engineering Industries). NORSOK standards are administered by NTS (Norwegian Technology Standards Institution).

The purpose of this industry standard is to replace the individual oil company specifications for use in existing and future petroleum industry developments, subject to the individual company's review and application.

The NORSOK standards make extensive references to international standards. Where relevant, the contents of this standard will be used to provide input to the international standardisation process. Subject to implementation into international standards, this NORSOK standard will be withdrawn.

2 **SCOPE**

This standard defines the principles and structure of Mechanical completion and commissioning.

3 NORMATIVE REFERENCES

ISO 9000 series standards

4 DEFINITIONS AND ABBREVIATIONS

4.1 **Definitions**

Normative references Shall mean normative in the application of NORSOK standards. Shall mean informative in the application of NORSOK standards. Informative references Shall Shall is an absolute requirement which shall be followed strictly in

order to conform with the standard.

Should Should is a recommendation. Alternative solutions having the same

functionality and quality are acceptable.

May May indicates a course of action that is permissible within the limits

of the standard (a permission).

Requirements are conditional and indicates a possibility open to the Can

user of the standard.

Project Completion System Is a computerised system for electronic documentation of

(PCS)

Mechanical completion, commissioning and preservation by system,

subsystem, area, commissioning package, MC package and/or

individual tag.

NORSOK standard Page 2 of 26 System An operational system or a non-operational system.

Operational systems are dynamic process, utility or facility systems such as sea water, diesel, HVAC, telecom, main power and control

system

Non-operational systems are systems such as surface protection, insulation, civil, structural steel, markings and signs, cable and

tubing travs.

Mechanical Completion Status Index (MCSI)

This is a listing of all items/tags with associated check record status for each MC (or commissioning) package. The MCSI should be produced from the EDP based Project completion system.

Subsystem

A system broken down into functional subsystems.

Commissioning Package

A practical scope of work unit within a system or subsystem for commissioning, constituting a functional unit which can be tested by

commissioning to confirm its suitability for operation.

A practical unit of the scope of work for one discipline within a MC Package

commissioning package.

Commissioning (C) Is the functional verification of equipment and facilities that are

grouped together in systems.

Mechanical Completion

(MC)

The checking and testing of equipment and construction to confirm that the installation is in accordance with drawings and specifications and ready for commissioning in a safe manner and in compliance with project requirements.

The preventive maintenance carried out on equipment before it is Preservation

taken into use.

Factory Acceptance Test

(FAT)

Testing to be performed at suppliers workshop to verify the equipment's performance/functionality.

Mechanical Completion Certificate (MCC)

A MC Certificate issued by the Executor to document that his MC

scope has been carried

out. The MC Certificates shall be used per MC package.

Mechanical Completion Check Record (MCCR)

Punch List (PL)

A discipline checklist for the various equipment. These records form the basis of the MC documentation. MC Check Records are prepared

for one or more items for recording of

the results from checking and testing performed during MC. A Punch List describes incomplete work or malfunction of

equipment or construction.

This status means that this item is cleared and there is no further Status "OK"

work associated with this item.

Status "NA" This status means that the check is not applicable to the item

referenced in the Check Record (CR). The item may however be

applicable for subsequent executors.

This means that this check item is not completed, and that remaining Status "PA"

work is category 'A', i.e. must be completed prior to commissioning.

This means that this check item is not completed and that remaining Status "PB"

work is category 'B',

i.e. may be completed prior to or after commissioning.

A punch list register is a listing of all punch list items, prepared at a Punch List Register (PLR)

time when installation, functions or activities should have been

completed.

A register where incomplete items are documented sufficiently for Carry Over Work Register

NORSOK standard Page 3 of 26 (COWR) work preparation and completion. The COWR is based on the Punch

Lists Register and describes punch listed work to be transferred to

the next project executor.

MC dossier MC documentation compiled in MC package.

Commissioning dossier Commissioning documentation compiled in Commissioning dossier.

Executor An organisation, supplier, contractor that performs a predefined

scope of work.

4.2 Abbreviations

C Commissioning

COWR Carry Over Work Register

CR Check Record

FAT Factory Acceptance Test MC Mechanical Completion

MCC Mechanical Completion Certificate

MCCR Mechanical Completion Check Record (MCCR)

MCSI Mechanical Completion Status Index

MSL Material Status List

PCS Project Completion System

PL Punch List

PLR Punch List Register

RFCC Ready for Commissioning Certificate

5 COMPLETION PRINCIPLES

5.1 Overall goal

The overall goal of Mechanical completion and commissioning is to verify that the system is designed and built to fulfil its purpose and specified requirements.

The completion execution and documentation shall have as a goal to fulfil "NPD" rules as given in "Regulations for production and auxiliary systems".

Life cycle cost principles and safety should govern all decisions and actions.

Early establishment of commissioning packages is essential for an orderly and effective project completion. The commissioning plan shall have maximum priority to enable reversed planning in all project phases. All fabrication and installation planning shall be system oriented.

Mechanical completion, commissioning, FAT, Preservation and suppliers assistance requirements shall be specified in the purchase orders.

Repeating of MC/C checks performed at suppliers and assembly sites should be avoided, wherever possible.

5.2 Completion phases

5.2.1 Definition phase

In this phase the following is carried out:

• Completion philosophy.

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- Coding structure and system breakdown.
- Completion requirements to suppliers and contractors.

5.2.2 Engineering phase

In this phase the following is carried out:

- Commissioning Package & MC Package definition.
- Define commissioning network.
- Produce commissioning procedures.

5.2.3 Suppliers completion phase

Equipment suppliers shall execute MC, FAT and commissioning and preservation as specified in the purchase order. The completion shall be documented as part of the completion system which leads up to handover to the company/client.

5.2.4 Construction/assembly Phase

Executor shall perform MC and commissioning and preservation as specified in purchase order/contract documents. The completion is documented as part of the completion system which leads up to handover to the company.

5.3 Responsibilities

Responsibilities are defined in the contract.

MC execution and registration/documentation, shall be performed by anyone who has a scope of work to be performed, such as equipment suppliers, fabrication contractors, installation contractor and hook-up contractors.

Commissioning registration and documentation shall be performed by anyone who has this responsibility implemented in their scope of work.

5.4 Common requirements

This standard shall be used as a basis for preparing plans, procedures and documentation for Mechanical completion and commissioning. The implementation of this standard requires the use of a coding system for item and system numbering, e.g. NORSOK Z-DP-002, Coding system.

5.5 Documentation

Mechanical completion documentation shall be completed/executed per item/MC package.

Commissioning documentation shall be documented on a commissioning package level.

All check/test records shall end up in a status OK-PA-PB.

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5.6 Project Completion System (PCS)

An electronic based system for administration of Mechanical completion, commissioning and Punch List Register, should be used.

5.7 Planning

All MC activities shall be planned on fully integrated fabrication, Mechanical completion and commissioning schedules on system prioritised basis in order to meet the optimal sequence of completion.

6 MECHANICAL COMPLETION

6.1 Introduction

This chapter forms the basis for the execution and documentation of mechanical activities.

Mechanical completion takes place through all phases of the project, starting at equipment supplier and continuing through fabrication up to commissioning phase.

- Mechanical completion encompasses all disciplines.
- The detailed responsibilities are described in the contract.
- Executor of MC activities is responsible for establishing and compiling the MC dossiers and report status into PCS.

6.2 Documentation for a MC Package

The MC package shall consist of an MC Certificate, a MC Status Index and a Punch List Register printout as described below.

A Mechanical Completion Certificate (MCC) is a form completed by the Executor after all MC is carried out. The MCC is the cover sheet for each MC package. A MC package shall when signed be ready for start of commissioning.

The Check Records (CR) are the forms on which the Executors record the results of all checks, inspections and tests carried out for each individual item.

A Punch List Register (PLR) shall be prepared by the Executor along with the MC activity. In each MC package a printout from the PLR shall be included to document the incompleted work.

A MC Status Index (MCSI) listing the status of all CRs for the completed MC package shall be included in the MC documentation dossier.

6.3 Handover at Mechanical completion

Handover at Mechanical completion to commissioning shall be at commissioning package level, documented by the Ready for Commissioning Certificate (RFCC).

6.4 Carry Over Work Register (COWR)

The Carry Over Work Register lists all punch items that the Project accepts as cannot be completed during present phase. The COWR is used for the release of the work from the Executor and will as such be an input to the scheduling and planning of outstanding work to be performed during later phases.

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The COWR Item Number and cross reference to the Punch List Register/Check Records shall be given. COWR work shall be marked up on drawings or sketches and be included in the records.

COWR Material Status List (MSL) and marked up drawings/instruction shall contain sufficient information for job setting in a later phase.

6.5 Typical Mechanical completion activities

Mechanical completion activities includes checking of fabrication and installation work.

Executor shall complete packages related to listed disciplines and as required by the MCSI.

Executor shall complete the check list items as per the MCCR's. The activities shall include but not be limited to:

(see also Annex A for typical check records)

6.5.1 Mechanical

- Visual inspection for complete and correct installation.
- Internal inspection of tanks and vessels.
- Alignment.
- Load testing of lifting equipment.
- Hot oil flushing.
- Bolt tensioning.
- Dimension control.
- Preservation.

6.5.2 Electrical

- Visual inspection for complete and correct installation.
- Insulation and continuity testing of cables.
- Insulation testing of generator, transformers and motors, panels, distribution board etc.
- Earthing checks.
- Static check of switches and control devices.
- Battery preparations.
- Lighting and socket outlet checks.
- Area completion.
- Heat tracing.
- Preservation.

6.5.3 Instrument/Telecommunication

- Calibration and testing of instruments prior to installation.
- Visual inspection for complete and correct installation.
- Insulation and continuity testing of cables.
- Cleaning, flushing, pressure and leak testing of pneumatic and hydraulic tubing.
- Adjustment of control, alarm and shutdown settings.
- Loop testing.
- Function testing of control systems.
- Function testing of field instruments.
- Hot oil flushing of instrument tubing.
- Area completion.

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• Preservation.

6.5.4 **Piping**

- NDE carried out.
- Welding procedures.
- Removal of all items subject to damage during flushing, cleaning and pressure testing.
- Flushing of pipework.
- Chemical cleaning and testing of pipework.
- Drying of tested pipework.
- Preservation of tested pipework.
- Reinstatement of all items after testing.
- Final inspection of pipework.
- Test ISO's and P&ID's showing the extent of each pressure test.
- Pneumatic and hydraulic tubing.
- Hot oil flushing of pipework.
- Bolt tensioning.
- Pipe supports completed.
- Insulation.
- Flow coding.

6.5.5 HVAC

- Visual inspection for complete and correct installation.
- Cleaning of ductwork.
- Leak testing of ductwork.
- Alignment checks.
- Mechanical functions checks of equipment.
- Preservation.
- Flow coding.

6.5.6 *Safety*

- Visual inspection for complete and correct installation.
- Preservation.
- Area completion

6.5.7 Mechanical completion of non-operational systems

Mechanical completion of non-operational systems includes completion status and checks on an area basis. Disciplines included structural, surface protection, insulation, fireproofing and architectural.

6.5.8 Structural

- Visual inspection for complete and correct installation.
- QC documentation.
- NDE carried out.
- Welding.
- Load testing of lifting lugs and monorails.

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6.5.9 Surface protection, Insulation and Fire proofing

- Visual inspection for complete and correct application.
- Thickness checks carried out.
- Adhesion checks carried out.
- Preservation.
- Insulation.
- Painting.
- Fire proofing.

6.5.10 Architectural

- Visual inspection for complete and correct installation.
- Preservation.
- Doors.

7 COMMISSIONING

7.1 Introduction

This chapter forms the basis for preparation and execution of commissioning.

Commissioning take place when Mechanical completion is completed for a system or part of a system.

Commissioning can be divided into three main activities:

- Commissioning preparation
- Commissioning execution
- Commissioning documentation and handover to operation

Establishment of a commissioning network and definition of commissioning packages early in a Project in order to establish fabrication/installation priorities and milestones.

Definition of commissioning of part systems is essential in order to achieve an early commissioning completion.

7.2 Typical commissioning preparation activities

The preparatory work shall consist of activities such as:

- Development of commissioning organisation
- Development of system breakdown (partsystem)
- Commissioning packages definition
- Commissioning schedules
- Commissioning budget including spare parts for commissioning
- Commissioning preparation check record (ref. Annex B for typicals)

7.3 Commissioning procedure content

Commissioning shall be executed by guidance of a detailed procedure describing:

7.3.1 Objective

Details the operating parameters to be achieved.

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7.3.2 Description

Shall contain a brief description of the system/partsystems to be commissioned, including marked up P&ID as a basis for all functions to be tested.

7.3.3 Lists of temporary equipment and consumables

Lists all consumables, temporary equipment tools and requirements for suppliers assistance.

7.3.4 Health/Environment/Safety

A list of all toxic and polluting fluids and materials shall be made, describing their handling and disposal. A check list of all required safety precautions including requirements for work permit shall be made. Prior to energization of electrical equipment a livening up notice shall be issued in order to inform all involved parties of forthcoming energising.

7.3.5 Preservation

Requirements for removal of existing preservatives/protection shall be made and subsequent new preservation of the system if the system shall be out of operation for a period.

7.3.6 Scope

The scope shall detail the work to be done step by step including the commissioning preparation, check record (ref. Annex B).

Irregularities and/or faults shall be logged.

Equipment suppliers start-up procedures shall be incorporated.

Performance parameters shall be included for comparison of results with actual result achieved during commissioning.

7.3.7 Planning

Detailed commissioning plans for system/part system shall be worked out and shall include manhours per discipline, including supplier assistance man-hours.

7.3.8 Handover

The handover shall contain a certificate and other documents agreed with operation.

7.4 Commissioning documentation and handover to operation

Handover of systems from Executor to project/operation shall be according to a formal procedure which as a minimum should consist of:

- Completion acceptance certificate (signed by both parties).
- Commissioning P&ID showing the extent of the completed system.
- Authority certificates (if any).
- Operational procedures and handbooks.

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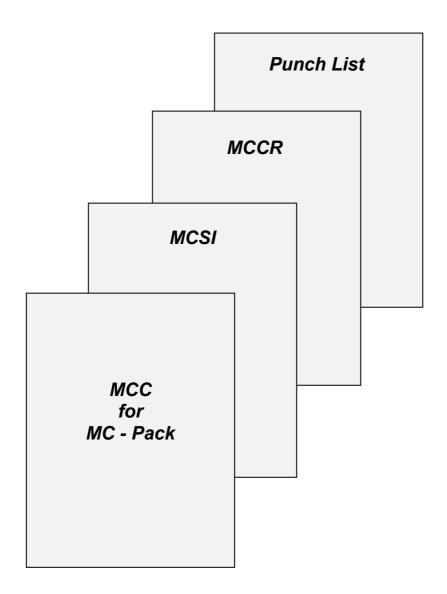
ANNEX A MECHANICAL COMPLETION DOCUMENTATION (TYPICALS) (INFORMATIVE)

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Documentation for a MC - Package



Mechanical Completion Certificate (MCC):

 States that all discipline related inspections and tests for a MC package have been carried out according to relevant contract documents.

Mechanical Completion Status Index (MCSI):

 A Computerised listing of all Tag/Cable/Test/MCCR in a MC Pack, which gives MC scope of work and status for a completed package.

Mechanical Completion Check Record (MCCR):

 Discipline checklist for the various equipment. These records form the basis of the MC documentation

MC Punch List (PL):

- Is the form on which the supplier and contractor record any outstanding work.

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Nors	0	K			ERTIFICAT MCC . 1, May 1996)	E		<project></project>				
MCC Description MCC Area MCC Site		:						MC Package No. Comm. Package No.				
System Sub System		:										
	SCOPE OF ACCEPTANCE											
	Discipline code:											
			Mechanical Comp	lete as	s per attached MCS	I						
			MCC status:			Date:						
documents, but with the					ted, tested and accepted i thed Punch List register.	n accordance with	the a	ttached MC check Records and other				
COMMENTS:												
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	Comp.			Comp.			Comp.					

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Name

Sign Date Comp.

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	It is hereby certified that the plant/equipment referenced has been ins documents, but with the exception of the outstanding work according						ed punc	h list regist	ter.		th the a	ttached a	cceptable		s and other			
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	MC CHECK RECORD INSTRUMENT INSTALLATION AND INSPECTION (Rev. 1, May 1996)									eet No.	<project></project>		
	No. : cription :				,	Area	:		M	MC Package No.			
PO						Syster			Co	mm.Pa	ickage No.		
	ufacturer :					Subsy							
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		INST	ALLATI	ON CHECK			SUPPL.	FABR.	НО	OK-UP	Punchlist item No.		
01	Check instrum	ent agai	nst data sl	neet									
02	Check CE mar	king											
03	Check calibrat	ion cert	ificate										
04	Installation che	eck											
05	Leakage test												
06	Flushing carrie	ed out											
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Tag No. :	•					M	C Packa	ge No.
Description :			A	Area :				
PO No. :			S	ystem :		C	omm.Pac	ckage No.
Manufacturer :			S	subsystem :				
	NSPECTION, DE- voltage and prope	ENERGISED STAT	ГЕ	SUPPL.	FABR.	НО	OK-UP	Punchlist item No.
		ngs against data shee	t					
02 Check CE-marking								
03 No mechanical dar								
04 No fluid leaks								
Nuts and bolts tigh	t							
O6 Terminal boxes and								
O7 All labelling and w	arning marks corre	ct						
08 Internal earthing co	orrect and securely	tight						
O9 All internal cabling	g and aux. wiring no	eat and healthy						
Heaters correctly in	nstalled							
Check motor insula	ation resistance. Re-	cord lowest reading						
(MOHM):								
12 Check bearing lubi	rication							
13 Check free rotation	n with driven equip.	uncoupled						
14 Check cooling syst	tem, dust and debris	removed						
Communication ar	rangement and brus	hes correct (DC only	7)					
Motor preservation	correct							
Push button station	1:							
a) Property suppo								
b) No mechanica	l damage							
c) Labelling & id	lentification correct							
18 Preservation carrie	d out.							
COMMENTS:								
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MC CHECK RECORD CENTRIFUGAL, SCHREWPUMP, COMPRESSOR AND HYDR.MOTOR

<Project>

Sheet No.

(Rev. 1, May 1996)

Tag No.	:			MC Package No.
Description	:	Area	:	
PO No.	:	System	:	Comm.Package No.
Manufacturer	:	Subsystem	:	

	INSPECTION ITEM	SUPPL.	FABR.	HOOK-UP	Punchlist item No.
01	Dataplate complies with data sheet				
02	Check CE-marking				
03	Skid installation correct				
04	Dowels fitted in pump feet				
05	Alignment Jack screws fit for driver				
06	Correct shimspack for driver fitted				
07	Alignment checked, see procedure				
08	Jack screws retracted after alignment				
09	Transmission checked				
10	Coupling guard checked				
11	Lubricant or preservation oil filled				
12	Constant oiler removed				
13	Grease nipples fitted				
14	Gland packing fitted				
15	Gland cooling fitted				
16	Mechanical seal fitted				
17	Pumpcase drain valve installed				
18	Pumpcase vent valve installed				
19	Drain line from skid pan installed				
20	Inlet/Outlet checked				
21	Skid mounted valves checked				
22	Paintwork completed				
23	NDE carried out				
24	Material certificate checked				
25	Pressure test carried out				
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COMMENTS:

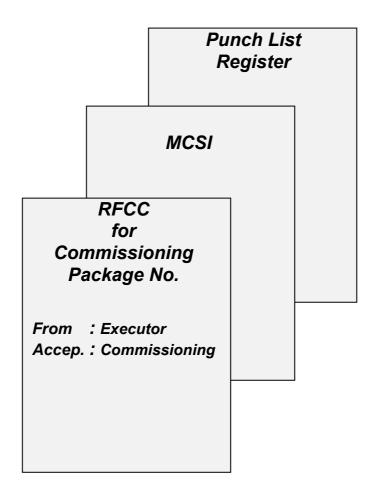
VERIFIED	\$	SUPPLIER		FABRICATION	HOOK-UP				
Name Sign Date	Executor		Executor		Executor				
Name Sign Date	Comp.		Comp		Comp.				

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MC Documentation for an Commissioning-Package



Ready for Commissioning Certificate (RFCC):

- Formal document for transfer a Commissioning Package from MC Executor to Commissioning.

Mechanical Completion Status Index (MCSI):

- A Computerised listing of all Tag/Cable/Test(MCCR) with status for the completed package.

MC Punch List Register:

- Is the form which describes any incomplete work per MC package.

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READY FOR COMMISSIONING

NORSOK		CER (Rev. 1	<project></project>	
System Subsystem Commissioning Package No. Commissioning Package Des		: : : :		
Mechanical completed as per	r attachment		ist Register ation Status	
Site:		RFCC Sta	atus:	
	Block letters:		Signature:	Date:
Status verified by executor				
	Yes	No		
Punch list items				
Comments:				
1	Block letters:		Signature:	Date:
Accepted ready for Commissioning by Com.responsible	Block letters.		Signature.	Date.

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ANNEX B COMMISSIONING DOCUMENTATION (TYPICALS) (INFORMATIVE)

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N	ELECTRIC		CPARATION (RECORD CAL EQUIPM 1, May 1996)	TENT	Check Record No.:		<project></project>	
System	:			Site Code	:	I A	Area:	
Subsyste	em :			Comm.Package N	lo. :			
Tag No	:			Description	:			
P.O. No.	. :			Supplier	:			
Chkp.	Check						Status	
No.	Descript					Supplier	Onshore	Offshore
01		ical Comple						
02		ation remove	ed					
03		ent cleaned.						
04	_	=	nstalled. Megger-test pe	erformed.				
05	"Living	Up Notice (LUN)" obtained.					
06	"In Ope	ration" Tag	fitted.					
07	All Safe	ty Requirem	nents satisfied.				ı	
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Executor		Name		Date:	Verified by:		Date	:
Supplier								
Onshore	: :							

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N	COMM. PREPARATION CHECK RECORD WATER MIST SYSTEM (Rev. 1, May 1996)			EM	Check Record		oject>			
System	:			Site Code	:	1	Area:			
Subsyste	em :			Comm.Package	No. :					
Tag No	:			Description :						
P.O. No.	. :			Supplier	:					
Chkp.						~	Status			
No. 01	Descript Mechan	t ion tical Comple	tion status			Supplier	Onshore	Offshore		
02		nance access								
03		on access.	•							
03		ent cleaned.								
05		ation remove								
06			Not Release).							
07		ank filled.	Not Resease).							
08		le charged.								
08		ng instructio	n vicihla							
10			n: Use MC Check Reco	\d						
10	Piping/i	10ZZIE SYSICI	II. USE MIC CHECK RECO	ora.						
		T = Q		I _	1					
Executor		Name		Date:	Verified by:		Date	:		
Supplier										
Onshore	2:									

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FIELD		EPARATION CHECK RECORD CHECK (HVAC) v. 1, May 1996)		Check Recor No.:		<pr< th=""><th>oject></th></pr<>	oject>		
System	:	1		Site Code	:		Area:		
Subsyste				Comm.Package N					
Tag No	:			Description	:				
P.O. No.	. :			Supplier	:				
Chkp.	Check			**			Stat	us	
No.	Descript					Supplier	Onsh		Offshore
01		ical Completi	on status.						
02		nance access.							
03		onal access.							
04		ent cleaned.							
05		ation removed							
06		on hatches.							
07		e connections.							
08		ad penetrations	S.				<u> </u>		
09	Support						<u> </u>		
10		nt insulation.							
11		rections corre							
12		ruments hooke							
13		ty precautions	carried out.						
14		nds removed.							
15	Check a	according to D	&ID				<u> </u>		<u> </u>
							1		
							1		
							i 		
Executo	r	Name		Date:	Verified by:	<u>.</u>		Date	:
Supplier	:								
Onshore	: :								
Offshore	e:								

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Norsok		SOK	COMM. PREPARATION CHECK RECORD DIESEL ENGINE (Rev. 1, May 1996)			Check Reco No.:		<pr< th=""><th>oject></th></pr<>	oject>
System	:			Site Code	:		Area:		
Subsyste	em :			Comm.Package N	No. :				
Tag No	:			Description	:				
P.O. No.	. :			Supplier	:				
Chkp.	Check						Stat	us	
No.	Descript					Supplier	Onsh	ore	Offshore
01		ical Complet							
02		nance access.							
03	•	onal access.							
04		ndes removed							
05		alves installe							
06		correct status							
07		ation remove	ed.						
08		lly clean.							
09		ıll filters.							
10		nts filled.							
11		ıbricant Oil p							
12	_	hand cranked							
13			Use MC Check Record	1.					
14	Couplin								
15	Radiato	r checked.							
16	Coolant	filled.							
17	Aspirati	ing system ch	necked.						
18	Exhaust	system chec	eked.						
19	Start sys	stem checked	d.						
20	Crank c	ase vent chec	cked.						
21	Fuel sur	oply system o	checked/filled.						
22	Remote	shut down re	eady.						
Executor	r	Name		Date:	Verified by:			Date	:
Supplier	:								
Onshore	2:								
Offshore	e:								

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FIELD P		FIELD P&I	PARATION (RECORD DIAGRAM C 1, May 1996)	Check Recor		<project></project>		
System	:			Site Code	:		Area:	
Subsyste				Comm.Package N				
Tag No	:			Description	:			
P.O. No.	. :			Supplier	:			
Chkp.	Check			_ ^ ^			Statu	s
No.	Description					Supplier	Onsho	re Offshore
01	-		cluded in Commissionii	ng pack.				
02	_	nd set pipe s						
03			nt flow direction correc	ct.				
04			orrect position.					
05	_	lates install						
06	All instru	ıments hook	ked up.					
07			racing sufficient.					
08	Check fro	ee movemei	nt of manual valve han	dles.				
09	Remove	dustblinds a	against safety valves etc	c.				
10	Install re	quired temp	orary filters.					
11	Install re	quired temp	orary blindings.					
12	Install re	quired temp	orary piping/hoses.					
13	Required	l video inspe	ection carried out.					
14	Remove	preservation	n where necessary.					
15	Mark pip	oing with Co	omm. tape/warning sign	ns.				
Executo	 r	Name		Date:	Verified by:] 1	Date:
Supplier		. ,			, criffed by.			
Onshore								
Offshore								

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