	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP-MACHINERY INSTALLATION (CENTRIFUGAL AND ROTARY PUMPS)	Project No. 080557C001	Document No. 080557C-000-QCP-6850-001	Rev. No. 0	Page 1 of 3

QUALITY CONTROL PLAN

MACHINERY INSTALLATION (CENTRIFUGAL AND ROTARY PUMPS)

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
CR 01, CR 01A, CR 01B	SINGLE REPORT FOR EACH ITEM
CW 58	SINGLE REPORT FOR EACH RELEASED GROUP OF ITEMS

REFERENCE DOCUMENTS:

- 080557C-000-PP-805
080557C-000-PP-807 Site Coordination & Communication Procedure.
Material Receiving, Inspection, Handling, Storage & Preservation
- 080557C-000-PP-804 Specification for Positive Material Identification at Construction Site.
- 080557C-000-JSD-2200-001 Job Specification for Hot Insulation of Vessels, Piping and Equipment
- 080557C-000-JSD-2200-002 Job Specification for Cold Insulation of Vessels, Piping and Equipment
- 080557C-000-PP-820 Standard specification for inspection, flushing and testing of piping systems & Equipment
- 080557C-000-JSC-0000-003 Standard specification for Erection of Equipment & Machinery
- DRAWINGS



LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PERPARATION
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

0	14.11.2019	ISSUED FOR IMPLEMENTATION	TB	PKP/LA	LA	JMC
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY
DOCUMENT REVISIONS						

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CONFIDENTIAL – Not to disclose without Authorization

 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP-MACHINERY INSTALLATION (CENTRIFUGAL AND ROTARY PUMPS)	Project No. 080557C001	Document No. 080557C-000-QCP-6850-001	Rev. No. 0	Page 2 of 3

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTRACT.	TECHNIP	
A)	PRELIMINARY ACTIVITIES				
A.1	CONTRACTOR DRAWINGS CHECK REVISION STATUS	N.A.	!	!	
A.2	CONTRACTOR TECHNICAL SPECIFICATIONS AND PROCEDURES	N.A.	P	A	
A.3	VENDOR INSTALLATION MANUAL	N.A.	R	INFO	(1)
A.4	CONTRACTOR METHOD STATEMENT & ENGINEERED LIFTING STUDY (IF REQUIRED)	N.A.	P	A	(1)
B)	BEFORE ERECTION				
B.1	MATERIAL MAINTENANCE CARD				(2)
B.2	MACHINERY ACCESSORIES IDENTIFICATION AND CONSERVATION STATUS	N.A.	WC	S	
B.3	MACHINERY FOUNDATION CHECK	CR 01	WC	W/R	
B.4	NAMEPLATE CHECK	CR 01	WC	S	
C)	PUMPS INSTALLATION				
C.1	SHIMS INSTALL. AND PROPER CHIPPING CHECK	CR 01	WC	R/S	
C.2	POSITIONING & PLANT AXES	CR 01	WC	R/S	
C.3	ELEVATION AND LEVELING	CR 01	WC	R/S	(3)
	– Pump without reducer	CR 01A			
	– Pump with reducer	CR 01B			
C.4	ELEVATION, LEVELING & VERTICALITY (FOR VERTICAL PUMPS)	CR 01	WC	R/S	
	– Pump without reducer	CR 01A			
	– Pump with reducer	CR 01B			
C.5	ANCHOR BOLTS PRETIGHTENING	CR 01	WC	R/S	
C.6	PREALIGNMENT AND COUPLING HUB DISTANCE	CR 01	WC	R/S	(3)
	– Pump without reducer	CR 01A			
	– Pump with reducer	CR 01B			
C.7	GROUTING AUTHORIZATION	CW 58 - CR 01	WC	A	(4)
C.8	FINAL ANCHOR BOLTS TIGHTENING	CR 01	WC	R/S	
C.9	FLANGE PARALLELISM BEFORE PIPING PRESSURE TEST	CR 01	WC	W/R	(3)
	– Pump without reducer	CR 01A			
	– Pump with reducer	CR 01B			

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QCP-MACHINERY INSTALLATION (CENTRIFUGAL AND ROTARY PUMPS)	Project No. 080557C001	Document No. 080557C-000-QCP-6850-001	Rev. No. 0	Page 3 of 3

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTRACT.	OWNER	
C.10	FINAL ALIGNMENT (FREE & FLANGED) AFTER PIPING P. T. (INCLUDING FLANGE PARALLELISM AFTER PIPING P. T.): <ul style="list-style-type: none"> – Pump without reducer – Pump with reducer 	CR 01 CR 01A CR 01B	WC	W/R	(3)
C.11	AUXILIARY PIPING INSTALLATION CHECK (IF ANY)	CR 01	WC	S	
C.12	CHECK OF ACCESSORIES (IF ANY)	CR 01	WC	S	
C.13	FINAL DOCUMENTATION REVIEW	CR 01			

NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO OWNER FOR INFORMATION.

- (2) "MATERIAL MAINTENANCE CARD" (IF ANY) WILL BE DELIVERED BY CONTRACTOR WAREHOUSEMAN TO CONTRACTOR SITE TOGETHER WITH THE RELEVANT MACHINERY. MACHINERY MAINTENANCE ACTIVITIES (BEFORE AND AFTER INSTALLATION) SHALL BE RECORDED.
- (3) FOR DATA RECORD USE: QCF CR01A FOR PUMPS WITHOUT REDUCER
QCF CR01B FOR PUMPS WITH REDUCER
- (4) GROUTING AUTHORIZATION REPORTS WILL BE ALWAYS AVAILABLE DURING THE CONSTRUCTION BUT NOT INCLUDED IN THE CONSTRUCTION QUALITY DOSSIER.

GENERAL NOTES

- 1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN-CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- 2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



PROJECT:

COMPANY:

QUALITY CONTROL FORM

CR 01

PROJ. No.:

QCF REV. 0

SH. 1 OF 1

**CENTRIFUGAL AND ROTARY PUMPS INSTALL.
SUMMARY REPORT**

CONTRACTOR:

CR 01 N° _____

ITEM: _____ TYPE: _____ VENDOR: _____

M.R. _____ AREA: _____ SYSTEM: _____

WITHOUT REDUCER ☐ (USE FORM **CR 01A**)WITH REDUCER ☐ (USE FORM **CR 01B**)

INSPECTION CHECK LIST (Ref. to QCP 6850.01)		N.A.	ACC.	REMARKS/ REFERENCES	INSPECTOR SIGNATURE & DATE		
B.3	MACHINERY FOUNDATION CHECK	<input type="checkbox"/>	<input type="checkbox"/>				
B.4		<input type="checkbox"/>	<input type="checkbox"/>				
C.1	SHIMS INSTALL. AND PROPER CHIPPING CHECK	<input type="checkbox"/>	<input type="checkbox"/>				
C.2		<input type="checkbox"/>	<input type="checkbox"/>				
C.3	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01A (*)			
	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01B (*)			
C.4		<input type="checkbox"/>	<input type="checkbox"/>				
C.5		<input type="checkbox"/>	<input type="checkbox"/>				
C.6	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01A (*)			
	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01B (*)			
C.7		<input type="checkbox"/>	<input type="checkbox"/>	CW 58 (*)			
C.8		<input type="checkbox"/>	<input type="checkbox"/>				
C.9	FLANGE PARALLELISM BEFORE PIPING P.T.	<input type="checkbox"/>	<input type="checkbox"/>	CR 01A (*)			
	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01B (*)			
C.10	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01A (*)			
	-	<input type="checkbox"/>	<input type="checkbox"/>	CR 01B (*)			
C.11		<input type="checkbox"/>	<input type="checkbox"/>				
C.12		<input type="checkbox"/>	<input type="checkbox"/>				

NOTES: (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES :

CR 01A N° _____ CR 01B N° _____ CW 58 N° _____

C-13)	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

TECHNIP INDIA LIMITED

		PROJECT:																																																		
QUALITY CONTROL FORM CR 01A		COMPANY:																																																		
CENTRIF. AND ROTARY PUMPS ALIGNMENT REPORT WITHOUT REDUCER		PROJ. No.:	QCF REV. 0																																																	
		SH. 1 OF 1																																																		
		CONTRACTOR:																																																		
		CR 01A N° ____																																																		
ELEVATION AND LEVELING (REF. POS. C.3) <input type="checkbox"/> ELEVATION, LEVELING AND VERTICALITY (REF. POS. C.4) <input type="checkbox"/>		ALIGNMENT RECORD OF ITEM _____ DRIVER TO PUMP FINAL ALIGNMENT – FREE (REF.POS. C.10) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>POSITION</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <td>RADIAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AXIAL</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		POSITION	A	B	C	D	RADIAL					AXIAL																																						
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RADIAL																																																				
AXIAL																																																				
DRIVER TO PUMP PRE ALIGNMENT (REF. POS. C.6) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>POSITION</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <td>RADIAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AXIAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		POSITION	A	B	C	D	RADIAL					AXIAL										DRIVER TO PUMP FINAL ALIGNMENT - FLANGED (REF. POS. C.10) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th rowspan="2">POSITION</th> <th colspan="2">RADIAL</th> <th colspan="2">AXIAL</th> </tr> <tr> <th>SUCT.</th> <th>DISCH.</th> <th>SUCT.</th> <th>DISCH.</th> </tr> <tr> <td>A</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>D</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		POSITION	RADIAL		AXIAL		SUCT.	DISCH.	SUCT.	DISCH.	A					B					C					D				
POSITION	A	B	C	D																																																
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A																																																				
B																																																				
C																																																				
D																																																				
		POSITION VIEWED FROM DRIVER																																																		
FLANGE PARALLELISM (REF. POS. C.9 AND C.10) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th rowspan="2"></th> <th colspan="2">BEFORE PIPING PRESSURE TEST</th> <th colspan="2">AFTER PIPING PRESSURE TEST</th> </tr> <tr> <th>VERT.</th> <th>HORIZ.</th> <th>VERT.</th> <th>HORIZ.</th> </tr> <tr> <td>FLANGES</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SUCTION</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DISCHARGE</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			BEFORE PIPING PRESSURE TEST		AFTER PIPING PRESSURE TEST		VERT.	HORIZ.	VERT.	HORIZ.	FLANGES					SUCTION					DISCHARGE					COMPARATOR READING ON COUPLING HUB _____ <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>COUPLING HUB DISTANCE</th> <th>L</th> </tr> <tr> <td>REQUIRED</td> <td></td> </tr> <tr> <td>ACTUAL (REF. POS. C.6)</td> <td></td> </tr> <tr> <td>ACTUAL (REF. POS. C.10)</td> <td></td> </tr> </table>		COUPLING HUB DISTANCE	L	REQUIRED		ACTUAL (REF. POS. C.6)		ACTUAL (REF. POS. C.10)																		
	BEFORE PIPING PRESSURE TEST		AFTER PIPING PRESSURE TEST																																																	
	VERT.	HORIZ.	VERT.	HORIZ.																																																
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NOTE: - ALL DIMENSIONS ARE IN mm - FOR TOLERANCES SEE VENDOR INSTALLATION MANUAL		REMARKS:																																																		
INSPECTORS	CONTRACTOR	TECHNIP	OWNER																																																	
NAME																																																				
SIGNATURE																																																				
DATE																																																				



PROJECT:

COMPANY:

QUALITY CONTROL FORM

CR 01B

PROJ. No.:

QCF REV. 0

SH. 1 OF 1

**CENTRIF. AND ROTARY PUMPS ALIGNMENT
REPORT WITH REDUCER**

CONTRACTOR:

CR 01B N° _____

ELEVATION AND LEVELING (REF. POS. C.3) ☐ELEVATION, LEVELING AND VERTICALITY
(REF. POS. C.4) ☐

ALIGNMENT RECORD OF ITEM _____

**FINAL ALIGNMENT - FLANGED (REF. POS. C.10)
PUMP TO REDUCER**

POSITION	RADIAL		AXIAL	
	S	D	S	D
A				
B				
C				
D				

**FINAL ALIGNMENT - FREE (REF. POS. C.10)
PUMP TO REDUCER**

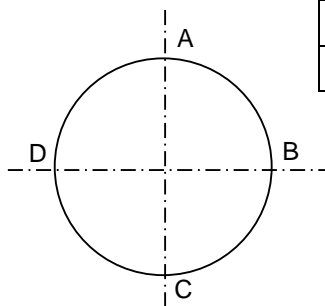
POSITION	A	B	C	D
RADIAL				
AXIAL				

**FINAL ALIGNMENT - FLANGED (REF. POS. C.10)
REDUCER TO DRIVER**

POSITION	RADIAL		AXIAL	
	S	D	S	D
A				
B				
C				
D				

**FINAL ALIGNMENT - FREE (REF. POS. C.10)
REDUCER TO DRIVER**

POSITION	A	B	C	D
RADIAL				
AXIAL				

POSITION VIEWED
FROM MOTOR

COMPARATOR READING

ON HALF COUPLING _____

**PRE ALIGNMENT (REF. POS. C.6)
PUMP TO REDUCER**

POSITION	A	B	C	D
RADIAL				
AXIAL				

**PRE ALIGNMENT (REF. POS. C.6)
REDUCER TO DRIVER**

POSITION	A	B	C	D
RADIAL				
AXIAL				

FLANGES PARALLELISM (REF. POS. C.9 AND C.10)

FLANGES	BEFORE PIPING PRESSURE TEST		AFTER PIPING PRESSURE TEST	
	VERT.	HORIZ.	VERT.	HORIZ.
SUCTION				
DISCHARGE				

HALF COUPLING DISTANCE	L1	L2
REQUIRED		
ACTUAL (REF. POS. C.6)		
ACTUAL (REF. POS. C.10)		

NOTE:

- ALL DIMENSIONS ARE IN mm
- FOR TOLERANCES SEE VENDOR INSTALLATION MANUAL

REMARKS:

INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			



PROJECT:

COMPANY:

QUALITY CONTROL FORM

CW 58

PROJ. No.:

QCF REV. 0

SH. 1 OF 1

GROUTING AUTHORIZATION REPORT

CONTRACTOR:

CW 58 N° _____

STEEL STRUCTURES ☐STATIC EQUIPMENT ☐ROTATING MACHINERY ☐_____ ☐**ITEMS TO BE GROUTED**

_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____

_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____
_____	AREA	_____

RELEASED BY_____
MECHANICAL
CONTRACTOR_____
DATE_____
TECHNIP_____
DATE

REMARKS:

RECEIVED BY_____
CIVIL
CONTRACTOR_____
DATE_____
TECHNIP_____
DATE