


	<b>Offshore Design Section</b> <b>Engineering Services</b> <b>ISO – 9001:2008</b>	<b>LIST OF</b> <b>IRTs ( INSPECTION</b> <b>REQUIREMENT TABLE) &amp;</b> <b>APPROVAL</b>	<b>Date</b>	<b>06.01.2017</b>
			<b>Discipline</b>	<b>ALL</b>
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### Index of IRT

Sl. No.	Discipline	IRT No.	Nos. of IRT	Rev. No.	Rev. date
1	Electrical IRTs	ODS/ELE/IRT/01 to 21	21	1	06.01.2017
2	Instrumentation IRTs	ODS/INST/IRT/001 to 8,9A,9B,10A,10B, 11A,11B,12A,12B, 13-43	47	1	22.12.2016
3	Structure IRTs	ODS/STR/IRT/01 to 9, 9A,10 to 12, 12A	14	1	18.11.2016
4	Pipeline IRTs	ODS/PIPELINE/IRT/01 to 20	20	0	08.03.2016
5	Mechanical IRTs	ODS/MECH/IRT/01 to 6,8 to 14,14B,14A, 15 to 25, 27-34,29M,36,38,40 to 52, S-01 to 3,4,8 to 10	57	0	08.03.2016
6	Piping IRTs	ODS/PPG/IRT/01 to 25	25	0	08.03.2016
		<b>Total nos. of IRT=</b>	<b>184</b>		

FORMAT No. ODS/SOF/047A	Ref. PROCEDURE No. ODS/SOP/023	ISSUE No. 02	REV. No. 00	REV. DATE: 08.03.2016
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	<b>Offshore Design Section Engineering Services ISO – 9001:2008</b>	<b>Common Legends &amp; Notes of IRTs ( INSPECTION REQUIREMENT TABLE) &amp; APPROVAL</b>	<b>Date</b>	<b>18/11/2016</b>
			<b>Discipline</b>	<b>QA</b>
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## **Subject: Explanation of common Legends & Notes**

### **1.0 Definition of Inspection categories A, B , C & BULK**

#### **1.1 Inspection Category : "A":**

##### **i) At Vendor's Place:-**

- a) ONGC/CA and Contractor/Contractor's IA shall carry out appropriate stage as well as Final Inspection as per approved ITP/QAP and issue IR/IRN.
- b) ONGC/CA shall either issue their separate IR/IRN or will endorse the IR/IRN issued by Contractor/Contractor's Inspection Agency.

##### **AND**

##### **ii) At Fabrication Yard/ Offshore Installation:-**

- a) Material received at Yard shall be verified by ONGC appointed TPI/CA with respect to Tag / Marking / Identification and IR/IRN etc.
- b) IR/IRN shall be submitted to ONGC's TPI & CA for IMIR /GIIR clearance.

#### **1.2 Inspection Category : "B":**

##### **i) At Vendor's Place :-**

- a) ONGC / CA shall carry out Final Stage Inspection at Vendor's place..
- b) Contractor/Contractor's IA shall carry out Appropriate Stage as well as Final Inspection as per approved ITP/QAP.
- c) ONGC/CA shall either issue their separate IR/IRN or will endorse the IR/IRN issued by Contractor IA.

##### **AND**

##### **ii) At Fabrication Yard/Offshore Installation :**

- a) Material received at Yard shall be verified by ONGC appointed TPI/CA with respect to Tag / Marking / Identification and IR/IRN etc.
- b) IR/IRN shall be submitted to ONGC's TPI & CA for IMIR /GIIR clearance.

#### **1.3 Inspection Category : "C":**

##### **i) At Vendor's Place :**


- a) Contractor/Contractor's IA shall carry out the Final Inspection as per the approved ITP / QAP and issue IR/IRN.

##### **AND**

##### **ii) At Fabrication Yard /Offshore Installation:**

- a) Material received at yard shall be verified by ONGC appointed TPI / CA with respect to Tag / Marking / Identification and IR/IRN etc. In case of Random Inspection, it shall be done as per guide lines of RW.
- b) IR/IRN with Backup Documents shall be submitted to ONGC's TPI & CA for IMIR /GIIR clearance.

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#### **1.4 Inspection Category : “Bulk”:**

##### **i) At Vendor's Place :**

- a) Contractor /Contractor IA shall carry out Inspection / review the manufacturer test certificate and issue IR/IRN.

**AND**


##### **ii) At Fabrication Yard/Offshore Installation :**

- a) Material received at yard shall be verified by ONGC appointed CA & TPI with respect to Tag / Marking / Identification etc. In case of Random Inspection, it shall be done as per guide lines of RW.
- b) IR/IRN with back up documents shall be submitted to ONGC's TPI & CA for IMIR /GIIR clearance.

#### **2.0 Legends:**

- a) CA- Certification Agency appointed by ONGC
- b) TPI- Third Party Agency appointed by ONGC
- c) Contractor IA- Contractor's Inspection agency, appointed by the LSTK Contractor
- d) ITP / QCP/QAP - Inspection & Test Plan / Quality Control Plan/Quality Assurance Plan
- e) IRT - Inspection Requirement Table.
- f) IR/IRN - Inspection Report/ Inspection Release Note.
- g) IMIR/GIIR-Inward Material Inspection Report/Goods Inward Material Inspection.
- h) I- information.
- i) A – Approval.
- j) R – Review.
- k) Rw or RW - Random Witness Inspection
- l) W- Witness Inspection.
- m) R/W- Review & Witness Inspection.
- n) X-Submission of Supporting Documents during review at any stage.
- o) Is- Issue of documents like Inspection Release Note (IRN)/report etc.
- p) FAT - Factory Acceptance Test
- q) SAT – Site Acceptance Test

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### **3.0 Explanation of terminology used in ITPs, viz. RANDOM WITNESS 'HOLD INSPECTION', WITNESS.**

#### **i) Rw or RW: Random WITNESS ( Inspection)**

- Sampling percentage shall be specified as minimum 10% and shall do marking ( Metal/Rubber stamping ) & serial nos. or lot no. shall be logged in IR/IRN.
- Any non-conformances ( NC) or discrepancies observed during the inspection of 1<sup>st</sup> lot of 10%, then 2<sup>nd</sup> lot of next 20% shall be inspected, further if any NC observed then all the 100% shall be inspected.
- Vendor will raise notification for the timing of Inspection / Test. In case CA doesn't visit within specified time of the agreed schedule, vendor may proceed with Inspection & further work in presence of Contractor /Contractor IA. Record of inspection will be submitted to CA for review.

#### **ii) H – Hold (Inspection):**

- Vendor shall give 5 working days (as applicable) advance notification in case of Inspection in India and 10 working days in case of Inspection in abroad to Inspection agency (Contractor /Contractor IA and CA) as specified in approved ITP. Vendor shall ensure readiness of Internal 'QAD / Factory' Inspection reports.
- Vendor shall not proceed with further operation without clearance from Contractor / Contractor IA (or) waiver from the Inspection agency for whom the 'hold inspection' point is indicated i.e. Contractor / Contractor IA / Company CA as applicable. In case waiver is obtained, then IR/IRN shall be issued based on review of Inspection report of that Inspection stages.


#### **iii) W – Witness (100% inspection)**

- Vendor shall give 5 working days (as applicable) advance notification in case of Inspection in India and 10 working days in case of Inspection in foreign to Inspection agency (Contractor /Contractor IA and Company CA) as specified in approved ITP. Vendor shall ensure readiness of Internal 'QAD / Factory' Inspection reports/ Release note.
- In case Certifying agency does not visit within the specified time of the agreed schedule, vendor may proceed with the Inspection and for further operations in presence of Contractor / Contractor IA. Record of Inspection carried out by vendor and Contractor / Contractor IA shall be provided to CA for review and for obtaining the Release Note.

### **4.0 General NOTES:**

- Note-1:** Contractor/Contractor IA shall carry out Inspection and/or review the Documents as per approved ITP/QAP and prepare the Final Release Note. Contractor shall opt for ONGC empanelled Inspection agency as Contractor IA , but will exclude the agencies appointed by ONGC as their CA & TPI for that particular project.

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- b) Note-2:** For ASME Coded vessel Fabrication, ASME AI (Authorized Inspector) will carry out Inspection as per code requirements. Contractor/Contractor IA shall carry out Inspection as per ITP/QAP.
- c) Note-3:** Random Inspection as per guide lines of RW may be carried out by CA for Inspection of Category C & Bulk items, if required as and when specified in IRT/QAP.
- d) Note 4:** At the time of inspection for category A, B or C, if any additional test required shall be carried out as per referred standard, mentioned in FS apart from IRT.
- e) Note 5:** This IRT is issued to provide extensive guidelines for preparation of ITP/QAP.
- f) Note 6:** This IRT is for the inspection by the above mentioned inspection agencies. Any class / statutory body inspection wherever required / applicable, shall be in addition to this.
- g) Note 7:** For all the bulk category items, the documentation (MTC, Test Certificate/ Report/ FAT, IRN, etc) shall be submitted by contractor to Company for review and record, prior to issue of IMIR/GIIR (Except for Bulk items pertaining to Piping Discipline)
- h) Note 8:** Material of any category shall be used by contractor only after clearance by ONGC/Certification Agency (CA) of IMIR/GIIR against complete documentation (MTC, Test Certificate/ Report/FAT, IRN, etc).

<b>Prepared / Revised By</b>	<b>Reviewed By</b>	<b>Approved By</b>
G. Jana	M.R. Shete	S.C.Jain

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Offshore Design Section  
Engineering Services  
ISO – 9001:2008

LIST OF  
IRTs ( INSPECTION  
REQUIREMENT TABLE) &  
APPROVAL

Date 06/01/2017  
Discipline ELECTRICAL  
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SI No	Item	IRT No	Rev No	Category
1	AC DC Distribution Board/Lighting and Power Distribution Board	ODS/ELE/IRT/01	1	C
2	Battery-Battery Charger	ODS/ELE/IRT/02	1	B
3	CCTV	ODS/ELE/IRT/03	1	C
4	HV Switch Gear	ODS/ELE/IRT/04	1	B
5	Lighting Fixture, Junction Box (For Hazardous area /safe area)	ODS/ELE/IRT/05	1	C
6	Lighting Transformer	ODS/ELE/IRT/06	1	C
7	L V Switchgear	ODS/ELE/IRT/07	1	B
8	Electric Motor (Above 1 kV)	ODS/ELE/IRT/08	1	B
9	Electric Motor (less than 1 kV)	ODS/ELE/IRT/09	1	C
10	Paging and intercom system	ODS/ELE/IRT/10	1	B
11	Power and Distribution Transformer	ODS/ELE/IRT/11	1	B
12	Radio system	ODS/ELE/IRT/12	1	C
13	Sacrificial Anode	ODS/ELE/IRT/13	1	B
14	SOLAR ELECTRIC POWER SYSTEM(Including Lead acid Battery)	ODS/ELE/IRT/14	1	B
15	Subsea Cable	ODS/ELE/IRT/15	1	A
16	Surface Electrical Cables	ODS/ELE/IRT/16	1	C
17	Synchronous Generator	ODS/ELE/IRT/17	1	B
18	UPS System (Including NiCd Battery)	ODS/ELE/IRT/18	1	B
19	Navigational Aids System	ODS/ELE/IRT/19	1	C
20	Heat Tracing System	ODS/ELE/IRT/20	1	C
21	Miscellaneous Bulk Item	ODS/ELE/IRT/21	1	Bulk

Prepared / Revised By	Reviewed By	Approved By
<i>B. Raju</i> 06-01-2017	<i>[Signature]</i> 06/11/17	<i>[Signature]</i> 6/1/2017 A. Jagannathan

		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		<table><tr><td>IRT No.</td><td>ODS/ELE/IRT/01</td></tr><tr><td>Rev. No.</td><td>1</td></tr><tr><td>Discipline</td><td>ELECTRICAL</td></tr><tr><td colspan="2">Inspection Category: C</td></tr></table>	IRT No.	ODS/ELE/IRT/01	Rev. No.	1	Discipline	ELECTRICAL	Inspection Category: C	
IRT No.	ODS/ELE/IRT/01													
Rev. No.	1													
Discipline	ELECTRICAL													
Inspection Category: C														
<b>Item:</b> (1) AC DC Distribution Board/Panel (2) Lighting and Power Distribution Board/Panel (3) Hazardous Area Lighting Board/Panel														
Activity No	1. Inspection by ONGC /Certification Agency (CA)													
	2. Inspection by ONGC /Third Party Inspector (TPI)													
	3. Inspection by EPC / EPC's Inspection Agency (IA)													
	4. Inspection by Vendor/ Sub vendor													
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval													
	6. Stages of Inspection													
	<b>General &amp; documents- For Review/Approval /Information</b>													
1	A		R	R	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4004 / FS 4035 ) & FAT Procedure								
2	R		R	R	X	Report of Tests: Routine Test, Type Test, Test certificate as per the requirement of FS 4004, 4035, Test certificate for Major Bought out components, test certificate for enclosure class. Surface preparation and Coating etc.								
3	R		R	R	X	Bill of Material Check, Functional check including interlocks, Control and Protection Devices, Visual indication / Alarms, Space Heater, Thermostat, Wiring check as per approved schematic drawings.								
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>								
4	-		RW	W	X	Visual inspection, Dimensional check, Workmanship Check including Accessories, Name plate, Paint Shade, Earthing, Wire size, Bus Bar Size / Clearance, Cable Entry etc.,								
						<b>IRN For issue by CA/TPI/Contractor IA</b>								
5	-		Is	H	X	Issue & Documentation at Vendor Place								
						<b>IMIR/GIIR at Yard/Offshore</b>								
6	RW	RW		H	X	Verification of items as per IRN								
7	Is	R			X	IMIR/GIIR on the basis of IRN								

LEGENDS & NOTES: Explained separately

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**Offshore Design  
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**INSPECTION  
REQUIREMENT  
TABLE**

IRT No.	ODS/ELE/IRT/02
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	


**Item:** Battery and Battery Charger (Packaged Item)

Activity No		1. Inspection by ONGC / Certification Agency (CA)					
			2. Inspection by ONGC / Third Party Inspector (TPI)				
				3. Inspection by EPC / EPC's Inspection Agency (IA)			
					4. Inspection by Vendor/ Sub vendor		
						5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval	
						6. Stages of Inspection	
						<b>General &amp; documents- For Review/Approval /Information</b>	
1	A		R	R	X	QA Plan/ inspection and Test Plan (ITP) (To include tests as per IEC 62040, IEEE and FS 4023) & FAT Procedure	
2	R		R	R	X	Report of Tests: Routine Test, Type Test, Test certificates as per the requirement of IEC 62040, IEEE and FS 4023, Capacity and load cycle test for battery, Surface preparation and Coating etc.	
3	R		R	R	X	Review of Material Test Certificates (As applicable) for Major Bought out components, test certificate for enclosure class.	
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>	
4	W		W	W	X	Visual & Dimension Check, Workmanship, Components arrangement, Name Plate, interconnection cable check, Physical Cell marking, polarity, battery charging and discharging test report.	
						<b>Functional tests</b>	
5	W		W	W	X	Burn out test for 100 hrs.	
6	W		W	W	X	Functional tests for all controls and alarms for correct setting and operation.	
7	W		W	W	X	Insulation resistance test of all wiring	
						<b>Routine Test</b>	
8	W		W	W	X	As per IEC 62040, IEEE and FS 4023	
						<b>IRN For issue by CA/TPI/Contractor IA</b>	
9	Is		R	H	X	Issue & Documentation at Vendor Place	
						<b>IMIR/GIIR at Yard/Offshore</b>	
10	W	W		H	X	Verification of items as per IRN	
11	Is	R			X	IMIR/GIIR on the basis of IRN	

LEGENDS & NOTES : Explained separately

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ODS/SOF/004A	ODS/SOP/023	'01	'00	08.03.2016



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IRT No.	ODS/ELE/IRT/03										
Rev. No.	1										
Discipline	ELECTRICAL										
Inspection Category: C											
<b>Item: CCTV</b>											
Activity No	1.					1. Inspection by ONGC / Certification Agency (CA)					
	2.					2. Inspection by ONGC / Third Party Inspector (TPI)					
	3.					3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4.					4. Inspection by Vendor/ Sub vendor					
	5					Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6.					6. Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>					
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (To include all tests as per FS4032)					
2	R	-	R	H	X	Procedures- Reports of Tests: Type test, Hazardous area classification certificates as applicable.					
3	R	-	R	H	X	Review of Material Test Certificates(MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.					
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>					
4	-	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,					
						<b>Routine Test</b>					
5	-	-	W	W	X	Complete system check including software and Pan and Zoom check					
						<b>IRN For issue by CA/TPI/Contractor IA</b>					
6	-	-	Is	H	X	Issue & Documentation at Vendor Place					
						<b>IMIR/GIIR at Yard/Offshore</b>					
7	W	W	-	H	X	Verification of items and all test reports as per IRN					
8	Is	R			X	IMIR/GIIR on the basis of IRN					

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/04
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

**Item:**

**HT SWITCH GEAR**

Activity No	1. Inspection by ONGC /Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan as per IEC 62271& FAT Procedure
2	R	-	R	H	X	Reports of Tests- Type Test, Surface preparation & coating etc. Ingress Protection (IP)
3	R	-	R	H	X	Review of Material Test Certificates, conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						<b>Inspection and Testing</b>
4	W	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						<b>Routine Test</b>
5	W	-	W	W	X	As per IEC 62271.
						<b>IRN For issue by CA/TPI/Contractor IA</b>
6	Is	-	R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
7	W	W		H	X	Verification of items as per IRN
8	Is	R			X	IMIR/GIIR on the basis of IRN

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## INSPECTION REQUIREMENT TABLE


IRT No.	ODS/ELE/IRT/05
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: C	

**Item:** Lighting Fixture, Junction Box (For Hazardous area /safe area)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspection (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A		R	H	X	QA Plan/ Inspection and Test Plan to include FS 4006, 4010, 4012, 4028 as applicable & FAT Procedure.
2	R		R	H	X	Reports of Tests – Type Test, Routine Test, FAT, Test certificate for area classification as applicable, Ingress protection, Surface preparation & coating etc.
3	R		R	H	X	Review of Material Test Certificates including interlocks, Control and Protection Devices etc.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	-		W	W	X	Visual inspection, Dimensional check, Workmanship Check including Accessories, Name plate, Paint Shade, Earthing, Wire size, Clearance, Cable Entry etc.,
						<b>IRN For issue by CA/TPI/Contractor IA</b>
5	-		Is	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
6	W	W		H	X	Verification of items along with all test reports as per IRN
7	Is	R			X	IMIR/GIIR on the basis of IRN

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IRT No.	ODS/ELE/IRT/06													
Rev. No.	1													
Discipline	ELECTRICAL													
Inspection Category: C														
Item: Lighting Transformer														
Activity No	1. Inspection by ONGC / Certification Agency (CA)													
	2. Inspection by ONGC / Third Party Inspector (TPI)													
	3. Inspection by EPC / EPC's Inspection Agency (IA)													
	4. Inspection by Vendor/ Sub vendor													
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval													
	6. Stages of Inspection													
						General								
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (FS 4009) & FAT Procedure.								
2	R	-	R	H	X	Reports of Tests – Type Tests, FAT, Calibration of test equipment.								
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc. for all major bought out components/ items as listed in QAP.								
						Inspection and Testing								
4	-	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,								
						Routine Test								
5	-		W	W	X	As per FS 4009								
						IRN For issue by CA/TPI/Contractor IA								
6	-	-	Is	H	X	Issue & Documentation at Vendor Place								
						IMIR/GIIR at Yard/Offshore								
7	W	W		H	X	Verification of items along with all test reports as per IRN								
8	Is	R			X	IMIR/GIIR on the basis of IRN								
LEGENDS & NOTES : Explained separately														

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/07
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

### Item: L T Switchgear

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General</b>
1	A		R	H	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4013 and IEC 60947) & FAT Procedure.
2	R		R	H	X	Reports of Tests: Type test, FAT.
3	R		R	H	X	Review of Material Test Certificates - interlocks, Control and Protection Devices, Visual indication / Alarms, Space Heater etc.
						<b>Inspection and Testing</b>
4	W		W	W	X	Visual inspection, Dimensional check, Workmanship Check including Accessories, Name plate, Paint Shade, Earthing, Wire size, Bus Bar Size / Clearance, Cable Entry etc.,
						<b>Acceptance Test</b>
5	W		W	W	X	As per FS 4013
						<b>Routine Test</b>
6	W		W	W	X	As per IEC 60947..
						<b>IRN For issue by CA/TPI/Contractor IA</b>
7	Is		R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
8	W	W		H	X	Verification of items as per IRN
9	Is	R			X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/08
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

### Item: ELECTRIC MOTOR (Above 1 kV)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan as per FS4008 and IEC 60034 & FAT Procedure.
2	R	-	R	H	X	Procedures - FAT Procedure, Reports of Test – Type Tests, test certificates including hazardous area classification/ enclosure protection as applicable.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc. for all major bought out components/ items as listed in QAP.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	W	-	W	H	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						<b>Routine Test as per IEC 60034 including the following</b>
5	W		W	H	X	Resistance measurement of windings
6	W		W	H	X	Resistance measurement of temperature detectors
7	W		W	H	X	Resistance measurement of heater
8	W	-	W	H	X	No load loss and no load current measurement
9	W		W	H	X	Short circuit test
10	W		W	H	X	High voltage test
11	W		W	H	X	Insulation Resistance Test
12	W	-	W	H	X	Vibration measurement
						<b>IRN For issue by CA/TPI/Contractor IA</b>
13	Is	-	R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
14	W	W		H	X	Verification of items as per IRN
15	Is	R			x	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/09
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: C	

**Item:** ELECTRIC MOTOR (less than 1 kV)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan as per FS4008 and IEC 60034 & FAT Procedure.
2	R	-	R	H	X	Reports of Test – Type Tests, FAT, test certificates for hazardous area classification/ enclosure protection as applicable.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	-	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						<b>Routine Test</b>
5	-		W	W	X	Resistance measurement of windings
6	-		W	W	X	Resistance measurement of heater (As applicable)
7	-	-	W	W	X	No load loss and no load current measurement
8	-		W	W	X	Short circuit test
9	-		W	W	X	Insulation Resistance Test
						<b>IRN For issue by CA/TPI/Contractor IA</b>
10	-	-	Is	H	X	Issue & Documentation at Vendor Place
						IMIR/GIIR at Yard/Offshore
11	W	W		H	X	Verification of items along with all test reports as per IRN
12	Is	R			X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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IRT No.	ODS/ELE/IRT/10
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Discipline	ELECTRICAL
Inspection Category: B	

Item: Paging and intercom system

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3.Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						General
1	A		R	H	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4036) & FAT Procedure.
2	R		R	H	X	Reports of Tests – Type tests, FAT, Type test certification and approval/Listing by approved agencies or UL/FM, Hazardous area certification and IP rating as per data sheet.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						Inspection and Testing
4	W	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						Routine Test
5	W		W	W	X	Functional test with all devices interconnected to verify system operation
						IRN For issue by CA/TPI/Contractor IA
6	Is		R	H	X	Issue & Documentation at Vendor Place
						IMIR/GIIR at Yard/Offshore
7	W	W		H	X	Verification of items as per IRN
8	Is	R			X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately





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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/11
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

### Item: Power and Distribution Transformer

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3.Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
						Stages of Inspection
						General & documents- For Review/Approval /Information
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (All Tests as per IEC 60076-11, FS 4042) & FAT Procedure.
2	R	-	R	H	X	Reports of Tests – Type Tests, FAT, Calibration of test equipment.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						Inspection & Testing- For Witness/ Random Witness
4	W	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						Routine Test
5	W		W	W	X	As per IEC 60076-11
						Acceptance Tests as per FS 4042 including the following
6	W		W	W	X	Polarization index test as per ANSI/IEEE
7	W		W	W	X	Noise level Test
						IRN For issue by CA/TPI/Contractor IA
8	Is	-	R	H	X	Issue & Documentation at Vendor Place
						IMIR/GIIR at Yard/Offshore
9	W	W		H	x	Verification of items as per IRN
10	Is	R			x	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/12
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: C	

**Item:** Radio system

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3.Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor			5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
	6. Stages of Inspection					
	General & documents- For Review/Approval /Information					
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan as per FS 4037.
2	R	-	R	H	X	Reports of Tests – Type test ( Electromagnetic compatibility), Hazardous area classification as per applicability.
3	R	-	R	H	X	Type approval certificates for GMDSS/SOLAS/ICAO/FCC/CCIR/CCITT/ITU/FAA/IEC pertaining to relevant Radio systems.
4	R	-	R	H	X	Review of Material Test Certificates (as applicable)
						Inspection and Testing
5	-	-	W	W	X	Visual inspection, OEM documents and technical literature.
						Routine Test
6	-		W	W	X	Functional test
						IRN For issue by CA/TPI/Contractor IA
7	Is	-	R	H	X	Issue & Documentation at Vendor Place
						IMIR/GIIR at Yard/Offshore
8	W	W		H	X	Verification of items as per IRN
9	Is	R			X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/13
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

### Item: Sacrificial Anode (Cathodic Protection System)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (To include tests as per DNV 401B, FS 4001/4002) & FAT Procedure.
2	R	-	R	H	X	Reports of Test – Type test (As per DNV including Chemical composition tests), FAT.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	W	-	W	W	X	Visual inspection, Dimensional check, Weighing, Packaging, Workman ship,
						<b>Acceptance Test as per applicable FS 4001/4002 including the following</b>
5	W	-	W	W	X	Performance Tests (Potential and capacity)
6	W	-	W	W	X	Destructive tests as per FS 4001/4002 or nondestructive radiography. (At least one anode per delivery or at least 0.5 percent of the anodes shall be subjected to destructive testing)
7	W	-	W	W	X	Electrical continuity test between anode and connector (should be less than 0.005 ohm)
						<b>Routine Test</b>
8	W		W	W	X	As per DNV 401B
						<b>IRN For issue by CA/TPI/Contractor IA</b>
9	Is	-	R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
10	W	W		H	X	Verification of items as per IRN
11	Is	R			X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE


IRT No.	ODS/ELE/IRT/14
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: B	

**Item:** SOLAR ELECTRIC POWER SYSTEM (INCLUDING LEAD ACID BATTERY)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3.Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection involved					
						General & documents- For Review/Approval /Information
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan including FS-4007 A, IEC 61215 & FAT Procedure.
2	R	-	R	H	X	Reports of Tests – Type Tests as per FS 4007 A and IEC 61215 including Enclosure Class, Hazardous Area classification(as applicable), Type tests of battery as per FS 4007A, Capacity and load cycle test for battery.
3	R	-	R	H	X	Review of Material Test Certificates (as applicable). Internal test report, all test certificates/components certificates/Manufacturer reports from all major bought out components & accessories(as applicable)
						Inspection and Testing
4	W	-	W	W	X	Final Visual inspection, Dimensional check,Tag plate/Name plate, Workmanship,Earthing Point Check, Quality & quantity check,rating check, Accessories check(As applicable)
						Routine Tests
5	W	-	W	W	X	As per FS 4007 A and IEC 61215 for solar system IEEE standard for Battery.
						IRN For issue by CA/TPI/Contractor IA
6	Is		R	H	X	Issue & Documentation at Vendor Place
						IMIR/GIIR at Yard/Offshore
7	W	W		H	X	Verification of items as per IRN
8	Is	R		-	X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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IRT No.	ODS/ELE/IRT/15													
Rev. No.	1													
Discipline	ELECTRICAL													
Inspection Category: A														
Item: Submarine Cable														
Activity No	1. Inspection by ONGC / Certification Agency (CA)													
	2. Inspection by ONGC / Third Party Inspector (TPI)													
	3. Inspection by EPC / EPC's Inspection Agency (IA)													
	4. Inspection by Vendor/ Sub vendor													
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval													
	6. Stages of Inspection													
						General & documents- For Review/Approval /Information								
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4020) & FAT Procedure.								
2	R	-	R	H	X	Reports of Tests – Type Tests (as per As per IEC 60502, Tensile Test, Partial discharge test, Water ingress and hydraulic pressure test, High Voltage Test, Temperature stability test), FAT, Calibration of test equipment.								
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.								
						Inspection & Testing- For Witness/ Random Witness								
4	W	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,								
5	W		W	W	X	Physical inspection of Straight through Joining Kit, Hanger clamps, Bull nose (Pulling stockings/ abandonment kit/ sealing caps), Cable repair kit								
						Routine Test								
6	W		W	W	X	As per IEC 60502/IEC 60840								
						Acceptance Test								
7	W	-	W	W	X	Tests recommended during manufacturing in FS 4020 Factory acceptance tests in FS 4020 Type Tests mentioned in FS 4020 Pre load out, Post load tests recommended by vendor.								
						IRN For issue by CA/TPI/Contractor IA								
8	Is	-	R	H	X	Issue & Documentation at Vendor Place								
						IMIR/GIIR at Yard/Offshore								
9	W	W		H	X	Verification of items as per IRN								
10	Is	R			X	IMIR/GIIR on the basis of IRN								

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/16
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: C	

### Item: SURFACE ELECTRICAL CABLES (FS 4011)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	Stages of Inspection					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan , LV cables as per IEC 60092-353 Tables 4 to 6 , HV cables as per IEC 60092-354 Tables 3 to 5, Fire resistant cables as per IEC 60092-353 – Table 7 & FAT Procedure.
2	R	-	R	H	X	Procedures - FAT Procedure, Reports of Tests – Type Tests, FAT, Calibration of test equipment.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	-	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						<b>Routine Test</b>
5	-	-	W	W	X	Tests as per approved QA Plan/Inspection Test plan
						<b>IRN For issue by CA/TPI/Contractor IA</b>
6	-	-	Is	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
7	W	W		H	X	Verification of items along with test certificates as per IRN
8	Is	R		-	X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

<b>IRT No.</b>	<b>ODS/ELE/IRT/17</b>
<b>Rev. No.</b>	<b>1</b>
<b>Discipline</b>	<b>ELECTRICAL</b>
<b>Inspection Category: B</b>	

**Item:** SYNCHRONOUS ALTERNATOR (Turbine Generator / Diesel Generator)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stages of Inspection					
						<b>General</b>
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan as per IEC 60034 ,FS4040 for GTG ,FS 4030 for Emergency Generator & FAT Procedure.
2	R	-	R	H	X	Reports of Tests – Type Tests as per IEC 60034, certificates for hazardous area classification/ enclosure protection as applicable.
3	R	-	R	H	X	Review of Material Test Certificates (MTC), conformance / compliance certificate, test reports etc for all major bought out components/ items as listed in QAP.
						<b>Inspection and Testing</b>
4	W	-	W	W	X	Visual inspection, Dimensional check, Name plate, Workman ship,
						<b>Routine Test</b>
5	W		W	W	X	All tests as per IEC 60034
						<b>Acceptance Tests</b>
6	W		W	W	X	Tests mentioned at FS 4040 / FS 4030 as applicable.
						<b>IRN For issue by CA/TPI/Contractor IA</b>
7	Is	-	R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
8	W	W		H	X	Verification of items as per IRN
9	Is	R		-	X	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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## INSPECTION REQUIREMENT TABLE

IRT No.	ODS/ELE/IRT/18
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Discipline	ELECTRICAL
Inspection Category: B	


### Item: UPS System (INCLUDING NiCd BATTERY)

Activity No	1. Inspection by ONGC / Certification Agency (CA)					
	2. Inspection by ONGC / Third Party Inspector (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	<b>Stages of Inspection</b>					
						<b>General &amp; documents- For Review/Approval /Information</b>
1	A		R	H	X	QA Plan/ Inspection and Test Plan (Include tests as per IEC 62040, IEEE and FS 4025) & FAT Procedure.
2	R		R	H	X	Reports of Tests – Type Tests, FAT, Capacity and load cycle test for battery
3	R		R	H	X	Review of Material Test Certificates (As applicable) for Major Bought out components, test certificate for enclosure class.
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>
4	W	--	W	W	X	Visual and dimensional check, Model no / Type verification, Workmanship check, Name plate / Tagging check, Earthing point check, Cable entry, Panel display check, Terminals check, paint shade check, Qty check ,Certified Blind Plug, Accessories check etc. (As applicable).
						<b>Acceptance Tests</b>
5	W		W	W	X	To include all tests as per FS 4025.
						<b>Routine Test</b>
6	W	--	W	W	X	All tests as per IEC 62040 for UPS and IEEE for Battery.
						<b>IRN For issue by CA/TPI/Contractor IA</b>
7	Is		R	H	X	Issue & Documentation at Vendor Place
						<b>IMIR/GIIR at Yard/Offshore</b>
8	W	W		H	X	Verification of items as per IRN
9	Is	R			W	IMIR/GIIR on the basis of IRN

LEGENDS & NOTES : Explained separately

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	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>					<b>INSPECTION REQUIREMENT TABLE</b>		<b>IRT No.</b>		<b>ODS/ELE/IRT/19</b>	
								<b>Rev. No.</b>		<b>1</b>	
								<b>Discipline</b>		<b>ELECTRICAL</b>	
								<b>Inspection Category: C</b>			
<b>Item: NAVIGATIONAL AIDS SYSTEM</b>											
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency.(CA)</b>										
	<b>2. Inspection by ONGC / Third Party Inspection(TPI)</b>										
	<b>3. Inspection by EPC / EPC's Inspection Agency (IA)</b>										
	<b>4. Inspection by Vendor/ Sub Vendor</b>										
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>										
	<b>6.Stage of Inspection Involved</b>										
	<b>General &amp; documents- For Review/Approval /Information</b>										
	1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4003A as applicable).				
	2	R	-	R	H	X	Reports of Tests – Type Tests ( Specified Enclosure Class(as applicable), Hazardous Area Classification (as applicable). Range test certificate for Marine Lantern).				
	3	R	-	R	H	X	Review of Material Test Certificates (As applicable) for Major Bought out components, test certificate for enclosure class.				
<b>General &amp; documents- For Review/Approval /Information</b>											
4	-	-	W	W	X	Final Visual inspection, Dimensional check, Tag plate/Name plate, Workman ship, Earthing Point Check, Quality & quantity check, rating check, Accessories check(As applicable)					
<b>Routine Test</b>											
5	-		W	W	X	Functional Test of complete system including Synchronization as per approved QAP/ITP					
<b>IRN For issue by CA/TPI/Contractor IA</b>											
6	-		Is	H	X	Review of final documentation and issue of Release note					
<b>IMIR/GIIR at Yard/Offshore</b>											
7	W	W	-	H	X	Verification of items along with all test reports as per IRN					
8	Is	R		-	X	IMIR/GIIR on the basis of IRN					
<b>LEGENDS &amp; NOTES: Explained separately</b>											

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## INSPECTION REQUIREMENT TABLE


IRT No.	ODS/ELE/IRT/20
Rev. No.	1
Discipline	ELECTRICAL
Inspection Category: C	

Item: **ELECTRICAL HEAT TRACING SYSTEM**

Activity No.	1. Inspection by ONGC / Certification Agency.(CA)					
	2. Inspection by ONGC / Third Party Inspection(TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/ Sub Vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval					
	6. Stage of Inspection Involved					
						General & documents- For Review/Approval /Information
1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (All tests as per FS 4016 and IEEE 515)
2	R	-	R	H	X	Reports of Tests – Type Tests, Hazardous area classification area certificates as applicable.
3	R	-	R	H	X	Review of Material Test Certificates (As applicable)
						General & documents- For Review/Approval /Information
4	-	-	W	W	X	Final Visual inspection, Dimensional check, Tag plate/Name plate, Workmanship, Quality & quantity check, rating check, Accessories check(As applicable)
						Routine Test
5	-		W	W	X	As per IEE515
						IRN For issue by CA/TPI/Contractor IA
6	-		Is	H	X	Review of final documentation and issue of Release note
						IMIR/GIIR at Yard/Offshore
7	W	W	-	H	X	Verification of items along with all test reports as per IRN
8	Is	R		H	X	IMIR/GIIR on the basis of IRN

**LEGENDS & NOTES:** Explained separately

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	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>	<b>INSPECTION REQUIREMENT TABLE</b>	<table border="1"> <tr> <td>IRT No.</td> <td>ODS/ELE/IRT/21</td> </tr> <tr> <td>Rev. No.</td> <td>1</td> </tr> <tr> <td>Discipline</td> <td>ELECTRICAL</td> </tr> <tr> <td colspan="2">Inspection Category: Bulk</td> </tr> </table>	IRT No.	ODS/ELE/IRT/21	Rev. No.	1	Discipline	ELECTRICAL	Inspection Category: Bulk	
IRT No.	ODS/ELE/IRT/21										
Rev. No.	1										
Discipline	ELECTRICAL										
Inspection Category: Bulk											
<b>Item:</b> (1) Fluorescent / Incandescent Class-“B” LTG Fixtures (FS 4028) (2) Div.2 Aviation Marker Lighting Fixtures (FS 4006) (3) Hazardous Area Lighting Fixtures (FS 4006) (4) Multi Cable Transit (MCT) (5) Cable Glands (FS4043) (6) Explosion Proof Control Stations (FS 4012) (7) Industrial Type Plug and Sockets (FS 4034) (8) Welding Receptacles & Convenience Outlets (Flameproof) (FS 4034) (9) FRP Cable Tray (FS4005)											
Activity No.	1. Inspection by ONGC / Certification Agency.(CA)										
	2. Inspection by ONGC / Third Party Inspection(TPI)										
	3. Inspection by EPC / EPC's Inspection Agency (IA)										
	4. Inspection by Vendor/ Sub Vendor										
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval										
	6. Stage of Inspection Involved										
	<b>General &amp; documents- For Review/Approval /Information</b>										
	1	A	-	R	H	X	QA Plan/ Inspection and Test Plan (All tests as per referred FS as applicable)				
	2	R	-	R	H	X	Reports of Tests – Type Tests as per NEMA-FG-1 (Destruction load test, Deflection test), Fire retardant test (class 1 fire rating as per ASTM E84).				
	3	R	-	-	H	X	Review of Material Test Certificates (As applicable)				
	<b>General &amp; documents- For Review/Approval /Information</b>										
4	-	-	RW	W	X	Final Visual inspection, Dimensional check, Tag plate/Name plate, Workmanship, Quality & quantity check.					
<b>IRN For issue by CA/TPI/Contractor IA</b>											
5	-		Is	H	X	Review of final documentation and issue of Release note					
<b>IMIR/GIIR at Yard/Offshore</b>											
6	W	W	-	H	X	Verification of items along with all test reports as per IRN					
7	Is	R		H	X	IMIR/GIIR on the basis of IRN					
<b>LEGENDS &amp; NOTES: Explained separately</b>											

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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LIST OF  
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REQUIREMENT TABLE )  
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Discipline INSTRUMENTATION  
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Sr.No.	Description of Item	IRT no.	Inspection Category	Rev. No.	Rev. Date
1.	Distributed Control System (DCS)	ODS/INST/IRT/001	B	1	22.12.2016
2.	Control Valve	ODS/INST/IRT/002	B	1	22.12.2016
3.	Safety Relief Valves	ODS/INST/IRT/003	B	1	22.12.2016
4.	Self-Actuated Pressure Control Valves	ODS/INST/IRT/004	B	1	22.12.2016
5.	Multi-Phase Flow Meter	ODS/INST/IRT/005	B	1	22.12.2016
6.	F&G Detection system	ODS/INST/IRT/006	B	1	22.12.2016
7.	Deluge Valve	ODS/INST/IRT/007	B	1	22.12.2016
8.	F&G Detectors	ODS/INST/IRT/008	B	1	22.12.2016
9.	Coriolis Flow Meter	ODS/INST/IRT/009A	B	1	22.12.2016
10.	Coriolis Flow Meter	ODS/INST/IRT/009B	C	1	22.12.2016
11.	Ultrasonic Flow Meter	ODS/INST/IRT/010A	B	1	22.12.2016
12.	Ultrasonic Flow Meter	ODS/INST/IRT/010B	C	1	22.12.2016
13.	Magnetic Flow Meter	ODS/INST/IRT/011A	B	1	22.12.2016
14.	Magnetic Flow Meter	ODS/INST/IRT/011B	C	1	22.12.2016
15.	Turbine Flow Meter	ODS/INST/IRT/012A	B	1	22.12.2016
16.	Turbine Flow Meter	ODS/INST/IRT/012B	C	1	22.12.2016
17.	DP Cone Meter	ODS/INST/IRT/013	C	1	22.12.2016
18.	Orifice Assembly & Restriction Orifice	ODS/INST/IRT/014	C	1	22.12.2016
19.	Electronic Transmitter	ODS/INST/IRT/015	C	1	22.12.2016
20.	Level Transmitter (Radar Type / Displacer Type)	ODS/INST/IRT/016	C	1	22.12.2016
21.	Pressure / DP Gauges	ODS/INST/IRT/017	C	1	22.12.2016
22.	Temperature Gauge	ODS/INST/IRT/018	C	1	22.12.2016
23.	Temperature Switch	ODS/INST/IRT/019	C	1	22.12.2016
24.	Level Gauges	ODS/INST/IRT/020	C	1	22.12.2016
25.	Instrument Tubes and Instrument Fittings & Valves	ODS/INST/IRT/021	C	1	22.12.2016
26.	Manual Alarm Station / Sounder / Annunciator / Beacon / Strobe Light / Miscellaneous Items	ODS/INST/IRT/022	BULK	1	22.12.2016
27.	Field Panels / Junction Boxes	ODS/INST/IRT/023	BULK	1	22.12.2016
28.	MCT Blocks	ODS/INST/IRT/024	BULK	1	22.12.2016
29.	Manual ESD / FSD Station & Valves, Fusible Plugs	ODS/INST/IRT/025	C	1	22.12.2016
30.	CABLE(Electrical, Instrument, Communication and Earthing)	ODS/INST/IRT/026	C	1	22.12.2016
31.	Subsea Umbilical	ODS/INST/IRT/027	B	1	22.12.2016
32.	Senior Orifice Meter	ODS/INST/IRT/028	C	1	22.12.2016
33.	Portable Calibrator	ODS/INST/IRT/029	C	1	22.12.2016
34.	Flow Totalizer	ODS/INST/IRT/030	C	1	22.12.2016
35.	Pneumatic Pressure Indicating Controller	ODS/INST/IRT/031	C	1	22.12.2016
36.	Pneumatic Level Switch	ODS/INST/IRT/032	C	1	22.12.2016
37.	Shutdown Panel	ODS/INST/IRT/033	B	1	22.12.2016
38.	Pneumatic Pressure Switch	ODS/INST/IRT/034	C	1	22.12.2016
39.	Rotameter	ODS/INST/IRT/035	C	1	22.12.2016
40.	Pressure Switch (Elec.)	ODS/INST/IRT/036	C	1	22.12.2016
41.	Level Switch (Elec.)	ODS/INST/IRT/037	C	1	22.12.2016
42.	Flow Computer	ODS/INST/IRT/038	C	1	22.12.2016

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22/12/2016





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IRTs ( INSPECTION  
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43.	SSIV Actuator & HPU cum CP	ODS/INST/IRT/039	B	1	22.12.2016
44.	PLC	ODS/INST/IRT/040	B	1	22.12.2016
45.	Water Cut Meter	ODS/INST/IRT/041	C	1	22.12.2016
46.	Wet Gas Meter	ODS/INST/IRT/042	B	1	22.12.2016
47.	Flow Switch (Pneumatic/ Electrical)	ODS/INST/IRT/043	C	1	22.12.2016

Prepared / Revised By	Reviewed By	Approved By
MD, Dy.S.E(I)	ARD, DGM(E&T) Discipline Head	KM, GM(I) Group Head

FORMAT No. ODS/SOF/047A	Ref. PROCEDURE No. ODS/SOP/023	ISSUE No. 02	REV. No. 00	REV. DATE: 04 03 2016
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		<table><tr><td>IRT No.</td><td>ODS/INST/IRT/01</td></tr><tr><td>Rev No</td><td>1</td></tr><tr><td>Discipline</td><td>Instrumentation</td></tr></table>		IRT No.	ODS/INST/IRT/01	Rev No	1	Discipline	Instrumentation
IRT No.	ODS/INST/IRT/01												
Rev No	1												
Discipline	Instrumentation												
Item: DCS				FS No.-C100		Inspection Category: B							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	FAT & SAT Procedure.							
3	R	--	R	H	X	Bill of material including Software / Hardware completeness.							
4	R	--	R	H	X	Internal test reports of vendor's QA/QC and Pre FAT signed by Vendor QAD. Certificate from vendor QAD for 30 day burn in period.							
5	R	--	R	H	X	Test certificates , Compliance Certificates , Manufacturer Reports							
6	R	--	R	H	X	Certificate for specified area classification , certificate for conformal coating , certificate for Enclosure class etc.							
7	R	--	R	H	X	Type test certificates for SIL as per company specification. (As Applicable)							
8	R	--	R	H	X	Type test certificates for RFI & EMC etc. as per FS.							
Inspection & Testing- For Witness/ Random Witness													
9	W	--	W	H	X	Final Visual, Dimensional, Cable entry checks, Tagging , Nameplate check, earthing system, paint shade, Check for Consoles, Spare capacity verification, Accessories check.							
10	W	--	W	H	X	Bill of material verification including programming, Software, Hardware completeness.							
11	W	--	W	H	X	Heat soak test at vendor's works							
						"FAT (Factory Acceptance Tests) : Complete functional check by simulation of operational logic, Logic scheme check as per safe chart/causes & effect diagram by simulation of various I/O's, interlock & shutdown logic, check of visual, audible alarms							
						Redundancy check, system diagnostic, CPU failure, CPU & communication loading, power supply failure, check for Console display, keyboard & printer operation, On-line card changeover check, SOE test, interface with Third party devices, ( As applicable).							
						System response, Scan time check, System configuration check, power supply variation check, Loop checking (100%) etc.							
						Trends & Reports, MIS checks etc.							
						Noise level measurement as per company specification.							
12	RW	--	RW	H	X	System I/O map display and Graphics Check							
13	W	--	W	W	X	Painting / Protective coating -Final DFT & color code (if applicable) as per ONGC Spec. 2005							
14	Is	-	R	H	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
15	W	W		H	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
16	R	R			X	Verification of items as per IRN							
17	W	W		H	X	IMIR/GIIR on the basis of IRN							
SAT/Performance Test in field (offshore platform) by the vendor.													
LEGENDS & NOTES: Explained separately													
Format No		Ref. Proc. No		Issue No		Rev No							
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						Rev. Date							
						04.03.2016							

		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/02</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/02</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/02</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Control Valve and Accessories</b>				<b>FS No.-3700</b>		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts ( NACE for sour service)							
4	R	--	R	H	X	NDT records (As applicable).							
5	R	--	R	H	X	Report of 100% RT or 100% UT for all casting & Welding.							
6	R	--	R	H	X	Factory test reports, Calibration test certificates for Valves, Manufacture certificate/Conformity certificate for major bought out item viz ; solenoid, limit switch, actuator, smart positioner, Air filter regulator (as applicable)							
7	R	--	R	H	X	Type test certificate for Hazardous area classification ( Test certificate / Conformity certificate ) & Test certificate / Conformity certificate for enclosure class,( As Applicable), referring to accessories viz; solenoid, limit switch, positioner, AFR ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	W	--	W	H	X	Hydro test for body & Seat leak test as per ASME B16.34 clause 7.1 & ASME/FCI 70.2							
9	W	--	W	H	X	Final Visual, Dimensional (1pc/type/model/lot), Tagging, Nameplate check (as per ONGC Spec FS 3700, REV 4), Direction marking on valve, cable entry, Pneumatic process connection, Accessories check etc.							
10	W	--	W	H	X	Functional check , Operation check, Calibration check (100% per type)							
11	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
12	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
13	Is	-	R	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
14	W	W		H	X	Verification of items as per IRN							
15	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/03</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/03</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/03</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Safety Relief Valves / Pressure Safety Valves				<b>FS No.-</b> 3701		<b>Inspection Category:</b> B							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval /Information</b>													
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure, Leak Test Procedure, NDT Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service)							
4	R	--	R	H	X	NDT records (As applicable).							
5	R	--	R	H	X	All casting & welding shall be 100% radiographed.							
6	R	--	R	H	X	Factory test reports, Calibration test certificates & Manufacture certificate/Conformity certificate for valves (as applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	W	--	RW	H		Hydro test for body, Pop-up test at set pressure & Seat leak test as per ASMEB16.34 clause 7.1 & ASME/FCI 70.2							
9	W	--	W	H	X	Final Visual, Dimensional(1pc/type/model/lot) as per API/ASME/ASTM std.							
10	W	--	W	H	X	Tagging, Nameplate check (as per ONGC Spec FS 3701 REV 3), ASME Code stamping on valve, Accessories check etc.							
11	W	--	W	H	X	Functional check , Operation check , Calibration check as per API 527(100% per type)							
12	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
13	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
14	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
15	W	W		H	X	Verification of items as per IRN							
16	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/04</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/04</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/04</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Self actuated pressure control valve				<b>FS No.-</b> 3702		<b>Inspection Category:</b> B							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates , Compliance certificates for wetted parts (NACE for sour service)							
4	R	--	R	H	X	Casting & Welding shall be 100% RT or 100% UT for forged item.							
5	R	--	R	H	X	NDT records (As applicable).							
6	R	--	R	H	X	Factory test reports , Calibration test certificates & Manufacture certificate/Conformity certificate for valves (as applicable)							
7	R	--	R	H	X	Type test certificate for Hazardous area classification ( Test certificate / Conformity certificate ) & Test certificate / Conformity certificate for enclosure class,( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	W	--	W	H	X	Hydro test for body & Seat leak test							
9	W	--	W	H	X	Final Visual, Dimensional (1pc/type/model/lot), Tagging, Nameplate check (as per ONGC Spec FS 3702) , Direction Marking on assembled valve, Accessories check etc.							
10	W	--	W	H	X	Functional check , Operation check , Calibration check (100% per type)							
11	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
13	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
14	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
15	W	W		H	X	Verification of items as per IRN							
16	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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																		Rev No		1			
																		Discipline		Instrumentation			
Item: Multiphase Flow Meter (MPFM)												FS No.-3209						Inspection Category: B					
Activity No	1. Inspection by ONGC / Certification Agency (CA)																						
	2. Inspection by ONGC / Third Party Inspector (TPI)																						
	3. Inspection by EPC / EPC's Inspection Agency (IA)																						
	4. Inspection by Vendor/ Sub vendor																						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval																						
	6. Stages of Inspection																						
												General & documents- For Review/Approval /Information											
1	A	--	R	H	X	Inspection and Test Plan & FAT procedure																	
2	A	--	R	H	X	Hydro test Procedure, Functional test procedure(as applicable)																	
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A																	
4	R	--	R	H	X	NDT records (As applicable).																	
5	R	--	R	H	X	Type test certificate for Hazardous area classification ( Test certificate / Conformity certificate ) & Test certificate / Conformity certificate for enclosure class,( As Applicable)																	
6	R	--	R	H	X	Factory test reports, Calibration test certificates, Manufacture certificate/Conformity certificate for major bought out item.																	
												Inspection & Testing- For Witness/ Random Witness											
7	RW	--	W	H	X	Hydro test/Leak test (as applicable)																	
8	RW	--	W	H	X	Final Visual, Dimensional(1pc/type/model) , Tagging , Nameplate check , Mounting type/Process/Process connection check , Display check ,Cable entry check ,Flow direction check ,Flange finish check, Accessories check etc.																	
9	RW	--	W	H	X	Functional check of meter assembly Including input signals, outputs, display check etc.) { As Applicable }																	
10	RW	--	W	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005																	
11	RW	--	W	H	X	Software package version & license verification (As applicable) (*Random witness 10%).																	
12	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS. FAT at Vendor's place																	
												IRN For issue by CA/TPI/Contractor IA											
13	Is	-	R	H	X	Issue & Documentation at Vendor Place																	
												IMIR/GIIR at Yard/Offshore											
14	W	W		H	X	Verification of items as per IRN																	
15	IS	R			X	IMIR/GIIR on the basis of IRN																	

LEGENDS & NOTES: Explained separately


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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/06</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/06</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/06</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: F&amp;G Detection System</b>				<b>FS No.-3500</b>		<b>Inspection Category: B</b>							
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	FAT & SAT Procedure.							
3	R	--	R	H	X	Bill of material including Software, Hardware completeness.							
4	R	--	R	H	X	Internal test reports of vendor's QA/QC and Pre FAT signed by Vendor QAD. Certificate from vendor QAD for 30 day burn in period..							
5	R	--	R	H	X	Test certificate , Compliance Certificate , Manufacturer Reports							
6	R	--	R	H	X	Certificate for specified area classification,, certificate for conformal coating , certificate for Enclosure class.							
7	R	--	R	H	X	Type test certificates for SIL as per company specification. (As Applicable)							
8	R	--	R	H	X	Type test certificates for RFI & EMC etc. as per FS.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
9	W	--	W	H	X	Final Visual, Dimensional, Cable entry checks, Tagging, Nameplate check, earthing system, paint shade, Check for Consoles, Spare capacity verification, Accessories check.							
10	W	--	W	H	X	Bill of material verification including programming, Software / Hardware completeness.							
11	W	--	W	H	X	"FAT (Factory Acceptance Tests) : Complete functional check by simulation of operational logic, Logic scheme check as per safe chart/causes & effect diagram by simulation of various I/O's, interlock & shutdown logic, check of visual, audible alarms							
12	RW	--	RW	H	X	Painting / Protective coating -Final DFT & color code (if applicable) as per ONGC Spec. 2005							
13	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
15	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
16	W	W		H	X	Verification of items as per IRN							
17	R	R			X	IMIR/GIIR on the basis of IRN							
18	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/07</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/07</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/07</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Deluge Valves				<b>FS No.-</b> 3703		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts ((NACE for sour service)							
4	R	--	R	H	X	Casting & Welding shall be 100% RT or 100% UT for forged item.							
5	R	--	R	H	X	NDT records (As applicable).							
6	R	--	R	H	X	Underwriters Laboratory (UL) or FM certification (If Applicable)							
7	R	--	R	H	X	Factory test reports, Calibration test certificates for Valves, Manufacture certificate/Conformity certificate for major brought out item(as applicable)							
8	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class for brought item ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
9	RW	--	W	H	X	Final Visual, Dimensional (1pc/type/model/lot), Tagging, Nameplate check (as per ONGC Spec FS 3703), Direction marking on valve, cable entry, Pneumatic process connection, Accessories check etc.							
10	RW	--	W	H	X	Functional check, Operation check , Calibration check(10% per type)							
11	RW	--	W	H	X	Hydro test for body & Seat leak test as per ASMEB16.34 clause 7.1 & ASME/FCI 70.2							
12	RW	--	RW	H	X	Painting & protective coating check(Final DFT) as per ONGC Spec 2005							
13	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
14	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
15	W	W		H	X	Verification of items as per IRN							
16	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/08</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/08</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/08</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: F &amp; G Detectors</b>				<b>FS No.-3500</b>		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	FAT & SAT procedure.							
3	R	--	R	H	X	Material test certificates / Compliance certificates (As applicable).							
4	R	--	R	H	X	Factory test report/Calibration test certificate							
5	R	--	R	H	X	Type test certificate for Hazardous area classification & Test certificate / Conformity certificate for enclosure class (As applicable).							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
6	RW	--	W	H	X	Final Visual, Dimensional, Model no,/ Type verification, Workmanship check, Name plate , Tagging check ,Mounting type check, Cable entry Check, Terminals check,, Qty. check ,Certified Blind Plug , Accessories check etc. (As applicable).							
7	RW	--	RW	H	X	Functional , Operation check , Calibration check (10% per type)							
8	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
9	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
10	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
11	R	R			X	IMIR/GIIR on the basis of IRN							
12	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/09A</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/09A</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/09A</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Coriolis Flow Meter				<b>FS No.-</b> 3208		<b>Inspection Category: B</b> (For Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan & for custody transfer application only- FAT procedure							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Hydro test report (as applicable)							
4	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
5	R	--	R	H	X	NDT records as per company specification. (As applicable).							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate) & Test certificate / Conformity certificate for enclosure class ( As Applicable)							
7	R	--	R	H	X	Type test certificates for RFI, EMC etc.as per company specification.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	RW	--	W	H	X	Final Visual, Dimensional , Tagging / Nameplate check ,Mounting type/Process connection check , Cable entry check , Flow direction check , Accessories check etc.							
9	RW	--	W	H	X	Functional check, Operation check, Calibration check (as applicable)							
	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS. FAT at vendor place							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W		H	X	Verification of items as per IRN							
13	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/09B</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/09B</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/09B</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Coriolis Flow Meter				<b>FS No.-</b> 3208		<b>Inspection Category: C</b> (For other than Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Hydro test (as applicable)							
4	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
5	R	--	R	H	X	NDT records as per company specification. (As applicable).							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate) & Test certificate / Conformity certificate for enclosure class ( As Applicable)							
7	R	--	R	H	X	Type test certificates for RFI, EMC etc.as per company specification.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	--	--	W	H	X	Final Visual, Dimensional , Tagging / Nameplate check ,Mounting type/Process connection check , Cable entry check , Flow direction check , Accessories check etc.							
9	--	--	W	H	X	Functional check, Operation check, Calibration check (as applicable)							
	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
13	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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<b>IRT No.</b>	<b>ODS/INST/IRT/10A</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Ultrasonic Flow Meter				<b>FS No.-</b> 3212		<b>Inspection Category: B</b> (For Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan & for custody transfer application only- FAT procedure							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, and Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
4	R	--	R	H	X	Hydro test (as applicable)							
5	R	--	R	H	X	NDT records (As applicable).							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
7	R	--	R	H	X	Type test certificates for RFI, EMC etc.as per company specification.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	RW	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type/Process connection check, Cable entry check, Flow direction check, Accessories check etc.							
9	RW	--	W	H	X	Functional check, Operation check including self-diagnostics check.							
10	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
11	RW	--	RW	H	X	Wet & dry Calibration check from reputed lab like NEL or equivalent as per company specification.							
12	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS. FAT at Vendor place.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
13	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
14	W	W		H	X	Verification of items as per IRN							
15	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Ultrasonic Flow Meter				<b>FS No.-</b> 3212		<b>Inspection Category: C</b> (For other than Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Painting Procedure, and Calibration Procedure etc. (As applicable).							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
4	R	--	R	H	X	Hydro test (as applicable)							
5	R	--	R	H	X	NDT records (As applicable).							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
7	R	--	R	H	X	Type test certificates for RFI, EMC etc.as per company specification.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	--	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type/Process connection check, Cable entry check, Flow direction check, Accessories check etc.							
9	--	--	W	H	X	Functional check, Operation check including self-diagnostics check.							
10	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
11	--	--	RW	H	X	Wet & dry Calibration check from reputed lab like NEL or equivalent as per company specification.							
12	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
13	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
14	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
15	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/11A</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/11A</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/11A</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Magnetic flow meter				<b>FS No.-</b> 3213		<b>Inspection Category: B</b> (For Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan & for custody transfer application only- FAT procedure							
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
3	R	--	R	H	X	NDT records as per company specification. (As applicable).							
4	R	--	R	H	X	Hydro test (as applicable)							
5	R	--	R	H	X	Type test certificates for the RFI,EMI certification etc. as per company specification (As Applicable)							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	RW	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type/Process connection check, Cable entry check, Flow direction check , Accessories check etc.							
8	RW	--	W	H	X	Functional check, Operation check / Calibration check of meter assembly (as applicable)							
9	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS. FAT at vendor's place							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W		H	X	Verification of items as per IRN							
13	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/11B</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/11B</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/11B</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Magnetic flow meter				<b>FS No.-</b> 3213		<b>Inspection Category: C</b> (For other than Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan.							
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
3	R	--	R	H	X	NDT records as per company specification. (As applicable).							
4	R	--	R	H	X	Hydro test (as applicable)							
5	R	--	R	H	X	Type test certificates for the RFI,EMI certification etc. as per company specification (As Applicable)							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	--	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type/Process connection check, Cable entry check, Flow direction check , Accessories check etc.							
8	--	--	W	H	X	Functional check, Operation check / Calibration check of meter assembly (as applicable)							
9	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
13	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/12A</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/12A</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/12A</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Turbine Flow Meter				<b>FS No.-</b> 3207		<b>Inspection Category: B</b> (For Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan.							
2	R	--	R	H	X	Material test certificates / Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
3	R	--	R	H	X	NDT records as per company specification. (As applicable).							
4	R	--	R	H	X	Hydro/Pressure test (as applicable)							
5	R	--	R	H	X	Type test certificates for the RFI, EMI certification etc. as per company specification (As Applicable)							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	RW	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type, Process connection check, Cable entry check, Flow direction check , Accessories check etc.							
8	RW	--	W	H	X	Functional check, Operation check, Calibration check of meter assembly (as applicable)							
9	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	RW	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
11	RW	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
12	Is	-	R	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
13	W	W		H	X	Verification of items as per IRN							
14	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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<b>IRT No.</b>	<b>ODS/INST/IRT/12B</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Turbine Flow Meter				<b>FS No.-</b> 3207		<b>Inspection Category: C</b> (For other than Custody Meter)							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan.							
2	R	--	R	H	X	Material test certificates / Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
3	R	--	R	H	X	NDT records as per company specification. (As applicable).							
4	R	--	R	H	X	Hydro/Pressure test (as applicable)							
5	R	--	R	H	X	Type test certificates for the RFI, EMI certification etc. as per company specification (As Applicable)							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	--	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type, Process connection check, Cable entry check, Flow direction check , Accessories check etc.							
8	--	--	W	H	X	Functional check, Operation check, Calibration check of meter assembly (as applicable)							
9	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
10	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
11	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
12	--	-	Is	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
13	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
14	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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<b>IRT No.</b>	<b>ODS/INST/IRT/13</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> DP-Cone meter				<b>FS No.:</b> 3214		<b>Inspection Category:</b> C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan.							
2	R	--	R	H	X	Material test certificates / Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
3	R	--	R	H	X	NDT records as per company specification. (As applicable).							
4	R	--	R	H	X	Dye penetration Test for HP & LP Tapping/Socket Welding as ONGC Spec							
5	R	--	R	H	X	Hydro/Pressure test (as applicable)							
6	R	--	R	H	X	Type test certificates for the RFI, EMI certification etc. as per company specification (As Applicable)							
7	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class ( As Applicable)							
8	R	--	RW	H	X	Calibration report from internationally accredited laboratory (like NEL,NIST,CEESI,NMI,TCC,SWRI or equivalent)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
9	--	--	W	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Mounting type, Process connection check, Cable entry check, Flow direction check, Accessories check etc.							
10	--	--	W	H	X	Functional check , Operation check, Calibration check of meter assembly (as applicable)							
11	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
12	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
12	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
13	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
14	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


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IRT No.	ODS/INST/IRT/14												
Rev No	1												
Discipline	Instrumentation												
Item: Orifice Plate Assembly and Restriction Orifice				FS No.-3203 & 3204		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	General & documents- For Review/Approval /Information												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
4	R	--	R	H	X	Factory test reports							
5	R	--	R	H	X	NDT records as per company specification. (As applicable).							
6	R	--	R	H	X	Hydro test (as applicable)							
Inspection & Testing- For Witness/ Random Witness													
7	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model) , Tagging, Nameplate check, Direction Marking check , Accessories check etc.							
8	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005							
9	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
10	--	-	Is	H	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
11	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
12	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							

LEGENDS & NOTES: Explained separately

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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		<table><tr><td>IRT No.</td><td>ODS/INST/IRT/15</td></tr><tr><td>Rev No</td><td>1</td></tr><tr><td>Discipline</td><td>Instrumentation</td></tr></table>		IRT No.	ODS/INST/IRT/15	Rev No	1	Discipline	Instrumentation
IRT No.	ODS/INST/IRT/15												
Rev No	1												
Discipline	Instrumentation												
Item: Electronic Transmitter (PT,DPT,TT,FT & MVT)				FS No.-3403, 3302 & 3202		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3.Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	A	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts ( NACE for sour service)							
3	R	--	R	H	X	NDT records as per company specification (as applicable).							
4	R	--	R	H	X	Surface preparation and Protective coating (Visual & Final DFT check) as per ONGC Spec 2005 (As applicable)							
5	R	--	R	H	X	Factory test reports, Calibration test Certificates							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate ), Test certificate / Conformity certificate for enclosure class, RFI & EMI, SIL2 Certification etc. as per ONGC Spec ( As Applicable)							
Inspection & Testing- For Witness/ Random Witness													
7	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model/lot), Tagging, Nameplate check ,Mounting type, Process / Pneumatic connection check , Cable entry check, Display Check, Accessories check etc.							
8	--	--	RW	H	X	Functional, Operational, Calibration check.							
9	--	--	RW	H	X	Check with "HAND HELD COMMUNICATOR" in case of smart type transmitter (Random witnessed 10%)							
10	--	--	RW	H	X	Over range test, Hydro test((10% Random Witnessed) (as applicable)							
11	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
13	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							

LEGENDS & NOTES: Explained separately

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/16</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/16</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/16</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Level Transmitter (Radar Type / Displacer Type)				<b>FS No.-</b> 3103		<b>Inspection Category: C</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	A	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test procedure, Calibration /Functional Test procedure							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts ( NACE for sour service)							
4	R	--	R	H	X	NDT records (as applicable).							
5	R	--	R	H	X	Surface preparation and Protective coating (Visual & Final DFT check) as per ONGC Spec 2005 (As applicable)							
6	R	--	R	H	X	Factory test reports / Calibration test Certificates							
7	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate ), Test certificate / Conformity certificate for enclosure class, RFI&EMI, SIL2 Certification etc. as per ONGC Spec ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	--	--	RW	H	X	Hydro test(10% Random Witnessed) (as applicable)							
9	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model/lot), Tagging, Nameplate check , Mounting type, Process/Pneumatic connection check , Cable entry check, Display Check, C-C Distance as per data sheet , Accessories check etc.							
10	--	--	RW	H	X	Functional, Operational , Calibration check .(10% Random Witnessed)							
11	--	--	RW	H	X	Check with "HAND HELD COMMUNICATOR" in case of smart type transmitter (Random witnessed 10%)							
12	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
13	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
14	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
15	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/17</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/17</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/17</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Pressure Gauge and Differential Pressure Gauge				<b>FS No.-</b> 3401 & 3400		<b>Inspection Category: C</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval /Information</b>													
1	A	--	R	H	X	Inspection and Test Plan .							
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service)							
3	R	--	R	H	X	NDT records as per company specification (as applicable).							
4	R	--	R	H	X	Test Certificates for Vibration test, Fatigue test & Endurance test etc. as per EN-837							
5	R	--	R	H	X	Factory test reports, Calibration test Certificates							
6	R	--	R	H	X	"Test certificate / Conformity certificate for enclosure class (As applicable).							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	--	--	RW	H	X	Final Visual, Dimensional(1pc/type/model/lot), Tagging, Nameplate check, Dial check, Mounting type / Process connection check, Glycerin check, Leakage check, Accessories check etc.							
8	--	--	RW	H	X	Manifold leak test(as applicable)							
9	--	--	RW	H	X	Functional, Operational, Calibration check							
10	--	--	RW	H	X	Over range test.							
11	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
12	--	-	Is	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
13	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
14	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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IRT No.	ODS/INST/IRT/18														
Rev No	1														
Discipline	Instrumentation														
Item: Temperature Gauge And Thermowell						FS No.-3300		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)														
	2. Inspection by ONGC / Third Party Inspector (TPI)														
	3. Inspection by EPC / EPC's Inspection Agency (IA)														
	4. Inspection by Vendor/ Sub vendor														
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval														
	6. Stages of Inspection														
						General & documents- For Review/Approval /Information									
1	A	--	R	H	X	Inspection and Test Plan									
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service)									
3	R	--	R	H	X	NDT records as per company specification (as applicable).									
4	R	--	R	H	X	Factory test reports, Calibration test Certificates									
5	R	--	R	H	X	"Test certificate / Conformity certificate for enclosure class (As applicable).									
						Inspection & Testing- For Witness/ Random Witness									
6	--	--	RW	H	X	Final Visual, Dimensional(1pc/type/model/lot), Tagging, Nameplate check, Dial check, Mounting type / Process connection check, Glycerin check, Leakage check, Accessories check etc.									
7	--	--	RW	H	X	Functional Operational / Calibration check									
8	--	--	RW	H	X	Hydro test(as applicable)									
9	--	--	RW	H	X	Bore concentricity test for Thermowell (as applicable)									
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.									
						IRN For issue by CA/TPI/Contractor IA									
11	--	-	Is	H	X	Issue & Documentation at Vendor Works									
						IMIR/GIIR at Yard/Offshore									
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report									
13	IS	R	-	-	X	IMIR/GIIR on the basis of IRN									
LEGENDS & NOTES: Explained separately															
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<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Level Gauge</b>				<b>FS No.-3100</b>		<b>Inspection Category: C</b>							
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
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	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service)							
3	R	--	R	H	X	NDT records (As applicable).							
4	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate ) & Test certificate / Conformity certificate for enclosure class for illuminator ( As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
5	--	--	RW	H	X	Hydro test(as applicable)							
6	--	--	W	H	X	Final Visual, Dimensional (1pc/type/model/lot), Tagging, Nameplate check, Mounting type, Process connection check, Accessories check etc.							
7	--	--	W	H	X	Verify model, type no, Visible length							
8	--	--	RW	H	X	Check illuminator operation & Valve operation (If applicable)							
9	--	--	RW	H	X	Painting & protective coating check(Final DFT) as per ONGC Spec 2005							
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
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IRT No.	ODS/INST/IRT/21												
Rev No	1												
Discipline	Instrumentation												
Item: Instrument Tubes and Instrument Fittings & Valves				FS No.-3507		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3.Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Applicable NDT, Hydro Testing and Internal & External coating Procedures							
3	R	--	R	H	X	Material test certificates, Traceability records including heat code and NDT records as per ONGC specification.							
4	R	--	R	H	X	Factory, Internal test reports, Compliance certificates and Type test report as per ONGC Specification (As applicable).							
Inspection & Testing- For Witness/ Random Witness													
5	--	--	W	H	X	Final Surface finish, visual, dimensional, marking check, quantity check, ratings check, heat no. verification etc.							
6	--	--	RW	H	X	PMI Test for Alloy Steel (Random witness 10%)							
7	--	--	RW	H	X	"Hydrostatic test for Instrument valves. (10%/type)							
8	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
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<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Manual Alarm Station / Sounder / Annunciator / Beacon / Strobe Light</b>				<b>FS No.-3500</b>		<b>Inspection Category: BULK</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval /Information</b>													
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Material test certificates, Compliance certificates (As applicable).							
3	R	--	R	H	X	Factory test reports, Calibration test certificates, Compliance Certificates, Manufacturer Reports for major bought out components (As applicable).							
4	R	--	R	H	X	"Type test certificate for Hazardous area classification & Test certificate / Conformity certificate for enclosure class (As applicable).							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
5	--	--	RW	H	X	Final Visual, Dimensional, Tagging, Nameplate check, Display Check, Cable entry check and Accessories check (As applicable).							
6	--	--	RW	H	X	Functional & Operation check (As applicable).							
7	--	--	RW	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
8	--	-	IS	Is	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
9	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
10	IS	R	-	H	X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


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IRT No.	ODS/INST/IRT/23												
Rev No	1												
Discipline	Instrumentation												
Item: Field panel/Junction box				FS No.- 3507		Inspection Category: BULK							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection and Test Plan.							
2	R	--	R	H	X	Material test certificates, Compliance certificates (As applicable).							
3	R	--	R	H	X	Internal Test Report, Test certificate, Compliance certificate, Manufacturer reports for major bought out components (As applicable).							
4	R	--	R	H	X	"Type test certificate for Hazardous area classification & Test certificate / Conformity certificate for enclosure class (As applicable).							
Inspection & Testing- For Witness/ Random Witness													
5	--	--	RW	H	X	Final Visual, Dimensional, Model no, Type verification, Workmanship check, Name plate, Tagging check, Earthing point check, Cable entry, Terminals check ,Quantity check ,Certified Blind Plug ,Paint shade , Accessories check etc. (As applicable).							
6	--	--	RW	H	X	Protective coating (Visual & Final DFT check) as per ONGC Spec 2005							
7	--	--	RW	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
8	--	--	IS	Is	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
9	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
10	IS	R	-	H	X	IMIR/GIIR on the basis of IRN							
LEGENDS & NOTES: Explained separately													


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IRT No.	ODS/INST/IRT/24												
Rev No	1												
Discipline	Instrumentation												
Item: MCT Blocks				FS No.- 3507		Inspection Category: Bulk							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Material test certificates, Compliance certificates (As applicable).							
3	R	--	R	H	X	"Factory Test Reports, Type Test reports, Compliance certificates (As applicable). "							
Inspection & Testing- For Witness/ Random Witness													
4	--	--	RW	H	X	Final Visual, Dimensional, Model no, Type verification, Markings check, Accessories check etc. (As applicable).							
5	--	--	RW	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
6	--	--	IS	Is	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
7	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
8	IS	R	-	H	X	IMIR/GIIR on the basis of IRN							

LEGENDS & NOTES: Explained separately

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IRT No.	ODS/INST/IRT/25												
Rev No	1												
Discipline	Instrumentation												
Item: Manual ESD FSD Station & Valves, Fusible Plugs				FS No.- 3500		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Pressure test Procedure, Melt test procedure							
3	R	--	R	H	X	Material test certificates, Traceability records and NDT records (As applicable).							
4	R	--	R	H	X	In-house test reports ( As applicable )							
Inspection & Testing- For Witness/ Random Witness													
5	--	--	W	H	X	Final Visual, Dimension, Tagging, Nameplate check, Colour coding check, Temperature rating check, Accessories check etc.							
6	--	--	RW	H	X	Verify manual valve operation (Random witness 10%).							
7	--	--	RW	H	X	Pressure testing of ESD/ FSD valves (Random witness 10%).							
8	--	--	RW	H	X	Melt Test for 1 no. Sample Pcs of Fusible Plugs/ Rating.							
9	--	--	RW	H	X	Leak test for fusible plugs (Random witness 10%) ( If applicable )							
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
13	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							

LEGENDS & NOTES: Explained separately


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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/26</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/26</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/26</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: CABLE(Electrical, Instrument, Communication and Earthing)</b>				<b>FS No.- 3508</b>		<b>Inspection Category: C</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval/Information</b>													
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Internal Test Report, Test certificate, Compliance certificate, Manufacturer reports for major bought out components (As applicable).							
3	R	--	R	H	X	Type test as per ONGC Spec, IEC, Relevant standard (As applicable).							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
5	--	--	W	H	X	Final Visual, Dimension, Tagging, Nameplate check, Colour coding check, Temperature rating check, Accessories check etc.							
6	--	--	W	H	X	Check final visual, cable type, lengths, size, sheath colour, cable marking check ( voltage grade, size, cores ), Drum marking check, core configuration, core colours, Outer sheath colour, Rip chord, screening checks, Twisted pair type etc. ( As applicable )							
7	--	--	W	H	X	Verify sealing of both cable ends across drum flanges for mechanical & environmental damages							
8	--	--	RW*	H	X	Check for Individual & Overall screen for signal cable. (* Random Witness: 1 cable per type/lot) {As applicable }							
9	--	--	RW*	H	X	HV, IR check of cable (As applicable).							
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	--	-	Is	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
13	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/27</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/27</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/27</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Sub Sea Umbilical</b>				<b>FS No.- 3510</b>		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Test Procedures - Testing (FAT& SAT), Installation, Laying. As per FS 3510							
3	R	--	W	H	X	Check Completeness of bought out items, Accessories viz, JB, mounting accessories as applicable per specs.							
4	R		R	H	X	Material Test certificates/Shop Test Reports/compliance certificates/manufacture report for major brought out (as applicable)							
5	R		R	H	X	Certificates / conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
6	W	--	W	H	X	Final visual, dimensional, marking check, colour check, accessories check, construction of cable							
7	W	--	W	H	X	Tensile characteristic test , cyclic bending test , test on electrical conductors including water bath, Insulation resistance test, pressure test, armour for supplied lot							
8	W	--	W	H	X	Testing as per API 17E & FS 3510 for supplied lot.							
9	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
10	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
11	W	W	-	H	X	Verification of items as per IRN							
12	R	R	-	-	X	IMIR/GIIR on the basis of IRN							
13	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


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			<b>IRT No.</b>	<b>ODS/INST/IRT/28</b>						
			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item: Senior Orifice Assembly</b>		<b>FS No.-3205</b>		<b>Inspection Category: C</b>						
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)									
	2. Inspection by ONGC / Third Party Inspector (TPI)									
	3. Inspection by EPC / EPC's Inspection Agency (IA)									
	4. Inspection by Vendor/ Sub vendor									
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval									
	6. Stages of Inspection									
	<b>General &amp; documents- For Review/Approval /Information</b>									
	1	A	--	R	H	X	Inspection and Test Plan			
	2	R	--	R	H	X	Hydro test Procedure			
	3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A			
4	R	--	R	H	X	Factory test reports				
5	R	--	R	H	X	NDT records as per company specification. (As applicable).				
6	R	--	R	H	X	Hydro test (as applicable)				
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>										
7	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model) , Tagging, Nameplate check, Direction Marking check , Accessories check etc.				
8	--	--	W	H	X	Check Senior Orifice Assembly & Its accessories for completeness & operability (Smooth Orifice changeover Operation)				
9	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005				
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.				
<b>IRN For issue by CA/TPI/Contractor IA</b>										
11	--	-	Is	H	X	Issue & Documentation at Vendor Works				
<b>IMIR/GIIR at Yard/Offshore</b>										
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report				
13	IS	R	-	-	X	IMIR/GIIR on the basis of IRN				

**LEGENDS & NOTES:** Explained separately


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<table border="1"> <tr> <td><b>Item:</b> Portable Calibrator</td> <td><b>FS No.-</b>3605</td> <td><b>Inspection Category:</b> C</td> </tr> </table>		<b>Item:</b> Portable Calibrator	<b>FS No.-</b> 3605	<b>Inspection Category:</b> C																																																																																																																																							
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Stages of Inspection</td> </tr> <tr> <td colspan="7"> <table border="1"> <tr> <td colspan="7"><b>General &amp; documents- For Review/Approval /Information</b></td> </tr> <tr> <td>1</td> <td>A</td> <td>--</td> <td>R</td> <td>H</td> <td>X</td> <td>Quality Plan</td> </tr> <tr> <td>2</td> <td>R</td> <td>--</td> <td>R</td> <td>H</td> <td>X</td> <td>Internal Test Certificates / Test Reports</td> </tr> <tr> <td>3</td> <td>R</td> <td>--</td> <td>R</td> <td>H</td> <td>X</td> <td>Traceability of calibration records to international standards</td> </tr> <tr> <td colspan="7"><b>Inspection &amp; Testing- For Witness/ Random Witness</b></td> </tr> <tr> <td>4</td> <td>--</td> <td>--</td> <td>RW</td> <td>H</td> <td>X</td> <td>Visual Tag , Model No. Name Plate check, range, accessories etc. as applicable</td> </tr> <tr> <td>5</td> <td>--</td> <td>--</td> <td>RW</td> <td>H</td> <td>X</td> <td>Operational Check</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> <td>W</td> <td>W</td> <td>X</td> <td>Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.</td> </tr> <tr> <td colspan="7"><b>IRN For issue by CA/TPI/Contractor IA</b></td> </tr> <tr> <td>7</td> <td>--</td> <td>-</td> <td>Is</td> <td>H</td> <td>X</td> <td>Issue &amp; Documentation at Vendor Works</td> </tr> <tr> <td colspan="7"><b>IMIR/GIIR at Yard/Offshore</b></td> </tr> <tr> <td>8</td> <td>W</td> <td>W</td> <td>-</td> <td>H</td> <td>X</td> <td>Verification of items as per IRN along with all Inspection Report</td> </tr> <tr> <td>9</td> <td>IS</td> <td>R</td> <td>-</td> <td>-</td> <td>X</td> <td>IMIR/GIIR on the basis of IRN</td> </tr> </table> </td> </tr> </table>					Activity No	1. 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			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item:</b> Electronic Flow Totalizer		<b>FS No.-</b> 3201		<b>Inspection Category: C</b>						
<div> <div>Activity No</div> <div> <div>1. Inspection by ONGC / Certification Agency (CA)</div> <div>2. Inspection by ONGC / Third Party Inspector (TPI)</div> <div>3. Inspection by EPC / EPC's Inspection Agency (IA)</div> <div>4. Inspection by Vendor/ Sub vendor</div> <div>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</div> <div>6. Stages of Inspection</div> </div> </div>										
						<b>General &amp; documents- For Review/Approval /Information</b>				
1	A	--	R	H	X	Inspection Test Plan				
2	R	--	R	H	X	Review of internal test / calibration reports.				
3	R	--	R	H	X	Type test certificates, conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification.				
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>				
4	--	--	W	H	X	Final visual, dimensional ( 1 Pc Per Type/ Model ), nameplate check including process connection, cable entry, blind plugs, accessories check etc.				
5	--	--	RW	H	X	Functional / Calibration check (*Random witness 10%).				
6	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.				
						<b>IRN For issue by CA/TPI/Contractor IA</b>				
7	--	-	Is	H	X	Issue & Documentation at Vendor Works				
						<b>IMIR/GIIR at Yard/Offshore</b>				
8	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report				
9	IS	R	-	-	X	IMIR/GIIR on the basis of IRN				


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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		<table><tr><td>IRT No.</td><td>ODS/INST/IRT/31</td></tr><tr><td>Rev No</td><td>1</td></tr><tr><td>Discipline</td><td>Instrumentation</td></tr></table>		IRT No.	ODS/INST/IRT/31	Rev No	1	Discipline	Instrumentation
IRT No.	ODS/INST/IRT/31												
Rev No	1												
Discipline	Instrumentation												
Item: Pneumatic Pressure Indicating Controller				FS No.-3601		Inspection Category: C							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection Test Plan							
2	R	--	R	H	X	Review of internal test, calibration reports.							
3	R	--	R	H	X	Type test certificates, conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification.							
4	R	--	R	H	X	Manufacturer's test certificates/ Compliance Certificates for major bought out items etc. (As applicable).							
Inspection & Testing- For Witness/ Random Witness													
5	--	--	RW	H	X	Final visual, dimensional (1 Pc Per Type/ Model), nameplate check, process connection, Pneumatic connections, switch operation checks, blind plugs, accessories check etc. (*Random witness 10%).							
6	--	--	RW	H	X	Hydro test {As Applicable} (Random witness 10%).							
7	--	--	RW	H	X	Functional, Calibration check {As applicable} (*Random witness 10%).							
8	--	--	RW	H	X	Over range protection checks. {As applicable } (*Random witness 10%).							
9	--	--	R	H	X	Review of internal test / calibration reports.							
10	--	--	R	H	X	Type test certificates / conformity certificate for specified enclosure class ( If Applicable )							
11	--	--	RW	H	X	Painting / Protective coating -Final DFT-color code (if applicable) as per ONGC spec. 2005 (*Random witness 10%). (As applicable)							
12	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
IRN For issue by CA/TPI/Contractor IA													
13	--	-	Is	H	X	Issue & Documentation at Vendor Works							
IMIR/GIIR at Yard/Offshore													
14	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
15	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							

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			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item:</b> Pneumatic Level Switch		<b>FS No.-</b> 3101		<b>Inspection Category: C</b>						
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)									
	2. Inspection by ONGC / Third Party Inspector (TPI)									
	3. Inspection by EPC / EPC's Inspection Agency (IA)									
	4. Inspection by Vendor/ Sub vendor									
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval									
	6. Stages of Inspection									
<b>General &amp; documents- For Review/Approval /Information</b>										
1	A	--	R	H	X	Inspection Test Plan				
2	R	--	R	H	X	Review of internal test, calibration reports.				
3	R	--	R	H	X	Type test certificates,/ conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification.				
4	R	--	R	H	X	Manufacturer's test certificates, NDT report, Hydro test report, Material Test Certificate (As per spec), Compliance Certificates for major bought out items (As applicable).				
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>										
5	--	--	W	H	X	Final visual, dimensional ( 1 Pc Per Type/ Model ), nameplate check including process connection, Cable entry, blind plugs, accessories check etc.				
6	--	--	RW	H	X	Functional / Calibration check {As applicable} (*Random witness 10%).				
7	--	--	RW	H	X	Insulation resistance check (*Random witness 10%) {As applicable}				
8	--	--	W	H	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.				
<b>IRN For issue by CA/TPI/Contractor IA</b>										
9	--	-	Is	H	X	Issue & Documentation at Vendor Place				
<b>IMIR/GIIR at Yard/Offshore</b>										
11	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report				
12	IS	R	-	-	X	IMIR/GIIR on the basis of IRN				
<b>LEGENDS &amp; NOTES:</b> Explained separately										

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<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Well head Shutdown Panel & Standalone shutdown panel				<b>FS No.-</b> 3501		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
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	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection Test Plan							
2	A	--	R	H	X	Quality Plan, FAT & SAT Procedure as applicable							
3	RW	--	W	H	X	Verify panel components as per BOM / DRWGS							
4	R	--	R	H	X	Manufacturer's test certificates, Compliance Certificates for major bought out items viz, Pump, DPG, PG, Pneumatic Horn, solenoid valve, Switch, JB, cable glands, Tube & tube fittings, Panel etc.							
5	R	--	R	H	X	Material Certificates (Inclusive of its material correlation chart / Index)							
6	R	--	R	H	X	Type test certificates / conformity certificate for specified enclosure class & Hazardous Area Classification for solenoid valve, pressure switch, JB, level switch, cable glands etc. (As Applicable)							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	RW	--	W	H	X	Visual, dimensional, workmanship, tagging / name plate check, cable entries, accessories check.							
8	RW	--	W	H	X	Leak test of all tubing loops. (*Random witness minimum 10%).							
9	RW	--	W	H	X	"FAT (Factory Acceptance Tests) : Complete functional check of panel by simulation of operational logic, verify C&E diagram, visual indications, audible alarm checks, Timer delay in between SSV & SSSV openings, various reset / trip interlocks, operations of Knobs in all WCM as per Test Procedure etc.							
10	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
11	Is	-	R	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
12	W	W	-	H	X	Verification of items as per IRN							
13	R	R	-	-	X	IMIR/GIIR on the basis of IRN							
14	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

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			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item:</b> Pneumatic Pressure Switch		<b>FS No.-</b> 3600		<b>Inspection Category: C</b>						
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)									
	2. Inspection by ONGC / Third Party Inspector (TPI)									
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	1	A	--	R	H	X	Inspection Test Plan			
	2	R	--	R	H	X	Type test certificates, conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification.			
	3	R	--	R	H	X	Manufacturer's test certificates, Material Test Certificate, Compliance Certificates for major bought out items, NACE (MR-01-75) Report (for wetted parts (As applicable).			
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>										
4	--	--	W	H	X	Final visual, dimensional ( 1 Pc Per Type/ Model ), nameplate check including process connection, blind plugs, accessories check, spares, tag, type, cable entry, range etc.				
5	--	--	RW	H	X	Functional, Calibration check, Accuracy, Reading scale / enclosure class, repeatability, over range protection {If applicable} (*Random witness 10%).				
6	--	--	RW	H	X	Insulation resistance check (*Random witness 10%) {As applicable}				
7	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.				
<b>IRN For issue by CA/TPI/Contractor IA</b>										
8	--	-	Is	H	X	Issue & Documentation at Vendor Place				
<b>IMIR/GIIR at Yard/Offshore</b>										
9	RW	W	-	H	X	Verification of items as per IRN along with all Inspection Report				
10	IS	R	-	-	X	IMIR/GIIR on the basis of IRN				

**LEGENDS & NOTES:** Explained separately

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>	<b>INSPECTION REQUIREMENT TABLE</b>	<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/35</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/35</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
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			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item:</b> Rotameter		<b>FS No.-</b> 3206		<b>Inspection Category:</b> C						
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)									
	2. Inspection by ONGC / Third Party Inspector (TPI)									
	3. Inspection by EPC / EPC's Inspection Agency (IA)									
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	<b>General &amp; documents- For Review/Approval /Information</b>									
	1	A	--	R	H	X	Inspection Test Plan			
	2	A	--	R	H	X	Hydro test Procedure, Functional Test Procedure			
	3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A			
	4	R		R	H	X	Factory test reports			
	5	R		R	H	X	NDT records as per company specification. (As applicable).			
	6	R		R	H	X	Hydro test (as applicable)			
	7	R		R	H	X	Type Test Certificate for Hazardous Area Classification & Test certificate, Conformity Certificate for enclosure class (As applicable)			
	<b>Inspection &amp; Testing- For Witness/ Random Witness</b>									
8	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model) , Tagging Nameplate check , Direction Marking check , Accessories check etc.				
9	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005,Rev 4				
10	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.				
<b>IRN For issue by CA/TPI/Contractor IA</b>										
11	--	-	Is	H	X	Issue & Documentation at Vendor Place				
<b>IMIR/GIIR at Yard/Offshore</b>										
12	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report				
12	IS	R	-	-	X	IMIR/GIIR on the basis of IRN				
<b>LEGENDS &amp; NOTES:</b> Explained separately										

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			<b>Rev No</b>	<b>1</b>						
<b>Discipline</b>	<b>Instrumentation</b>									
<b>Item:</b> Electrical Level Switch		<b>FS No.-</b> 3102		<b>Inspection Category: C</b>						
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)									
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		<table><tr><td>IRT No.</td><td>ODS/INST/IRT/39</td></tr><tr><td>Rev No</td><td>1</td></tr><tr><td>Discipline</td><td>Instrumentation</td></tr></table>		IRT No.	ODS/INST/IRT/39	Rev No	1	Discipline	Instrumentation
IRT No.	ODS/INST/IRT/39												
Rev No	1												
Discipline	Instrumentation												
Item: SSIV Actuator and HPU				FS No.-3509 & 3506		Inspection Category: B							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
General & documents- For Review/Approval /Information													
1	A	--	R	H	X	Inspection Test Plan							
2	A	--	R	H	X	Testing Procedure – FAT for individual components as SSIV, Actuator, HPU units & SAT for combined system/Hydro testing/Torque testing etc.							
SSIV Actuator													
3	R	--	R	H	X	Material Test Certificate as per spec 3509 (Inclusive of its material correlation chart )							
4	R	--	R	H	X	MPI or DPI shall be 100% as applicable for all Welds & machine surface of Casting or Forging as per ONGC FS 3509							
5	R	--	R	H	X	Welding and NDE for cast & forged item as per ONGC FS 3509							
6	R	--	R	H	X	Type test certificates, conformity certificate (As applicable) of specified enclosure class							
7	R	--	R	H	X	Manufacturer's test certificates/ Compliance Certificates for major bought out items viz, Quick Connector, Tube & Fittings, Switches, Fastners etc. (As applicable).							
Inspection & Testing- For Witness/ Random Witness													
8	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
SSIV Actuator													
9	RW	--	RW	H	X	Actuator hydrostatic test as per ONGC FS 3509							
10	R	--	RW	H	X	Torque test for actuator as per ONGC FS 3509, Model No, Serial No. and Type							
11	R		W	H	X	Painting / Protective coating as per ONGC spec. FS 3509 clause 4.6							
Hydraulic Power Unit cum Control Panel (HPU)													
12	R	--	W	H	X	Visual, dimensional, workmanship, tagging / name plate check, cable entries, accessories check, Display, ESD/FSD Signal, canopy / IP 55 for pneumatic							
13	RW	--	W	H	X	Verify panel components as per BOM / DRWGS (*Random witness 10%). IP 65 or better							
14	RW	--	W	H	X	Leak test of all tubing loops. (*Random witness 10%).							
IRN For issue by CA/TPI/Contractor IA													
15	Is	-	R	H	X	Issue & Documentation at Vendor Place							
IMIR/GIIR at Yard/Offshore													
16	RW	W	-	H	X	Verification of items as per IRN							
17	R	R	-	-	X	IMIR/GIIR on the basis of IRN							
18	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
LEGENDS & NOTES: Explained separately													

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/40</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/40</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/40</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: PLC</b>				<b>FS No.-C101</b>		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
	1	A	--	R	H	X	Inspection and Test Plan						
	2	A	--	R	H	X	FAT & SAT Procedure.						
	3	R	--	R	H	X	Bill of material including Software / Hardware completeness.						
4	R	--	R	H	X	Internal test reports of vendor's QA/QC and Pre FAT signed by Vendor QAD. Certificate from vendor QAD for 30 day burn in period..							
5	R	--	R	H	X	Test certificates , Compliance Certificates , Manufacturer Reports							
6	R	--	R	H	X	Certificate for specified area classification , certificate for conformal coating , certificate for Enclosure class etc.							
7	R	--	R	H	X	Type test certificates for SIL as per company specification. (As Applicable)							
8	R	--	R	H	X	Type test certificates for RFI & EMC etc. as per FS.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
9	W	--	W	H	X	Final Visual, Dimensional, Cable entry checks, Tagging , Nameplate check, earthing system, paint shade, Check for Consoles, Spare capacity verification, Accessories check.							
10	W	--	W	H	X	Bill of material verification including programming, Software, Hardware completeness.							
11	W	--	W	H	X	Heat soak test at vendor's works							
						"FAT (Factory Acceptance Tests) : Complete functional check by simulation of operational logic, Logic scheme check as per safe chart/causes & effect diagram by simulation of various I/O's, interlock & shutdown logic, check of visual, audible alarms							
						Redundancy check, system diagnostic, CPU failure, CPU & communication loading, power supply failure, check for Console display, keyboard & printer operation, On-line card changeover check, SOE test, interface with Third party devices, ( As applicable).							
						System response, Scan time check, System configuration check, power supply variation check, Loop checking (100%) etc.							
						Trends & Reports, MIS checks etc.							
						Noise level measurement as per company specification.							
System I/O map display and Graphics Check ( As applicable)													
12	RW	--	RW	H	X	Painting / Protective coating -Final DFT & color code (if applicable) as per ONGC Spec. 2005.							
13	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
12	Is	-	R	H	X	Issue & Documentation at Vendor Works							
<b>IMIR/GIIR at Yard/Offshore</b>													
13	W	W		H	X	Verification of items as per IRN							
14	R	R			X	IMIR/GIIR on the basis of IRN							
15	W	W		H	X	SAT/Performance Test in field (offshore platform) by the vendor.							
<b>LEGENDS &amp; NOTES:</b> Explained separately													


Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/41</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/41</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/41</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item:</b> Water Cut Meter				<b>FS No.-</b>		<b>Inspection Category: C</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
	<b>General &amp; documents- For Review/Approval /Information</b>												
1	A	--	R	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Hydro test Procedure, Functional test procedure(as applicable)							
3	R	--	R	H	X	Material test certificates, Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
4	R	--	R	H	X	NDT records (As applicable).							
5	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate / Conformity certificate )& Test certificate / Conformity certificate for enclosure class,( As Applicable)							
6	R	--	R	H	X	Factory test reports, Calibration test certificates /Manufacture certificate/Conformity certificate for major bought out item.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
7	--	--	W	H	X	Hydro test/Leak test (as applicable)							
8	--	--	W	H	X	Final Visual, Dimensional(1pc/type/model) , Tagging, Nameplate check, Mounting type/Process/Process connection check , Display check ,Cable entry check ,Flow direction check ,Flange finish check, Accessories check etc.							
9	--	--	W	H	X	Functional check of meter assembly (Including input signals, outputs, display check etc.) { As Applicable }							
10	--	--	RW	H	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005,Rev 2							
11	--	--	W	H	X	Software package version & license verification (As applicable) (*Random witness 10%).							
12	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
13	--	-	Is	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
14	W	W		H	X	Verification of items as per IRN along with all Inspection Report							
15	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
ODS/SOF/004A	ODS/SOP/023	02	00	04.03.2016

		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/42</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/42</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/42</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Wet Gas Meter with Flow Computer</b>				<b>FS No.-3215</b>		<b>Inspection Category: B</b>							
Activity No	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval/Information</b>													
1	A	--	A	H	X	Inspection and Test Plan							
2	A	--	R	H	X	Functional test procedure (as applicable), Painting Procedure, Hydro test Procedure, Calibration Procedure, FAT Procedure.							
3	R	--	R	H	X	Engineering Document: Check availability of approved Design Drawing, Data Sheets, Calculations, Clarifications, Applicable Standards/ Specifications. Vendor catalogues and any other relevant documents							
4	R	--	R	H	X	Material test certificates / Compliance certificates for wetted parts (NACE for sour service) as per ONGC Spec 2004A							
5	R	--	R	H	X	NDT records (As applicable).							
6	R	--	R	H	X	Type test certificate for Hazardous area classification( Test certificate, / Conformity certificate )& Test certificate / Conformity certificate for enclosure class, IP Certificate , Safe Exposure Limit Certificate, Inspection Report ( As Applicable)							
7	R	--	R	H	X	Factory test reports, Calibration test certificates /Manufacture certificate/Conformity certificate for major bought out item.							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
8	RW	--	W	H	X	Hydro test/Leak test (as applicable)							
9	R	--	R	R	X	Assembly of all component, i.e. Pressure Transmitter, Temperature Transmitter, Differential Pressure Transmitter, Instrumentation related piping & tubing, Gamma Ray Sources & Detector , Flow Computer JB's wiring & Termination, earthing etc.							
10	W	--	W	R	X	FAT & Final Calibration: Verification of power supply check, serial communication Check, Interference with Flow Computer, Battery backup test as applicable, I/o Check, Display check, Diagnosis check, data logging check, alarm check, communication check. Factory calibration of wet gas flow meter with flow computer as per specified range and verification of accuracy							
11	W		W	R	X	Final Visual, Dimensional(1pc/type/model) , Tagging, Nameplate check , Mounting type/Process/Process connection check , Display check ,Cable entry check ,Flow direction check ,Flange finish check, Accessories check etc.							
12	RW	--	W	R	X	Functional check of meter assembly (Including input signals, outputs, display check etc. ) { As Applicable }							
13	RW	--	W	R	X	Painting & protective coating check (Final DFT) as per ONGC Spec 2005,Rev 2							
14	RW	--	W	R	X	Software package version & license verification (As applicable) (*Random witness 10%).							
15	W	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
17	Is	-	R	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
18	W	W		H	X	Verification of items as per IRN							
19	IS	R			X	IMIR/GIIR on the basis of IRN							
<b>LEGENDS &amp; NOTES:</b> Explained separately													

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
ODS/SOF/004A	ODS/SOP/023	02	00	04.03.2016

		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>		<table border="1"> <tr> <td><b>IRT No.</b></td> <td><b>ODS/INST/IRT/43</b></td> </tr> <tr> <td><b>Rev No</b></td> <td><b>1</b></td> </tr> <tr> <td><b>Discipline</b></td> <td><b>Instrumentation</b></td> </tr> </table>		<b>IRT No.</b>	<b>ODS/INST/IRT/43</b>	<b>Rev No</b>	<b>1</b>	<b>Discipline</b>	<b>Instrumentation</b>
<b>IRT No.</b>	<b>ODS/INST/IRT/43</b>												
<b>Rev No</b>	<b>1</b>												
<b>Discipline</b>	<b>Instrumentation</b>												
<b>Item: Flow Switch</b>				<b>FS No.-3200</b>		<b>Inspection Category: C</b>							
<b>Activity No</b>	1. Inspection by ONGC / Certification Agency (CA)												
	2. Inspection by ONGC / Third Party Inspector (TPI)												
	3. Inspection by EPC / EPC's Inspection Agency (IA)												
	4. Inspection by Vendor/ Sub vendor												
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval												
	6. Stages of Inspection												
<b>General &amp; documents- For Review/Approval /Information</b>													
1	A	--	R	H	X	Inspection and Test Plan							
2	R	--	R	H	X	Type test certificates, conformity certificate (As applicable) for specified enclosure class & Hazardous Area Classification.							
3	R	--	R	H	X	Manufacturer's test certificates, NDT report, Hydro test report, Material Test Certificate (As per spec), Compliance Certificates for major bought out items (As applicable).							
<b>Inspection &amp; Testing- For Witness/ Random Witness</b>													
4	--	--	W	H	X	Final visual, dimensional ( 1 Pc Per Type/ Model ), nameplate check including process connection, Cable entry, blind plugs, accessories check etc.							
5	--	--	RW	H	X	Functional, Calibration check { As applicable } (Random witness 10%).							
6	--	--	RW	H	X	Insulation resistance check (*Random witness 10%) {As applicable}							
7	--	--	W	W	X	Undertake any other Tests as stated in the relevant FS of the Item and Confirm Compliance of the Item under Inspection to ONGCs FS.							
<b>IRN For issue by CA/TPI/Contractor IA</b>													
8	-	-	Is	H	X	Issue & Documentation at Vendor Place							
<b>IMIR/GIIR at Yard/Offshore</b>													
9	W	W	-	H	X	Verification of items as per IRN along with all Inspection Report							
10	IS	R	-	-	X	IMIR/GIIR on the basis of IRN							

**LEGENDS & NOTES:** Explained separately

Format No	Ref. Proc. No	Issue No	Rev No	Rev. Date
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**Offshore Design Section  
Engineering Services  
ISO – 9001:2008**


**LIST OF  
IRTs ( INSPECTION  
REQUIREMENT TABLE) &  
APPROVAL**

<b>Date</b>	<b>18.11.2016</b>
<b>Discipline</b>	<b>STRUCTURE</b>
<b>Revision</b>	<b>1</b>
<b>Page:</b>	<b>1 OF 1</b>

Sr. no.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
1	Steel material plate	ODS/STR/IRT/01	Bulk	01	18.11.2016
2	Steel material pipe	ODS/STR/IRT/02	Bulk	01	18.11.2016
3	Steel material - rolled section	ODS/STR/IRT/03	Bulk	01	18.11.2016
4	Aluminum Heli deck	ODS/STR/IRT/04	C	01	18.11.2016
5	Electro forged grating & treads from cellar deck & above (CS)	ODS/STR/IRT/05	Bulk	01	18.11.2016
6	Electro forged grating & treads below cellar deck (SS)	ODS/STR/IRT/06	Bulk	01	18.11.2016
7	CS Handrail from cellar Deck & above	ODS/STR/IRT/07	Bulk	01	18.11.2016
8	Stainless Steel Handrail below cellar Deck	ODS/STR/IRT/08	Bulk	01	18.11.2016
10	Rubber product - 1.Shock cell & Shear fender, 2. Rub-strips & 3. Rotating bumper ring	ODS/STR/IRT/09	B	01	18.11.2016
9	Rubber product - 1. Grout seal, 2. Diaphragm closure	ODS/STR/IRT/09A	C	01	18.11.2016
11	Architectural material (spec. 6011) - 14 numbers	ODS/STR/IRT/10	C	01	18.11.2016
12	Marine growth preventer (MGP)	ODS/STR/IRT/11	Bulk	01	18.11.2016
13	Marine Paints (Protective coating) for offshore structure	ODS/STR/IRT/12	Bulk	01	18.11.2016
14	Maintenance Marine Paint (Protective Coating)	ODS/STR/IRT/12A	Bulk	01	18.11.2016


<b>Prepared / Revised By</b>	<b>Reviewed By</b>	<b>Approved By</b>
G.Jana/M.R. Shete	M.R. Shete	R.K..Jain


FORMAT No. ODS/SOF/047A	Ref. PROCEDURE No. ODS/SOP/023	ISSUE No. 02	REV. No. 00	REV. DATE: 08.03.2016
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<div>ओएनजीसी</div> <div></div> <div>ONGC</div>		Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE		IRT No.		ODS/STR/IRT/01		
						Rev. No.		1		
						Discipline		STRUCTURE		
ITEM : STEEL MATERIAL - PLATE						INSPECTION CATEGORY :BULK				
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)									
	2. Inspection by ONGC / Third Party Inspection(TPI)									
	3.Inspection by EPC / EPC's Inspection Agency (IA)									
	4. Inspection by Vendor/ Sub Vendor (MILL)									
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval									
	6.Stage of Inspection Involved									
	General & documents- For Review/Approval /Information									
	1	A	-	-	H	X	Inspection & Test Plan.			
	2	R	-	-	R	X	Mill Test Certificate & Steel Material Manufacturing Process shall comply to Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1 of ONGC Spec 6001F.			
	Inspection & Testing- For Witness/ Random Witness									
3	-	-	RW one sample per Heat/cast	W	-	Plate mateial identification with respect to Mill test Certificate, marking on plate in compliance to ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.				
IRN For issue by CA/TPI/Contractor IA/Vender QA										
4	-	-	Is	H	X	Issue & Documentation				
IMIR/GIIR at Yard										
5	W	W	-	H	X	Verification of items as per IRN at Yard: Plate mateial identification at Fabrication Yard with respect to Mill test Certificate, marking on plate in compliance to ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.				
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN				
LEGENDS & NOTES : Explained seperately										


FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
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<div>ओएनजीसी</div> <div></div> <div>ONGC</div>	Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE				IRT No.	ODS/STR/IRT/02
							Rev. No.	1
							Discipline	STRUCTURE
ITEM : STEEL MATERIAL - PIPE						INSPECTION CATEGORY :BULK		
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection(TPI)							
	3.Inspection by EPC / EPC's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor (MILL)							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6.Stage of Inspection Involved							
	General & documents- For Review/Approval /Information							
	1	A	-	-	H	X	Inspection & Test Plan.	
	2	R	-	-	R	X	PQR, WPS,NDT Reports, Inspection reports, Mill Test Certificate, Steel Material Manufacturing Process shall comply to Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1 & sub clauses of ONGC Spec 6001F.	
							Pipe Rolling (as per API 2B or API 5L) in API Lisenced Mill & Inspection & Testing- For Witness/ Random Witness	
3	-	-	RW one sample per Heat/Cast	W	H	Inspection of Steel Plate Material at Pipe rolling Mill with respect to Mill test Certificate and acceptance of material		
4	-	-	-	W	H	Rolling of Plate for manufacturing single seam pipe and welding		
5	-	-	-	W	H	Welding shall be carried out as per ONGC Spec 2009 with Inspection duly witness by Mill appointed CA / TPI.		
6	-	-	RW	W	H	Dimention control Inspection as per ONGC Spec 6001F & Respective Code duly witness by Mill appointed CA / TPI.		
7	-	-	-	W	H	Inspection of Steel Pipe with respect to marking on Pipe with Rolling Mill Inspection Report, Test Results and Steel Plate Material Mill Test Certificate, Dimention check in compliance to ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.		
						IRN For issue by CA/TPI/Contractor IA/Vender QA		
8	-	-	Is	H	X	Issue & Documentation		
						IMIR/GIIR at Yard		
9	W	W	-	H	X	Verification of items as per IRN at Yard: Inspection of Steel Pipe with respect to marking on Pipe with Rolling Mill Inspection Report, Test Results and Steel Plate Material Mill Test Certificate, Dimention check in compliance to ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.		
10	Is	R	-	H	X	Issue & Documentation on the basis of IRN		
LEGENDS & NOTES : Explained seperately								
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.		
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						REV. DATE:		
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 <div>ओइलजीसी ONGC</div>	Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/STR/IRT/03
						Rev. No.	1
						Discipline	STRUCTURE
ITEM : STEEL MATERIAL - ROLLED SECTION						INSPECTION CATEGORY :BULK	
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3.Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (MILL)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6.Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
	1	A	-	-	H	X	Inspection & Test Plan.
	2	R	-	-	H	X	Steel Material Manufacturing Process shall comply to ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1. MILL TEST CERTIFICATE shall report with all required Test results as indicated under relevant Sub Clauses under Clause No. 1.1.
	Inspection & Testing- For Witness/ Random Witness						
3	-	-	RW one sample per heat/cast	W	H	Inspection of Steel Rolled Section Material (Marking provided & colour code) at Fabrication Yard with respect to Mill test Certificate, dimension check shall be carried out as per ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.	
IRN For issue by CA/TPI/Contractor IA/Vender QA							
4	-	-	Is	H	X	Issue & Documentation	
IMIR/GIIR at Yard							
5	W	W	-	H	X	Verification of items as per IRN at Yard: Inspection of Steel Rolled Section Material (Marking provided & colour code) at Fabrication Yard with respect to Mill test Certificate, dimension check shall be carried out as per ONGC Spec 6001F. Clause No. 1.1 & all relevant sub Clauses under Clause no. 1.1.	
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN	
LEGENDS & NOTES : Expalined seperately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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 <div>ओएनजीसी Offshore Design Section Engineering Services ISO – 9001:2008</div>		<div>INSPECTION REQUIREMENT TABLE</div>				<div>IRT No.</div> <div>Rev. No.</div> <div>Discipline</div>	<div>ODS/STR/IRT/04</div> <div>1</div> <div>STRUCTURE</div>
ITEM : Alluminium Helideck						INSPECTION CATEGORY : C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3.Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (MILL)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6.Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
	1	A	-		H	X	Inspection & Test Plan.
	2	R	-	-	H	X	Structural Design Report of Aluminum Helideck,Helicopter landing net, Alluminium Material MILL TEST CERTIFICATE, NDT, welding Inspection reports shall be provided incompliance to ONGC Spec 6001F Clause No. 1.2.0 & all relevant sub Clauses under Clause no. 1.2.0 with Design certification.
							Inspection & Testing- For Witness/ Random Witness
3	-	-	W at yard	W	H	Inspection of HeliDeck along with Alluminium Material Mill Test Certificate, Helicopter landing net, Design Certification and all Welding & Dimension control Inspection Report. Refer Clause No. 1.2.0 & Sub clauses and Approved PS.	
						IRN For issue by CA/TPI/Contractor IA/Vender QA	
4	-	-	Is	H	X	Issue & Documentation	
						IMIR/GIIR at Yard	
5	W	W	-	H	X	Verification of items as per IRN at Yard: Inspection of HeliDeck at Fabrication Yard along with Alluminium Material Mill Test Certificate, Design Certification and all Welding & Dimension control Inspection Report. Refer Clause No. 1.2.0 & Sub clauses and Approved PS.	
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN	
LEGENDS & NOTES : Expalined seperately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services ISO – 9001:2008		<b>INSPECTION REQUIREMENT TABLE</b>			IRT No.	ODS/STR/IRT/05
						Rev. No.	1
						Discipline	STRUCTURE
ITEM : ELECTRO FORGED GRATING & TREAD FROM CELLAR DECK & ABOVE (CS)						INSPECTION CATEGORY : BULK	
A c t i v i t y	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (MILL)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
	1	A	-	W	H	X	Inspection & Test Plan & SAMPLE approval
	2	R	-	R	H	X	Sample report & Procedure confirming to Grating manufactured by Electro-forged weld process. Steel sections (Mill Test Certificate) shall comply to ONGC clause no. 1.3.2.1 of Spec 6001F.
	3	R	-	R	H	X	Test Report for Galvanization of Grating as per spec 2005.
4	R	-	R	H	X	Coating the galvanized surface with coating system no. 5 of spec 2005.	
Inspection & Testing- For Witness/ Random Witness							
5	-	-	RW	H	X	Inspection of Electro forged Grating shall be carried out as per Clause no. 1.3.2.1 & sub clauses of Spec 6001F and Spec 2005.	
IRN For issue by CA/TPI/Contractor IA							
6	-	-	Is	H	X	Issue & Documentation at Vendor Place (MILL)	
IMIR/GIIR at Yard							
7	Rw	Rw		H	X	Verification of items as per IRN at Yard: Inspection of Electro forged Grating shall be carried out as per Clause no. 1.3.2.1 & sub clauses of Spec 6001F and Spec 2005.	
8	Is	R		H	X	Issue & Documentation on the basis of IRN	
<b>LEGENDS &amp; NOTES : Expalined seperatetely</b>							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	
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						REV. DATE: 08.03.2016	


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						Rev. No.		1	
						Discipline		STRUCTURE	
ITEM : ELECTRO FORGED GRATING & TREADS BELOW CELLAR DECK (SS)							INSPECTION CATEGORY :BULK		
A c t i v i t y	1. Inspection by ONGC / Certification Agency.(CA)								
	2. Inspection by ONGC / Third Party Inspection(TPI)								
	3.Inspection by EPC / EPC's Inspection Agency (IA)								
	4. Inspection by Vendor/ Sub Vendor (MILL)								
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval								
	6.Stage of Inspection Involved								
	General & documents- For Review/Approval /Information								
	1	A	-	W	H	X	Inspection & Test Plan & SAMPLE approval		
	2	R	-		H	X	Sample report & Procedure confirming to Grating manufactured by Electro-forged weld process. Steel sections (Mill Test Certificate) shall comply to ONGC clause no. 1.3.2.2 of Spec 6001F.		
	Inspection & Testing- For Witness/ Random Witness								
3	-	-	RW	W	H	Inspection of Electro forged Grating shall be carried out as per Clause no. 1.3.2.2 & sub clauses of Spec 6001F and Spec 2005.			
IRN For issue by CA/TPI/Contractor IA/Vender's QA									
4	-	-	Is	H	X	Issue & Documentation at Vendor Place (MILL)			
IMIR/GIIR at Yard									
5	Rw	Rw	-	H	X	Verification of items as per IRN at Yard: Inspection of Electro forged Grating shall be carried out as per Clause no. 1.3.2.2 & sub clauses of Spec 6001F and Spec 2005.			
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN			
LEGENDS & NOTES : Expalined seperatetely									
FORMAT No.		Ref. PROCEDURE No.			ISSUE No.		REV. No.		REV. DATE:
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	Offshore Design Section Engineering Services ISO – 9001:2008	<b>INSPECTION REQUIREMENT TABLE</b>		IRT No.	ODS/STR/IRT/07		
				Rev. No.	1		
				Discipline	STRUCTURE		
ITEM : Carbon steel Handrail from cellar Deck & above				INSPECTION CATEGORY : BULK			
A c t i v i t y	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (MILL)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
	1	A	-	W	H	X	Inspection & Test Plan & Sample approval.
	2	R	-	R	H	X	Structural Design Report of C S Material MILL TEST CERTIFICATE, NDT, welding Inspection reports shall be provided in compliance to Clause no. 1.3.3 of ONGC Spec 6001F.
	Inspection & Testing- For Witness/ Random Witness						
3	-	-	RW	H	X	Inspection of Handrail along with C S material Mill Test Certificate, Design Certification and all Welding & Dimension control Inspection Report. Refer Clause No. 1.3.3 of Spec. 6001F and Approved PS.	
IRN For issue by CA/TPI/Contractor IA							
4	-	-	Is	H	X	Issue & Documentation at Vendor Place (HANDRAIL MANUFACTURING PLACE)	
IMIR/GIIR at Yard							
5	Rw	Rw	-	H	X	Verification of items as per IRN at Yard: Inspection of Handrail at Fabrication Yard along with C S Material Mill Test Certificate, Design Certification and all Welding & Dimension control Inspection Report. Refer Clause No. 1.3.3 of Spec. 6001F and Approved PS.	
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN	
LEGENDS & NOTES : Explained seperately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	
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	Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE		IRT No.		ODS/STR/IRT/08	
					Rev. No.		1	
					Discipline		STRUCTURE	
ITEM : Stainless Steel Handrail below cellar Deck					INSPECTION CATEGORY : BULK			
Activity Visit	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection(TPI)							
	3. Inspection by EPC / EPC's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor (MILL)							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
	General & documents- For Review/Approval /Information							
1	A	-	W	H	X	Inspection & Test Plan & Sample Approval.		
2	R	-	R	H	X	Structural Design Report of Stainless Steel Handrail, Material Mill Test Certificate, Sample report & Procedure confirming to Grating manufactured by Electro-forged weld process in compliance to Clause no. 1.3.3 of ONGC Spec 6001F.		
						Inspection & Testing- For Witness/ Random Witness		
3	-	-	W	H	X	Inspection of Handrail along with Design Report, Stainless Steel Material Mill Test Certificate and all Welding & Dimension control Inspection Report. Refer Clause No. 1.3.3 of Spec. 6001F.		
						IRN For issue by CA/TPI/Contractor IA		
4	-	-	Is	H	X	Issue & Documentation at Vendor Place (HANDRAIL MANUFACTURING PLACE)		
						IMIR/GIIR at Yard		
5	Rw	Rw	-	H	X	Verification of items as per IRN at Yard: Inspection of Handrail at Fabrication Yard along with Design Report, Stainless Steel Material Mill Test Certificate and all Welding & Dimension control Inspection Report. Refer Clause No. 1.3.3 of Spec. 6001F.		
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN		
LEGENDS & NOTES : Explained seperatetely								
FORMAT No.			Ref. PROCEDURE No.			ISSUE No.		REV. No.
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								08.03.2016

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						Rev. No.		1			
						Discipline		STRUCTURE			
ITEM : RUBBER PRODUCT - 1.Shock Cell & Shear Fender, 2. Rub-Strips & 3. Rotating Bumper Ring						INSPECTION CATEGORY : B					
Activity Visit	1. Inspection by ONGC / Certification Agency.(CA)										
	2. Inspection by ONGC / Third Party Inspection(TPI)										
	3.Inspection by EPC / EPC's Inspection Agency (IA)										
	4. Inspection by Vendor/ Sub Vendor (MILL)										
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval										
	6.Stage of Inspection Involved										
	General & documents- For Review/Approval /Information										
	1	A	-	R	H	X	Inspection & Test Plan.				
	2	R	-	R	H	X	Rubber product Manufacturing Procedures shall comply to ASTM D2000 and ONGC Spec 6001F Clause No. 1.5.0 & all relevant sub Clauses. Tubulars for shock cell shall be as per API 2B/API 5L				
	Inspection & Testing- For Witness/ Random Witness										
3	W		W	H	X	Inspection of Rubber product shall comply to Clause no. 1.5.0 & sub clauses of spec, 6001F and as per recommendation of ASTM D2000. Adhesion test of neoprene with tubulars of shock cell.					
IRN For issue by CA/TPI/Contractor IA											
4	Is	-	R	H	X	Issue & Documentation at Vendor Place (RUBBER PRODUCT MANUFACTURING PLACE)					
IMIR/GIIR at Yard											
5	W	W	-	H	X	Verification of items as per IRN at Yard: Inspection of Rubber product shall be carried out with rubber product Test Certificate complying to Clause no. 1.5.0 & sub clauses of spec, 6001F and as per recommendation of ASTM D2000.					
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN					
LEGENDS & NOTES : Explained seperately											
FORMAT No. ODS/SOF/004A			Ref. PROCEDURE No. ODS/SOP/023			ISSUE No. 02		REV. No. 00		REV. DATE: 08.03.2016	


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						Rev. No.		1	
						Discipline		STRUCTURE	
ITEM : RUBBER PRODUCT - 1. Grout Seal, 2. Diaphragm Closure						INSPECTION CATEGORY : C			
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)								
	2. Inspection by ONGC / Third Party Inspection(TPI)								
	3.Inspection by EPC / EPC's Inspection Agency (IA)								
	4. Inspection by Vendor/ Sub Vendor (MILL)								
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval								
	6.Stage of Inspection Involved								
	General & documents- For Review/Approval /Information								
1	A	-	R	H	X	Inspection & Test Plan.			
2	R	-	R	H	X	Rubber product Manufacturing Procedures shall comply to ASTM D2000 and ONGC Spec 6001F Clause No. 1.5.0 & all relevant sub Clauses.			
						Inspection & Testing- For Witness/ Random Witness			
3	-		W	H	X	Inspection of Rubber product shall comply to Clause no. 1.5.0 & sub clauses of spec, 6001F and as per recommendation of ASTM D2000.			
						IRN For issue by CA/TPI/Contractor IA			
4	-	-	Is	H	X	Issue & Documentation at Vendor Place (RUBBER PRODUCT MANUFACTURING PLACE)			
						IMIR/GIIR at Yard			
5	W	W	-	H	X	Verification of items as per IRN at Yard: Inspection of Rubber product shall be carried out with rubber product Test Certificate complying to Clause no. 1.5.0 & sub clauses of spec, 6001F and as per recommendation of ASTM D2000.			
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN			
LEGENDS & NOTES : Expalined seperately									
FORMAT No. ODS/SOF/004A		Ref. PROCEDURE No. ODS/SOP/023		ISSUE No. 02		REV. No. 00		REV. DATE: 08.03.2016	

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						Rev. No.	1
						Discipline	STRUCTURE
ITEM : ARCHITECTURAL MATERIAL (SPEC. 6011) - 14 Numbers as per List below						INSPECTION CATEGORY : C	
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
1	A	RW	W	H	X	Inspection & Test Plan. Verification of sample of material in the yard as per approved PS.	
2	R	-	R	H	X	Manufacturing Procedures- Architectural Material Manufacturing shall comply to the Specification 6011 and Architectural Design Criteria Sec. 3.10. With Certification of Fire rating of respective Architectural Item.	
Inspection & Testing- For Witness/ Random Witness							
3	-	-	RW	H	H	Inspection of Archictural Items at shall be carried out along with ManufactureTest Certificate, Certificate of Fire rating (as applicable) and all Welding & Dimension control Inspection Report. Refer Spec 6011, Architectural Design Criteria Sec 3.10 and Approved PS.	
IRN For issue by CA/TPI/Contractor IA							
4	-	-	Is	H	X	Issue & Documentation at Vendor Place	
IMIR/GIIR at Yard							
5	W	W	-	H	X	Verification of items as per IRN & Reports Inspection of Archictural Items at Fabrication Yard shall be carried out along with ManufactureTest Certificate, Certificate of Fire rating (as applicable) and all Welding & Dimension control Inspection Report. Refer Spec 6011, Architectural Design Criteria Sec 3.10 and Approved PS.	
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN	
LIST OF ARCHITECTURAL MATERIAL							
SI No	ITEM DESCRIPTION			SI No.	ITEM DESCRIPTION		
1	External Fire Proofing Wall H Rated			7	Ceramic Tiles		
2	External Fire Proofing Wall A Rated			8	Raised Access (False) Floor System		
3	Internal Fire Wall A Rated & B Rated			9	A - 60 Fire Rated Door		
4	Pe-Fabricated Toilet System			10	B-15 Fire Rated Door		
5	B-15 Suspended ceiling			11	A-60 Fire Rated Window		
6	Vinyl Sheets Flooring			12	A-0 Fire Rated Door		
LEGENDS & NOTES : Explained seperately							
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	Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE			IRT No.		ODS/STR/IRT/11
						Rev. No.		1
						Discipline		STRUCTURE
ITEM : Marine Growth Preventor						INSPECTION CATEGORY : BULK		
A c t i v i t y	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection(TPI)							
	3. Inspection by EPC / EPC's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor (MILL)							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
	General & documents- For Review/Approval /Information							
	1	A	-	R	H	X	Inspection & Test Plan.	
	2	R	-	R	H	X	Manufacturing Procedures as per ONGC Spec 6001F	
	Inspection & Testing- For Witness/ Random Witness							
3	-	-	W	H	X	Inspection & testing as per recommendation of ASTM D2000 & as per FS 6001F.		
IRN For issue by CA/TPI/Contractor IA								
4	-	-	Is	H	X	Issue & Documentation at Vendor Place (PRODUCT MANUFACTURING PLACE)		
IMIR/GIIR at Yard								
5	W	W	-	H	X	Verification of items as per IRN at Yard:		
6	Is	R	-	H	X	Issue & Documentation on the basis of IRN		
LEGENDS & NOTES : Explained seperatetely								
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.		REV. DATE:
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	Offshore Design Section Engineering Services ISO – 9001:2008		INSPECTION REQUIREMENT TABLE		IRT No.		ODS/STR/IRT/12
					Rev. No.		1
					Discipline		STRUCTURE
ITEM : MARINE PAINT (PROTECTIVE COATING)						INSPECTION CATEGORY :BULK	
A c t i v i t	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection(TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (Paint Manufacturer's Inspector)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
General & documents- For Review/Approval /Information							
1	A	W at fabrication yard	W at fabrication yard	H	X	Inspection & Test Plan.Approval sample Coating panels	
2	A		A	A	X	Paint application & Inspection Procedure: Contractor shall prepare Painting / Coating application & Inspection Procedure based on Spec 2005 and submit Company Approval.	
Inspection & testing							
3				W	-	Inspection & testing shall be carried out based on Spec 2005	
4				Rw	-	Inspection of salt content test	
5				Rw	-	Inspection of wet coating thickness	
6				Rw	-	Inspection of final coating thickness	
7				Rw	-	Inspection of Coating holiday Test	
IRN For issue by CA/TPI/Contractor IA/Vender's QA							
8	-	-	-	Is	X	Issue & Documentation at Vendor Place (MILL)	
IMIR/GIIR at Yard							
9	Rw	Rw	-	H	X	Verification of items as per IRN at Yard, batch no. Expiry , condition of packing , storage condition etc.	
10	Is	R	-	H	X	Issue of IMIR/GIIR & Documentation on the basis of IRN	
LEGENDS & NOTES : Expalined seperatetely							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	
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						Rev. No.	2
						Discipline	STRUCTURE
ITEM : MAINTENANCE MARINE PAINT (PROTECTIVE COATING)						INSPECTION CATEGORY :BULK	
A c t i v i t y	1. Inspection by ONGC / Certification Agency.(CA)/2. Third Party Inspection(TPI)						
	3.Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor (Paint Manufacturer's Inspector)						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6.Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
	1	A & W at offshore	W at offshore platform	H	X	Inspection & Test Plan.Approval sample Coating panels including salt test	
	2	A	A	A	X	Paint application & Inspection Procedure: Contractor shall prepare Painting / Coating application & Inspection Procudure based on Spec 2005 and submit Company Approval.	
	Inspection & testing						
	3			W	-	Inspection & testing shall be carried out based on Spec 2005	
4			Rw	-	Inspection of salt content test		
5			Rw	-	Inspection of wet coating thickness		
6			Rw	-	Inspection of final coating thickness		
7			Rw	-	Inspection of Coating holiday Test		
IRN For issue by CA/TPI/Contractor IA/Vender's QA							
8	-	-	-	Is	X	Issue & Documentation at Vendor Place (MILL)	
IMIR/GIIR at Offshore							
9	Rw	-	H	X	Verification of items as per IRN at Offshore, batch no. Expiry , condnion of packing , storage condition etc.		
10	Is	-	H	X	Issue of IMIR/GIIR & Documentation on the basis of IRN		
LEGENDS & NOTES : Expalined seperatetely							
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Note 1: The painting Inspector shall have minimum

“SSPC's ( Steel Structure Painting Council) Certification Course on Paint Coating Inspection and Quality control Level 1”

OR

“ NACE's Coating Inspector Certification (CIP) Level 1” .

Note 2: This procedure and qualification test has to be approved by Level 2 or 3 of SSPC Certificate Course or NACE (CIP)



**Offshore Design Section  
Engineering Services  
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**INSPECTION  
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**IRT No.** -  
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S. No	ITEM	IRT NO.	INSP. CATEGORY
1.	CARBON STEEL SEAMLESS LINE PIPES ( SOUR SERVICE)	ODS/PIPELINE/IRT/01	A
2.	CARBON STEEL SEAMLESS LINE PIPES ( NON-SOUR SERVICE)	ODS/PIPELINE/IRT/02	A
3.	LSAW LINE PIPES ( SOUR SERVICE)	ODS/PIPELINE/IRT/03	A
4.	LSAW LINE PIPES (NON- SOUR SERVICE)	ODS/PIPELINE/IRT/04	A
5.	CRA CLAD LINE PIPES ( SOUR SERVICE)	ODS/PIPELINE/IRT/05	A
6.	LONG RADIUS BENDS	ODS/PIPELINE/IRT/06	B
7.	CRA CLAD LONG RADIUS BENDS ( SOUR SERVICE)	ODS/PIPELINE/IRT/07	B
8.	ANTI CORROSION COATING , CWC COATING , ANODE INSTALLATION & MONEL SHEATHING	ODS/PIPELINE/IRT/08	A
9.	INTERNAL ANTI-CORROSION COATING	ODS/PIPELINE/IRT/09	A
10.	INSULATION COATING	ODS/PIPELINE/IRT/10	A
11.	NICKEL COPPER ALLOY UNS N04400 ( MONEL) PLATES AND ASSOCIATE ITEMS	ODS/PIPELINE/IRT/11	C
12.	FLEXIBLE PIPES	ODS/PIPELINE/IRT/12	A
13.	SUB-SEA BALL VALVE ( SOUR SERVICE)	ODS/PIPELINE/IRT/13	B
14.	SUB-SEA BALL VALVE ( NON-SOUR SERVICE)	ODS/PIPELINE/IRT/14	B
15.	SUB-SEA FLANGES ( SOUR SERVICE)	ODS/PIPELINE/IRT/15	B
16.	SUB-SEA FLANGES ( NON-SOUR SERVICE)	ODS/PIPELINE/IRT/16	B
17.	SUB-SEA FLOW TEE ( SOUR SERVICE)	ODS/PIPELINE/IRT/17	B
18.	SUB-SEA FLOW TEE ( NON-SOUR SERVICE)	ODS/PIPELINE/IRT/18	B
19.	SUB-SEA PIGGABLE WYE ( SOUR SERVICE)	ODS/PIPELINE/IRT/19	A
20.	SUB-SEA PIGGABLE WYE ( NON-SOUR SERVICE)	ODS/PIPELINE/IRT/20	A

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## INSPECTION REQUIREMENT TABLE

### OIL AND NATURAL GAS CORPORATION LTD. INDIA

AVIN ASHOK EE(C)	R.P. PUROHIT CE(C&M)	ROHIT PANT DGM(M)	SANJAY NARAIN DGM(C&M)
RAJKAMAL GUPTA DGM(C&M)	BALMIKI SINGH DGM(C&M)	BRAHMPAL MALIK DGM(C&M)	K.P.VARGHESE DGM(C&M)
PREPARED BY			
A.K.MISHRA DGM (C&M)		D.R.KAMBLE GM (C&M)	
REVIEWED BY		APPROVED BY	
As per Index	18.04.2016	0	
TOTAL NO. of IRTs	DATE	REV.NO.	

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**ODS/PIPELINE/IRT/01**  
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Item: CARBON STEEL SEAMLESS LINE PIPES (SOUR SERVICE)					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020B					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	MANUFACTURING PROCEDURE SPECIFICATION
3	A	R	H	X	INSPECTION TESTING PLAN
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	R	R	H	X	STARTING MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
6	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS/NDT TECHNICIAN QUALIFICATION CERTIFICATES IN LINE WITH API 5L REQUIREMENT
7	R	H	H	X	FINAL DOCUMENTATION , MILL QUALIFICATION TEST REPORTS, FDPT, MILL PRODUCTION REPORTS
8	R	R	H	X	PIPE MANUFACTURING DATA BOOK AS PER CL. 10.1.3.2
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
9	RW	W	H	X	STARTING MATERIAL IDENTIFICATION
10	RW	W	H	X	CALIBRATION OF EQUIPMENTS/ INSTRUMENTS
11	W	W	H	X	MILL QUALIFICATION TEST CERTIFICATION
12	RW	W	H	X	FIRST DAY PRODUCTION SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL & CORROSION TESTS
13	RW	RW	H	X	INPROCESS PARAMETER CHECK, HEAT TREATMENT, STEEL MAKING PROCESS CHECK, BILLET HEAT NUMBER VERIFICATION
14	RW	W	H	X	PRODUCTION TEST SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL, CORROSION & SUPPLEMENTARY TESTS
15	RW	W	H	X	PIPE END/ BEVEL & HYDROTESTING CHECK
16	RW	W	H	X	ALL DESTRUCTIVE AND NDT AS PER STANDARD & SUPPLEMENTARY REQUIREMENTS AS PER THE SPEC WITH ADDENDUM
17	RW	RW	H	X	PIPE END DEMAGNETISING
18	RW	W	H	X	FINAL DIMENSIONAL, VISUAL CHECK, WEIGHT CHECK, MARKING, DIE STAMPING AND BEVEL PROTECTORS ETC.
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
19	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
20	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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Item: CARBON STEEL SEAMLESS LINE PIPES (NON-SOUR SERVICE)					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020A					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	MANUFACTURING PROCEDURE SPECIFICATION
3	A	R	H	X	INSPECTION TESTING PLAN
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
6	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS/NDT TECHNICIAN QUALIFICATION CERTIFICATES
7	R	H	H	X	FINAL DOCUMENTATION, FDPT, MILL PRODUCTION REPORTS
8	R	R	H	X	PIPE MANUFACTURING DATA BOOK
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
9	RW	W	H	X	MATERIAL IDENTIFICATION
10	RW	W	H	X	CALIBRATION OF EQUIPMENTS/ INSTRUMENTS
11	RW	W	H	X	FIRST DAY PRODUCTION SAMPLING AND TESTING FOR MECHANICAL & CHEMICAL TESTS
12	RW	RW	H	X	INPROCESS PARAMETER CHECK, HEAT TREATMENT, STEEL MAKING PROCESS CHECK, BILLET HEAT NUMBER VERIFICATION
13	RW	W	H	X	PRODUCTION TEST SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL & SUPPLEMENTARY TESTS
14	RW	W	H	X	PIPE END/ BEVEL & HYDROTESTING CHECK
15	RW	W	H	X	ALL DESTRUCTIVE AND NDT AS PER STANDARD & SUPPLEMENTARY REQUIREMENTS AS PER SPEC.
16	RW	RW	H	X	PIPE END DEMAGNETISING
17	RW	W	H	X	FINAL DIMENSIONAL, VISUAL CHECK, WEIGHT CHECK, MARKING, DIE STAMPING AND BEVEL PROTECTORS ETC.
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
18	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
19	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.  
Legend & Notes : Explained Separately.

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Item: LONGITUDINAL SEAM SUBMERGED ARC WELDED LINEPIPE FOR SUBMARINE PIPELINES (SOUR SERVICE)					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020D					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	MANUFACTURING PROCEDURE SPECIFICATION
3	A	R	H	X	INSPECTION TESTING PLAN
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
6	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS/NDT TECHNICIAN QUALIFICATION CERTIFICATES
7	R	R	H	X	WPS/PQR AND WPQ'S
8	R	H	H	X	FINAL DOCUMENTATION , MILL QUALIFICATION TEST REPORTS, FDPT, MILL PRODUCTION REPORTS
9	R	R	H	X	PIPE MANUFACTURING DATA BOOK
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
10	RW	W	H	X	MATERIAL IDENTIFICATION
11	RW	W	H	X	CALIBRATION OF EQUIPMENTS/ INSTRUMENTS
12	W	W	H	X	MILL QUALIFICATION TEST CERTIFICATION
13	RW	W	H	X	FIRST DAY PRODUCTION SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL & CORROSION TESTS
14	RW	W	H	X	PRODUCTION TEST SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL, CORROSION & SUPPLEMENTARY TESTS
15	RW	W	H	X	PIPE END/ BEVEL & HYDROTESTING CHECK
16	RW	W	H	X	ALL DESTRUCTIVE AND NDT AS PER STANDARD & SUPPLEMENTARY REQUIREMENTS AS PER SPEC WITH ADDENDUM
17	RW	RW	H	X	PIPE END DEMAGNETISING
18	RW	W	H	X	FINAL DIMENSIONAL, VISUAL CHECK, WEIGHT CHECK, MARKING, DIE STAMPING AND BEVEL PROTECTORS ETC.
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
19	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					** OTHER REQUIREMENT**
20	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.





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Item: LONGITUDINAL SEAM SUBMERGED ARC WELDED LINEPIPE FOR SUBMARINE PIPELINES (NON-SOUR SERVICE)					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020C					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	MANUFACTURING PROCEDURE SPECIFICATION
3	A	R	H	X	INSPECTION TESTING PLAN
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
6	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS/NDT TECHNICIAN QUALIFICATION CERTIFICATES
7	R	R	H	X	WPS/PQR AND WPQ’S
8	R	H	H	X	FINAL DOCUMENTATION , FDPT, MILL PRODUCTION REPORTS
9	R	R	H	X	PIPE MANUFACTURING DATA BOOK
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
10	RW	W	H	X	MATERIAL IDENTIFICATION
11	RW	W	H	X	CALIBRATION OF EQUIPMENTS/ INSTRUMENTS
12	RW	W	H	X	FIRST DAY PRODUCTION SAMPLING AND TESTING FOR MECHANICAL & CHEMICAL TESTS
13	RW	W	H	X	PRODUCTION TEST SAMPLING AND TESTING FOR MECHANICAL, CHEMICAL & SUPPLEMENTARY TESTS
14	RW	W	H	X	PIPE END/ BEVEL & HYDROTESTING CHECK
15	RW	W	H	X	ALL DESTRUCTIVE AND NDT AS PER STANDARD & SUPPLEMENTARY REQUIREMENTS AS PER SPEC WITH ADDENDUM
16	RW	RW	H	X	PIPE END DEMAGNETISING
17	RW	W	H	X	FINAL DIMENSIONAL, VISUAL CHECK, WEIGHT CHECK, MARKING, DIE STAMPING AND BEVEL PROTECTORS ETC.
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
18	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
19	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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**ODS/PIPELINE/IRT/05**  
**0**  
**PIPELINE**

Item: CRA CLAD LINEPIPES (SOUR SERVICE)					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020F & 2020D					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	INSPECTION AND TEST PLAN
2	A	R	H	X	SUBMISSION OF MANUFACTURING PROCEDURE SPECIFICATION (MPS)
3	R	R	H	X	SUBMISSION OF CRA CLADDING PROCESS, HEAT TREATMENT
4	R	R	H	X	UT FOR BOND INTEGRITY AND LAMINATION CHECK AND OTHER NDT PROCEDURES (FOR PLATES AND FINISHED PIPES), WELDING IN LINE WITH ONGC SPEC.2020 F AND ACCEPTANCE CRITERIA
5	R	R	H	X	SUBMISSION OF NDT TECHNICIAN CERTIFICATES/ QUALIFICATION RECORDS
6	R	W	H	X	WPS/PQR AND WPQS
7	R	R	H	X	VERIFICATION OF HEAT TREATMENT RECORDS/CHARTS (AS APPLICABLE)
8	R	R	H	X	CRA CLAD MANUFACTURING DATA BOOK, MANUFACTURER’S TEST CERTIFICATES IN COMPLIANCE TO THE ONGC SPECIFICATIONS AND NACE MR 01 75/ ISO 15156 FOR CRA CLAD NACE LINE PIPES.
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
9	RW	W	H	X	IDENTIFICATION OF CRA CLAD PLATES / RAW MATERIAL AND VERIFICATION OF TRACEABILITY RECORDS
10	RW	W	H	X	CHEMICAL ANALYSIS, CORROSION TEST AND MECHANICAL TESTS INLINE WITH ONGC’S SPECIFICATION 2020F,2020D (FOR BASE MATERIAL)AND APPLICABLE STANDARDS
11	RW	W	H	X	NDE (RT/UT/MPI/DPT – AS PER ONGC SPEC)
12	RW	W	H	X	VISUAL, DIMENSIONAL, WALL THICKNESS, OVALITY AND STRAIGHTNESS CHECK, BEVEL CHECK AND HARD STAMPING
13	RW	W	H	X	HYDROSTATIC PRESSURE TEST
14	RW	RW	H	X	MARKING , HARD STAMPING ON PIPE BEVEL, MATERIAL FOR IDENTIFICATION/ TRACEABILITY
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
15	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
16	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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Item: LONG RADIUS BENDS					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2018					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	INSPECTION AND TEST PLAN
2	A	R	H	X	INSPECTION TESTING AND MANUFACTURING PROCEDURE
3	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4	R	R	H	X	PIPE LONG RADIUS BENDS VENDOR DOSSIER, MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
5	R	R	H	X	CALIBRATION CERTIFICATES/ REPORTS OF TESTING EQUIPMENTS
6	R	H	H	X	FINAL DOCUMENTATION
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
7	RW	W	H	X	MATERIAL IDENTIFICATION AND VERIFICATION OF TRACEABILITY RECORDS
8	W	W	H	X	MANUFACTURING PROCEDURE QUALIFICATION TEST ALONG WITH MECHANICAL,CHEMICAL AND CORROSION TESTING
9	W	W	H	X	FINAL VISUAL AND DIMENSIONAL & TOLERANCE CHECK,BEND ANGLE,BEND RADIUS,OVALITY,WALL THICKNESS,OFF-PLANE, BEVEL CHECK AND ALL OTHER TESTS AS PER SPEC 2018 REV0
10	W	W	H	X	RUNNING OF GAUGING PIG CHECK
11	W	W	H	X	NDE REQUIREMENT (RT/UT/MPI/DPT-AS AS PER ONGC SPEC)
12	W	W	H	X	HYDROSTATIC PRESSURE TEST
13	W	H	H	X	VERIFICATION OF MARKING
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
14	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
15	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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Item: CRA CLAD LONG RADIUS BENDS (SOUR SERVICE)					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2018 A					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	INSPECTION AND TEST PLAN
2	A	R	H	X	SUBMISSION OF PROCEDURE FOR HEAT TREATMENT (IF REQUIRED), UT FOR BOND INTEGRITY CHECK PROCEDURES IN LINE WITH ONGC SPEC
3	A	R	H	X	SUBMISSION OF CRA CLAD BENDS MANUFACTURING PROCEDURE.
4	R	R	H	X	SUBMISSION OF NDT TECHNICIANS CERTIFICATES/ QUALIFICATION PROCEDURES
5	R	R	H	X	MANUFACTURER’S TEST CERTIFICATES IN COMPLIANCE TO APPLICABLE ONGC SPECIFICATION AND NACE MR 01 75/ ISO 15156 FOR NACE LINE PIPES.
6	R	R	H	X	CRA CLAD BEND MANUFACTURING DATA BOOK
7	R	H	H	X	FINAL DOCUMENTATION
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
8	RW	W	H	X	MATERIAL IDENTIFICATION AND VERIFICATION OF TRACEABILITY RECORDS
9	W	W	H	X	MANUFACTURING PROCEDURE QUALIFICATION TEST ALONG WITH MECHANICAL,CHEMICAL AND CORROSION TESTING
10	RW	W	H	X	FINAL VISUAL AND DIMENSIONAL & TOLERANCE CHECK,BEND ANGLE,BEND RADIUS,OVALITY,WALL THICKNESS,OFF-PLANE AND ALL OTHER TESTS AS PER SPEC 2018A REV0
11	W	W	H	X	RUNNING OF GAUGING PIG CHECK
12	W	W	H	X	NDE REQUIREMENTS (RT/UT/MPI/DPT – AS PER ONGC SPEC)
13	W	W	H	X	HYDROSTATIC PRESSURE TEST
14	R	H	H	X	VERIFICATION OF MARKING
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
15	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
16	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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<b>Item:</b> ANTI-CORROSION COATING (3 LAYER POLYPROPYLENE), CONCRETE WEIGHT COATING, AND ANODE INSTALLATION	<b>INSPECTION CATEGORY: A</b>
<b>ONGC FUNCTIONAL SPEC: 2012A, 2013, 4002 AND 2015</b>	

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)					
	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
STAGES OF INSPECTION						
<b>GENERAL &amp; DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION</b>						
1.	A	R	R	H	X	INSPECTION AND TEST PLAN (COVERING ALL STAGES OF RAW MATERIALS)
2.	A	R	R	H	X	PRE-QUALIFICATION TEST PROCEDURE OF ANTI-CORROSION COATING, CONCRETE WEIGHT COATING & ANODE INSTALLATION
3.	R	R	R	H	X	VENDOR DOSSIER FOR AS INSTALLED INCLUDING TEST CERTIFICATES OF ANTI CORROSION COATING, CONCRETE COATING, ANODE INSTALLATION & MONEL SHEATHING
4.	R	R	H	H	X	FINAL DOCUMENTATION
<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>						
<b>BARE LINE PIPE, LONG RADIUS BENDS, SUBSEA BALL VALVES, FLANGES &amp;ALL OTHER PIPELINE ITEMS. RECEIPT AT YARD</b>						
5.	RW	RW	RW	H	X	VISUAL INSPECTION OF PIPES, LR BENDS, SUBSEA BALL VALVES, FLANGES& ALL OTHER PIPELINE ITEMS ETC. AT YARD, VERIFICATION WITH PIPE TALLY SHEETS ALONG WITH TRANSFER OF PIPE IDENTIFICATION NOS. AND ISSUE OF IMIR/GIIR
<b>ANODE INSTALLATION</b>						
5.	RW	RW	RW	H	X	VISUAL INSPECTION OF ANODE.
6.	RW	RW	RW	H	X	INSTALLATION & THERMITE WELDING.
7.	RW	RW	RW	H	X	VISUAL INSPECTION OF ANODE SHARP WELDS.
8.	RW	RW	RW	H	X	MPI AN ANODE SHARP WELD.
9.	RW	RW	RW	H	X	ELECTRICAL CONTINUITY CHECK.
10.	RW	RW	RW	H	X	COAL-TAR FILL-UP IN JOINT GAPS.
<b>ANTI-CORROSION COATING</b>						
11.	RW	RW	RW	H	X	RAW MATERIAL IDENTIFICATION AND REVIEW OF MANUFACTURER'S TEST CERTIFICATES AS PER PROJECT SPECIFICATION ONGC SPEC 2012A
12.	RW	RW	RW	H	X	SAMPLE TESTING OF PROCURED FBE POWDER, PP & ADHESIVE.
13.	RW	RW	RW	H	X	PROCEDURE QUALIFICATION TESTING FOR 3LPP CORROSION COATING AS PER PROCEDURE AS PER APPENDIX 1 OF SPEC.2012.
14.	RW	RW	RW	H	X	CHECK SURFACE CONDITION BEFORE BLASTING, PREHEATING.
15.	RW	RW	RW	H	X	CLEANLINESS OF BLAST CLEANED SURFACE
16.	RW	RW	RW	H	X	SURFACE PROFILE CHECK.

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	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
						STAGES OF INSPECTION
17.	RW	RW	RW	H	X	PHOSPHORIC ACID PRE-TREATMENT.
18.	RW	RW	RW	H	X	CHOLORIDE CONTENT CHECK.
19.	RW	RW	RW	H	X	CHECK PIPE SURFACE TEMPERATURE & COATING APPLICATION TEMPERATURE.
20.	RW	RW	RW	H	X	ANTI-CORROSION COATING.
21.	RW	RW	RW	H	X	VISUAL CHECK.
22.	RW	RW	RW	H	X	COATING THICKNESS CHECK.
23.	RW	W	W	H	X	HOLIDAY TESTING.
24.	W	W	W	H	X	ADHESION TESTING
25.	RW	RW	W	H	X	PENETRATION INDENTATION TEST.
26.	RW	RW	W	H	X	IMPACT TEST.
27.	RW	RW	RW	H	X	CATHODIC DISBONDING CHECK.
28.	RW	RW	RW	H	X	AIR ENTRAPMENT (POROSITY) ASSESSMENT.
29.	RW	RW	RW	H	X	DEGREE OF CURE
30.	W	W	W	H	X	DESTRUCTIVE TESTS.
31.	W	W	W	H	X	REPAIRS IF ANY.
32.	RW	RW	W	H	X	HANDLING & STORAGE OF PIPES.
33.	RW	RW	W	H	X	MARKING AND TRACEABILITY CHECK.
CONCRETE COATING						
34.	W	W	W	H	X	PROCEDURE QUALIFICATION FOR CONCRETE MIX AND APPLICATION AS PER PROJECT SPECIFICATION ONGC SPEC 2013
35.	RW	RW	RW	H	X	CHECK FOR GRADING AND PURITY OF SAND AND AGGREGATE, CHECK FOR PURITY OF WATER.
36.	RW	RW	RW	H	X	CHECK FOR REINFORCEMENT STEEL.
37.	RW	RW	RW	H	X	HOLIDAY DETECTION/MEGGERING TEST
38.	RW	RW	RW	H	X	CALIBRATION FOR WEIGHING EQUIPMENT.
39.	RW	RW	W	H	X	VISUAL, DIMENSIONAL & TOLERANCE CHECK.
40.	RW	RW	W	H	X	-SATURATED WEIGHT TEST -STRENGTH(IN 7 DAYS, 28 DAYS) AND DENSITY TEST -WATER ABSORPTION TEST
41.	W	W	W	H	X	SHEAR TEST (PUSH OFF TEST).
42.	RW	RW	RW	H	X	MEASUREMENT & LOGGING OF EACH PIPE CONCRETE COATING.
43.	RW	RW	RW	H	X	WET & DRY WEIGHING OF COATED PIPE.

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Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)					
	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
						STAGES OF INSPECTION
FABRICATION AND INSTALLATION OF NICKEL – COPPER ALLOY UNS N04400 (MONEL) PLATES AND ASSOCIATE ITEMS						
44.	A	R	R	H	X	INSPECTION AND TEST PLAN
45.	RW	W	W	H	X	MATERIAL IDENTIFICATION & MATERIAL TEST CERTIFICATES AND TRACEABILITY RECORDS AS PER CLAUSE 8.13 OF ONGC SPEC 2015 REV 1
46.	A	R	W	H	X	WPS/PQR/WPQ
47.	W	W	W	H	X	VISUAL, DIMENSIONAL CHECK , FABRICATION AND WELDING
48.	RW	RW	W	H	X	NDT
49.	W	W	W	H	X	LEAK TEST
FINAL						
50.	RW	RW	RW	H	X	REPAIRS, MARKING AS PER PROJECT SPECIFICATION.
51.	RW	RW	RW	H	X	VERIFY CUT BACK OF CWC & 3LPP COATING.
52.	RW	RW	RW	H	X	CHECK FOR BEVEL END PROTECTIONS AND INTERNAL & END CLEANING.
53.	RW	RW	RW	H	X	REVIEW OF DETAILED CORELATION CHART, TALLY SHEETS AT VENDOR PLACE.
IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA						
54.	Is	R	R	-		ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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**ODS/PIPELINE/IRT/09**

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**PIPELINE**

**Item: INTERNAL ANTI-CORROSION COATING**

**Inspection Category: A**

**ONGC FUNCTIONAL SPEC: TBA**

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)					
	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
						STAGES OF INSPECTION
						<b>GENERAL &amp; DOCUMENTS -FOR REVIEW /APPROVAL / INFORMATION</b>
1.	A	R	R	H	X	INSPECTION AND TEST PLAN
2.	A	R	R	H	X	INSPECTION TESTING AND APPLICATION PROCEDURE
3.	R	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4.	R	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
5.	R	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS
						<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
						<b>BARE LINE PIPE RECEIPT AT YARD</b>
6.	RW	RW	RW	H	X	VISUAL INSPECTION OF PIPES, LR BENDS, ALL OTHER PIPELINE ITEMS ETC. AT YARD, VERIFICATION WITH PIPE TALLY SHEETS ALONG WITH TRANSFER OF PIPE IDENTIFICATION NOS. AND ISSUE OF IMIR/GIIR
7.	RW	RW	W	H	X	RAW MATERIAL IDENTIFICATION AND REVIEW OF MANUFACTURER TEST CERTIFICATES
8.	RW	RW	W	H	X	SAMPLE TESTING OF RAW MATERIAL
9.	RW	RW	RW	H	X	INTERNAL SURFACE INSPECTION , CLEANING , SURFACE ANCHOR PROFILE AS PER SPECIFICATION
10.	W	W	W	H	X	PRE QUALIFICATION TESTING- SAMPLING, TESTING & INSPECTION AS PER SPECIFICATION REQUIREMENT
11.	RW	RW	W	H	X	PRODUCTION SAMPLING, TESTING & INSPECTION AS PER SPECIFICATION REQUIREMENT
12.	RW	W	W	H	X	MATERIAL CONTROL RECORDS AND REPAIR OF INTERNAL COATING AS PER APPROVED PROCEDURE AND PROJECT SPECIFIC REQUIREMENT
13.	RW	RW	W	H	X	MARKING, QUALITY ASSURANCE AND DOCUMENT REVIEW
						<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
14.	Is	R	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
<b>** OTHER REQUIREMENT**</b>						
15.	RW	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.  
Legend & Notes : Explained Separately.

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**PIPELINE**

**Item: INSULATION COATING**

**Inspection Category: A**

**ONGC FUNCTIONAL SPEC: TBA**

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)					
	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
						<b>STAGES OF INSPECTION</b>
						<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL/ INFORMATION</b>
1.	A	R	R	H	X	INSPECTION AND TEST PLAN
2.	A	R	R	H	X	INSPECTION TESTING AND MANUFACTURING PROCEDURE
3.	R	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4.	R	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES
5.	R	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS
						<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
6.	RW	RW	W	H	X	RAW MATERIAL IDENTIFICATION
7.	RW	RW	W	H	X	INSPECTION OF INCOMING ANTI-CORROSION COATED PIPES- VISUAL INSPECTION & HOLIDAY DETECTION
8.	RW	RW	W	H	X	PRE QUALIFICATION TESTING, SAMPLING, TESTING & INSPECTION AS PER SPECIFICATION REQUIREMENT
9.	RW	RW	W	H	X	PRODUCTION SAMPLING, TESTING & INSPECTION AS PER SPECIFICATION REQUIREMENT
10.	RW	RW	W	H	X	MATERIAL CONTROL RECORDS AND REPAIR OF INSULATION COATING AS PER APPROVED PROCEDURE AND PROJECT SPECIFIC REQUIREMENT
11.	RW	RW	W	H	X	MARKING, QUALITY ASSURANCE AND DOCUMENT REVIEW
						<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
12.	Is	R	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
<b>** OTHER REQUIREMENT**</b>						
13.	RW	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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**ODS/PIPELINE/IRT/11**

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**PIPELINE**

**Item: NICKEL – COPPER ALLOY UNS N04400  
(MONEL) PLATES AND ASSOCIATE ITEMS**

**INSPECTION CATEGORY: C**

**ONGC FUNCTIONAL SPEC: 2015**

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)					
	2. Inspection by ONGC Appointed Third Party Inspection Agency (TPI)					
	3. Inspection by Contractor or Contractor appointed Third Party Inspection Agency					
	4. Inspection by Vendor / Sub Vendor					
	5. Certificate / Data to be submitted by Vendor for Review / Approval					
						<b>STAGES OF INSPECTION</b>
						<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL /INFORMATION</b>
1.	A	-	R	H	X	INSPECTION AND TEST PLAN
2.	R	-	R	H	X	MATERIAL IDENTIFICATION & MATERIAL TEST CERTIFICATES AND TRACEABILITY RECORDS AS PER ONGC SPEC 2015.
						<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
3.	-	-	W	H	X	NDT
4.	-	-	W	H	X	FINAL VISUAL AND DIMENSIONAL CHECK
5.	-	-	R	H	X	FINAL DOCUMENTATION REVIEW
						<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
6.	-	-	Is	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S WORKS
7.	R	R	-	-	-	VERIFICATION OF INSPECTION RELEASE NOTE AT YARD
						<b>** OTHER REQUIREMENT**</b>
8.	-	R	-	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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Item: FLEXIBLE PIPES					INSPECTION CATEGORY: A
ONGC FUNCTIONAL SPEC: 2020E					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL /INFORMATION</b>
1	A	R	H	X	INSPECTION AND TEST PLAN
2	A	R	H	X	INSPECTION TESTING AND MANUFACTURING PROCEDURE, FAT PROCEDURE
3	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4	R	R	H	X	MATERIAL TEST CERTIFICATES / COMPLIANCE CERTIFICATES / TYPE APPROVAL CERTIFICATE
5	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TESTING EQUIPMENTS
6	R	R	H	X	AS BUILT DOSSIER, PIPE MANUFACTURING DATA BOOK
7	R	H	H	X	FINAL DOCUMENTATION REVIEW, PRODUCTION REPORTS
					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
8	RW	W	H	X	MATERIAL IDENTIFICATION
9	RW	RW	H	X	INPROCESS INSPECTION
10	RW	W	H	X	SAMPLING FOR TESTING
11	RW	W	H	X	CHECK HYDROSTATIC TEST
12	RW	W	H	X	PIPE END FITTING CHECK
13	W	W	H	X	FAT
14	RW	W	H	X	FINAL DIMENSIONAL, VISUAL CHECK, TAGGING/ NAME PLATE CHECK, ACCESSORIES CHECK
					<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
15	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					<b>** OTHER REQUIREMENT**</b>
16	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes: Explained separately.

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Item: SUBSEA BALL VALVE (SOUR SERVICE)					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2025B					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION AND TESTING PROCEDURE
3	R	R	H	X	WPS AND WELDER QUALIFICATION AS PER ONGC SPEC 2009F.
4	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES AS PER ONGC SPEC 2025B (INCLUSIVE OF ITS MATERIAL CORRELATION CHART)
5	R	R	H	X	CERTIFICATE REGARDING MAXIMUM BENDING MOMENT PERMISSIBLE FOR VALVE
6	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES FOR PUP PIECE AS PER ONGC SPEC 2020B / 2020D
7	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES FOR FLANGES AND FITTINGS AS PER ONGC SPEC 2024B
8	R	R	H	X	MPI OR DPI SHALL BE 100% AS APPLICABLE FOR WELDS & MACHINE SURFACE OF CASTING OR FORGING AS PER ONGC SPEC 2025B
9	R	R	H	X	DIMENSIONAL CHECK REPORTS, VENDOR AS BUILT DOSSIER CONTAINING DRAWINGS, DATA SHEETS, CALCULATIONS, OPERATIONAL MANUAL, VALVE MANUFACTURING DATA BOOK
10	A	H	H	X	FINAL DOCUMENTATION REVIEW
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
11	RW	W	H	X	RADIOGRAPHY TEST FOR CASTING (100% RT FILM REVIEW FOR ALL VALVES BY CA), ULTRASONIC AND OTHER NDE REQUIREMENTS
12	RW	W	H	X	MECHANICAL, CHEMICAL, CORROSION, ELECTRICAL & CATHODIC PROTECTION CONTINUITY, CAVITY RELIEF AND ALL OTHER TESTS IN COMPLIANCE WITH ONGC SPEC 2025B.
13	W	H	H	X	VALVE HYDROSTATIC AND PNEUMATIC TESTING IN COMPLIANCE WITH REQUIREMENTS OF API 6DSS AND ONGC SPEC 2025B.
14	W	H	H	X	HYPERBARIC PRESSURE TEST(QUALIFICATION TESTING)
15	W	H	H	X	FUNCTIONAL TEST IN COMPLIANCE WITH ONGC SPEC 2025B.
16	W	W	H	X	FINAL VISUAL AND DIMENSIONAL CHECK
17	RW	W	H	X	SURFACE PREPARATION, ANTI COROSION AND ANTI FOULING PAINTING AS PER DATA SHEET AS PER ONGC SPEC 2005
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
18	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					** OTHER REQUIREMENT**
19	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT
20	W	W	-	-	SITE ACCEPTANCE TEST AT OFFSHORE

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.  
Legend & Notes: Explained Separately.

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Item: SUBSEA BALL VALVE (NON-SOUR SERVICE)					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2025A					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor’s inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					GENERAL & DOCUMENTS -FOR REVIEW /APPROVAL/INFORMATION
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION AND TESTING PROCEDURE
3	R	R	H	X	WPS AND WELDER QUALIFICATION AS PER ONGC SPEC 2009F.
4	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES AS PER ONGC SPEC 2025A (INCLUSIVE OF ITS MATERIAL CORRELATION CHART)
5	R	R	H	X	CERTIFICATE REGARDING MAXIMUM BENDING MOMENT PERMISSIBLE FOR VALVE
6	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES FOR PUP PIECE AS PER ONGC SPEC 2020A / 2020C
7	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES FOR FLANGES AND FITTINGS AS PER ONGC SPEC 2024A
8	R	R	H	X	MPI OR DPI SHALL BE 100% AS APPLICABLE FOR WELDS & MACHINE SURFACE OF CASTING OR FORGING AS PER ONGC SPEC 2025A
9	R	R	H	X	DIMENSIONAL CHECK REPORTS, VENDOR AS BUILT DOSSIER CONTAINING DRAWINGS, DATA SHEETS, CALCULATIONS, OPERATIONAL MANUAL, VALVE MANUFACTURING DATA BOOK
10	A	H	H	X	FINAL DOCUMENTATION REVIEW
					INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS
11	RW	W	H	X	RADIOGRAPHY TEST FOR CASTING (100% RT FILM REVIEW FOR ALL VALVES BY CA), ULTRASONIC AND OTHER NDE REQUIREMENTS
12	RW	W	H	X	MECHANICAL, CHEMICAL, CORROSION, ELECTRICAL & CATHODIC PROTECTION CONTINUITY, CAVITY RELIEF AND ALL OTHER TESTS IN COMPLIANCE WITH ONGC SPEC 2025B.
13	W	H	H	X	VALVE HYDROSTATIC AND PNEUMATIC TESTING IN COMPLIANCE WITH REQUIREMENTS OF API 6DSS AND ONGC SPEC 2025B.
14	W	H	H	X	HYPERBARIC PRESSURE TEST(QUALIFICATION TESTING)
15	W	H	H	X	FUNCTIONAL TEST IN COMPLIANCE WITH ONGC SPEC 2025A.
16	W	W	H	X	FINAL VISUAL AND DIMENSIONAL CHECK
17	RW	W	H	X	SURFACE PREPARATION, ANTI COROSION AND ANTI FOULING PAINTING AS PER DATA SHEET
					IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA
18	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR’S PLACE
					** OTHER REQUIREMENT**
20	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT
21	W	W	-	-	SITE ACCEPTANCE TEST AT OFFSHORE

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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**ODS/PIPELINE/IRT/15**  
**0**  
**PIPELINE**

<b>Item: SUBSEA FLANGES (SOUR SERVICE)</b>					<b>INSPECTION CATEGORY: B</b>
<b>ONGC SPEC: 2024 B</b>					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS -FOR REVIEW /APPROVAL /INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION AND TESTING PROCEDURE
3	R	R	H	X	MATERIAL TEST AND CORROSION TESTS CERTIFICATES AS PER ONGC SPEC 2024B REV 0
4	R	R	H	X	DIMENSIONAL CHECK REPORTS, VENDOR AS BUILT DOSSIER CONTAINING DRAWINGS, DATA SHEETS & CALCULATIONS
5	R	W	H	X	SURFACE PREPARATION AND PROTECTIVE COATING AS PER ONGC SPEC 2005
6	R	H	H	X	FINAL DOCUMENTATION REVIEW
					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
7	RW	W	H	X	MATERIAL IDENTIFICATION
8	RW	W	H	X	NDE REQUIREMENTS
9	RW	W	H	X	MECHANICAL, CHEMICAL, CORROSION, AND ALL OTHER TESTS IN COMPLIANCE WITH ONGC SPEC 2024B REV 0.
10	W	W	H	X	FINAL VISUAL AND DIMENSIONAL CHECK
					<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
11	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					<b>** OTHER REQUIREMENT**</b>
12	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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ITEM: SUBSEA FLANGES (NON-SOUR SERVICE)					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2024 A					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS -FOR REVIEW /APPROVAL /INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION AND TESTING PROCEDURE
3	R	R	H	X	MATERIAL TEST CERTIFICATES AS PER ONGC SPEC 2024A
4	R	R	H	X	DIMENSIONAL CHECK REPORTS, VENDOR AS BUILT DOSSIER CONTAINING DRAWINGS, DATA SHEETS & CALCULATIONS
5	R	W	H	X	SURFACE PREPARATION AND PROTECTIVE COATING AS PER ONGC SPEC 2005
6	A	H	H	X	FINAL DOCUMENTATION REVIEW
					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
7	RW	W	H	X	MATERIAL IDENTIFICATION
8	RW	W	H	X	NDE REQUIREMENTS
9	RW	W	H	X	MECHANICAL, CHEMICAL AND ALL OTHER TESTS IN COMPLIANCE WITH ONGC SPEC 2024A REV 0.
10	W	W	H	X	FINAL VISUAL AND DIMENSIONAL CHECK
					<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
11	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					<b>** OTHER REQUIREMENT**</b>
12	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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ITEM: SUBSEA FLOW TEE (SOUR SERVICE)					INSPECTION CATEGORY: B
ONGC FUNCTIONAL SPEC: 2028 B					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL /INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION, TESTING AND MANUFACTURING PROCEDURE, WPS, PQR & WELDER QUALIFICATION
3	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4	R	R	H	X	MECHANICAL, CHEMICAL & CORROSION TEST CERTIFICATES / COMPLIANCE CERTIFICATE FOR TEE AND PIPE
5	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TEST EQUIPMENTS, NDT TECHNICIAN QUALIFICATION CERTIFICATE
6	A	H	H	X	FINAL DOCUMENTATION REVIEW
					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
7	RW	RW	H	X	MATERIAL IDENTIFICATION
8	RW	W	H	X	MECHANICAL, CHEMICAL & CORROSION TESTING AS PER ONGC SPEC NO. 2028B.
9	W	W	H	X	HYDROTESTING
10	W	W	H	X	VISUAL, NDT & DIMENSIONAL CHECK & WEIGHT CHECK, MARKING, SR CHART. 100% RT FILM REVIEW BY TPIA (IN CASE OF RADIOGRAPHY)
11	RW	W	H	X	SURFACE PREPERATION & COATING AS PER 2005
					<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
12	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					<b>** OTHER REQUIREMENT**</b>
13	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT (INCLUDING BEVEL PROTECTOR)

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately .

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**ODS/PIPELINE/IRT/18**  
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**PIPELINE**

<b>ITEM: SUBSEA FLOW TEE (NON-SOUR SERVICE)</b>					<b>INSPECTION CATEGORY: B</b>
<b>ONGC FUNCTIONAL SPEC: 2028 A</b>					
Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL / INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION, TESTING AND MANUFACTURING PROCEDURE, WPS, PQR & WELDER QUALIFICATION
3	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
4	R	R	H	X	MECHANICAL AND CHEMICAL TEST CERTIFICATES / COMPLIANCE CERTIFICATE FOR TEE AND PIPE
5	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TEST EQUIPMENTS, NDT TECHNICIAN QUALIFICATION CERTIFICATE
6	A	H	H	X	FINAL DOCUMENTATION REVIEW
					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
7	RW	RW	H	X	MATERIAL IDENTIFICATION
8	RW	W	H	X	MECHANICAL AND CHEMICAL TESTING AS PER ONGC SPEC NO. 2028A.
9	W	W	H	X	HYDROTESTING
10	W	W	H	X	VISUAL, NDT & DIMENSIONAL CHECK & WEIGHT CHECK, MARKING, SR CHART. 100% RT FILM REVIEW BY TPIA (IN CASE OF RADIOGRAPHY)
11	RW	W	H	X	SURFACE PREPERATION & COATING AS PER 2005
					<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>
12	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
					<b>** OTHER REQUIREMENT**</b>
13	RW	RW	H	X	CHECK PREPARATION FOR SHIPMENT (INCLUDING BEVEL PROTECTOR)

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS

Legend & Notes : Explained Separately.

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**ODS/PIPELINE/IRT/19**  
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**ITEM: SUBSEA PIGGABLE WYE (SOUR SERVICE)**

**INSPECTION CATEGORY: A**

**ONGC FUNCTIONAL SPEC: 2030 B**

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL / INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION, TESTING AND MANUFACTURING PROCEDURE
3	A	R	H	X	WPS, PQR & WELDER QUALIFICATION AS PER ONGC SPEC 2009F
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	RW	W	H	X	MTC FOR PUP PIECE AND FLANGES TO BE SUBMITTED AS PER ONGC SPEC 2020B / 2020D AND 2024B RESPECTIVELY
6	R	R	H	X	VENDOR DOSSIER CONTAINING MATERIAL TEST CERTIFICATES (FROM STARTING MATERIAL INGOTS, FORGING, HEAT TREATMENT OF FORGING) INCLUDING MECHANICAL, CHEMICAL & CORROSION TESTING COMPLIANCE CERTIFICATE, PRODUCT ANALYSIS, FEM ANALYSIS, AS BUILT DRAWINGS AS PER ONGC SPEC 2030B
7	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TEST EQUIPMENTS, NDT TECHNICIAN QUALIFICATION CERTIFICATE
8	R	R	H	X	SURFACE PREPARATION AND PROTECTIVE COATING PROCEDURE
	A	H	H	X	FINAL DOCUMENTATION REVIEW
9					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
10	W	W	H	X	MATERIAL IDENTIFICATION (FORGED MATERIAL)
11	W	W	H	X	SAMPLING AND MECHANICAL, CHEMICAL & CORROSION TESTING AS PER ONGC SPEC 2030B. (LAB CHECK TEST REPORT TO BE SUBMITTED FOR REVIEW)
12	RW	W	H	X	STRESS RELIEVING AS PER ONGC SPEC 2030B (ORIGINAL CHART TO BE SUBMITTED FOR REVIEW)
13	RW	W	H	X	WYE BODY HEAT TREATMENT
14	W	W	H	X	HYDROTESTING AS PER ONGC SPEC 2030B READ WITH DATA SHEET
15	W	H	H	X	NON DESTRUCTIVE TESTING (UT & MPI) AS PER ONGC SPEC 2030B (100% RT FILM REVIEW BY TPI FOR GIRTH WELD)
16	RW	W	H	X	POST WELD HEAT TREATMENT AS PER ONGC SPEC 2030B (ORIGINAL CHART TO BE SUBMITTED FOR REVIEW)
17	W	H	H	X	FUNCTIONAL TEST FOR PIGGABILITY AS PER ONGC SPEC 2030B

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Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
18	W	W	H	X	VISUAL AND DIMENSIONAL CHECK, WEIGHT CHECK
19	W	W	H	X	MARKING, SURFACE PREPARATION AND PROTECTIVE COATING AS PER DATA SHEET
<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>					
20	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
<b>** OTHER REQUIREMENT **</b>					
21	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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**ITEM: SUBSEA PIGGABLE WYE (NON-SOUR SERVICE)**

**INSPECTION CATEGORY: A**

**ONGC FUNCTIONAL SPEC: 2030 A**

Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
					<b>GENERAL &amp; DOCUMENTS - FOR REVIEW /APPROVAL / INFORMATION</b>
1	A	R	H	X	QUALITY PLAN
2	A	R	H	X	INSPECTION, TESTING AND MANUFACTURING PROCEDURE
3	A	R	H	X	WPS, PQR & WELDER QUALIFICATION AS PER ONGC SPEC 2009F
4	R	R	H	X	TESTS / INSPECTION REPORTS BY VENDOR
5	RW	W	H	X	MTC FOR PUP PIECE AND FLANGES TO BE SUBMITTED AS PER ONGC SPEC 2020A / 2020C AND 2024A RESPECTIVELY
6	R	R	H	X	VENDOR DOSSIER CONTAINING MATERIAL TEST CERTIFICATES (FROM STARTING MATERIAL INGOTS, FORGING, HEAT TREATMENT OF FORGING) INCLUDING MECHANICAL, CHEMICAL TESTING COMPLIANCE CERTIFICATE, PRODUCT ANALYSIS, FEM ANALYSIS, AS BUILT DRAWINGS AS PER ONGC SPEC 2030A
7	R	R	H	X	CALIBRATION CERTIFICATES / REPORTS OF TEST EQUIPMENTS, NDT TECHNICIAN QUALIFICATION CERTIFICATE
8	R	R	H	X	SURFACE PREPARATION AND PROTECTIVE COATING PROCEDURE
	A	H	H	X	FINAL DOCUMENTATION REVIEW
9					<b>INSPECTION AND TESTING- FOR WITNESS/ RANDOM WITNESS</b>
10	W	W	H	X	MATERIAL IDENTIFICATION (FORGED MATERIAL)
11	W	W	H	X	SAMPLING AND MECHANICAL, CHEMICAL TESTING AS PER ONGC SPEC 2030A REV 0. (LAB CHECK TEST REPORT TO BE SUBMITTED FOR REVIEW)
12	RW	W	H	X	STRESS RELIEVING AS PER ONGC SPEC 2030A (ORIGINAL CHART TO BE SUBMITTED FOR REVIEW)
13	RW	W	H	X	WYE BODY HEAT TREATMENT
14	W	W	H	X	HYDROTESTING AS PER ONGC SPEC 2030A READ WITH DATA SHEET
15	W	H	H	X	NON DESTRUCTIVE TESTING (UT & MPI) AS PER ONGC SPEC 2030A (100% RT FILM REVIEW BY TPI FOR GIRTH WELD)
16	RW	W	H	X	POST WELD HEAT TREATMENT AS PER ONGC SPEC 2030A (ORIGINAL CHART TO BE SUBMITTED FOR REVIEW)

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Activity No	1. Inspection by ONGC or ONGC Appointed Certification Agency (CA)				
	2. Inspection by LSTK contractor's inspection agency (TPI)				
	3. Inspection by Vendor/ Sub-vendor				
	4. Certificates/ Data to be submitted by Vendor				
	Stages of Inspection				
17	W	H	H	X	FUNCTIONAL TEST FOR PIGGABILITY AS PER ONGC SPEC 2030A
18	W	W	H	X	VISUAL AND DIMENSIONAL CHECK, WEIGHT CHECK
19	W	W	H	X	MARKING, SURFACE PREPARATION AND PROTECTIVE COATING AS PER DATA SHEET
20	A	H	H	X	FINAL DOCUMENTATION REVIEW AND ISSUE OF INSPECTION RELEASE NOTE
<b>IRN FOR ISSUE BY CA/TPI/CONTRACTOR IA</b>					
21	Is	R	-	-	ISSUE OF INSPECTION RELEASE NOTE AT VENDOR'S PLACE
<b>** OTHER REQUIREMENT **</b>					
22	RW	W	H	X	CHECK PREPARATION FOR SHIPMENT

The Activities listed above are not exhaustive. Inspection of other activities shall be carried out as per requirement of the FS.

Legend & Notes : Explained Separately.

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Sl. No.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
1	DECK Crane (PEDESTAL)	ODS/MECH/IRT/01	A	0	08/03/2016
2	Air/HC Gas Driven Reciprocating Pump	ODS/MECH/IRT/02	B	0	08/03/2016
3	CODED VESSELS	ODS/MECH/IRT/03	A	0	08/03/2016
4	Instrument and Utility Gas System	ODS/MECH/IRT/04	B	0	08/03/2016
5	Material Handling Equipment (Chain Pulley Block)	ODS/MECH/IRT/5	B	0	08/03/2016
6	Shell & Tube Heat Exchanger	ODS/MECH/IRT/6	A	0	08/03/2016
7	Primary & Secondary FG Skid	ODS/MECH/IRT/08	A	0	08/03/2016
8	HVAC System	ODS/MECH/IRT/09	A	0	08/03/2016
9	Sewage Treatment Package	ODS/MECH/IRT/10	B	0	08/03/2016
10	Utility Water Pump (Submersible)	ODS/MECH/IRT/11	A	0	08/03/2016
11	Rotary Gear Pump	ODS/MECH/IRT/12	B	0	08/03/2016
12	Fire Water Pump	ODS/MECH/IRT/13	A	0	08/03/2016
13	AIR DRYER	ODS/MECH/IRT/14-B	B	0	08/03/2016
14	Instrument and Utility Air System	MR/ODS/IRT/14	A	0	08/03/2016
15	Starting Air Compressor Package	ODS/MECH/IRT/14A	A	0	08/03/2016
16	Sea Water Lift Pump	ODS/MECH/IRT/15	A	0	08/03/2016

Prepared / Revised By	Reviewed By	Approved By

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Sl. No.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
17	PRODUCED WATER CONDITIONING SYSTEM	ODS/MECH/IRT/16	A	0	08/03/2016
18	Emergency Generator	ODS/MECH/IRT/17	A	0	08/03/2016
19	Chlorinator	ODS/MECH/IRT/18	B	0	08/03/2016
20	Sea Water Fine Filters skids	ODS/MECH/IRT/19	B	0	08/03/2016
21	De Oxygenation System	ODS/MECH/IRT/20	A	0	08/03/2016
22	Centrifugal Pump (MIP & MOL)	ODS/MECH/IRT/21	A	0	08/03/2016
23	SUMP CASSION WITH BLOW CASE	ODS/MECH/IRT/22	B	0	08/03/2016
24	CHEMICAL STORAGE & INJECTION SYSTEM	ODS/MEC/IRT/23	B	0	08/03/2016
25	Centrifugal Pump (Sump Pump)	ODS/MECH/IRT/24	B	0	08/03/2016
26	Positive Displacement Pump- Controlled Volume (Motor Driven)	ODS/MECH/IRT/25	B	0	08/03/2016
27	Reciprocating Plunger Pump	ODS/MECH/IRT/27	A	0	08/03/2016
28	Item : Vacuum Pump	ODS/MECH/IRT/28	B	0	08/03/2016
29	Motor Driven Process Gas Compressor	ODS/MECH/IRT/29-M	A	0	08/03/2016
30	Turbine Driven Process Gas Compressor	ODS/MECH/IRT/29	A	0	08/03/2016
31	Gas Turbine Generator	ODS/MECH/IRT/30	A	0	08/03/2016
32	DG Set (Portable)	ODS/MECH/IRT/31	B	0	08/03/2016

Prepared / Revised By	Reviewed By	Approved By

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Sl. No.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
33	CO2 Snuffing System	ODS/MECH/IRT/32	B	0	08/03/2016
34	Air Cooled Heat Exchanger	ODS/MECH/IRT/33	A	0	08/03/2016
35	WASTE HEAT RECOVERY UNIT	ODS/MECH/IRT/34	A	0	08/03/2016
36	Nitrogen Generator Package	ODS/MECH/IRT/36	A	0	08/03/2016
37	Water Maker System	ODS/MECH/IRT/38	B	0	08/03/2016
38	GDU System	ODS/MECH/IRT/40	A	0	08/03/2016
39	Gas Sweetening & Regeneration Package	ODS/MECH/IRT/41	A	0	08/03/2016
40	HP & LP Flare Tip	ODS/MECH/IRT/42	B	0	08/03/2016
41	Travelling Bridge Crane / Electric Hoist	ODS/MECH/IRT/43	B	0	08/03/2016
42	Jet Fuel System & ATF Pump	ODS/MECH/IRT/44	A	0	08/03/2016
43	Diesel Centrifuge	ODS/MECH/IRT/45	B	0	08/03/2016
44	Monorail (Electric) Hoist	ODS/MECH/IRT/46	B	0	08/03/2016
45	FILTERS	ODS/MECH/IRT/47	A	0	08/03/2016
46	Air/Natural Gas Operated Double Diaphragm Pump	ODS/MECH/IRT/48	B	0	08/03/2016
47	LP Gas Compressor Package/Screw Gas compressor	ODS/MECH/IRT/49	A	0	08/03/2016
48	Hot Oil Pump	ODS/MECH/IRT/50	A	0	08/03/2016

Prepared / Revised By	Reviewed By	Approved By

FORMAT No. ODS/SOF/047A	Ref. PROCEDURE No. ODS/SOP/023	ISSUE No. 01	REV. No. 00	REV. DATE: 08.03.2016
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Offshore Design Section  
Engineering Services  
ISO – 9001:2008

**LIST OF  
IRTs ( INSPECTION  
REQUIREMENT TABLE) &  
APPROVAL**

Date 20.04.2016


Discipline Mechanical

Page: 4 OF 4

Sl. No.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
49	Reciprocating Gas Compressor Package/Fuel Gas compressor	ODS/MECH/IRT/51	A	0	08/03/2016
50	Centrifugal Pumps (Pot Water, Cooling Water, etc.)	ODS/MECH/IRT/52	B	0	08/03/2016
51	DCP Skid	ODS/MECH/IRT/Safety 01	B	0	08/03/2016
52	Fire Fighting Equipment	ODS/MECH/IRT/Safety 02	C	0	08/03/2016
53	Life Saving Equipment	ODS/MECH/IRT/Safety 03	B	0	08/03/2016
54	Breathing Air Compressor Package	ODS/MECH/IRT/Safety 04	B	0	08/03/2016
55	SURVIVAL CRAFT	ODS/MECH/IRT/ Safety 08	B	0	08/03/2016
56	ITEM : Clean Agent System	ODS/MECH/IRT/Safety 09	B	0	08/03/2016
57	H2S Capsule/ Safe Shelter	ODS/MECH/IRT/Safety 10	B	0	08/03/2016

Prepared / Revised By	Reviewed By	Approved By

FORMAT No. ODS/SOF/047A	Ref. PROCEDURE No. ODS/SOP/023	ISSUE No. 01	REV. No. 00	REV. DATE: 08.03.2016
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/01
						Rev No	0
						Discipline	Mechanical
Item: DECK Crane (PEDESTAL)			Inspection Category : A				
ACTIVITY	1. Inspection by ONGC / Certification Agency CA.						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. STAGES OF INSPECTION INVOLVED.						
No							
1	I	--	H	H	---	Pre-Inspection Meeting (as required)	
2	A	---	A	H	X	Approval of Inspection and test plan (ITP) of vendor	
3	A	-	R	H	X	FAT & SAT Procedure	
						Skid / Base Frame / Boom	
4	A	---	R	H	X	WPS, PQR & WPQ (as applicable) as per ONGC Spec.	
5	RW	---	RW	H	X	Weld inspection and NDT (As per approved Procedures and ITP)	
6	W	---	W	W	X	Final Visual and dimensional check	
						Engine Performance and Functional Test	
7	W	---	W	W	X	Fuel Consumption and Governing test as per data sheet	
8	W	---	W	W	X	Brake Horsepower Testing (---Kw-----rpm) at 10% overload test for One hour as per spec.	
9	W	---	W	W	X	Noise level Test (Engine with Crane)	
10	W	---	W	W	X	Vibration Test	
11	W	---	W	W	X	Engine Functional Test-Full load test for four hour as per spec.	
12	W	---	W	W	X	Engine instrumentation Checks as per spec.	
						Inspection of BOI's (Bought Out Items)	
13	RW	---	RW	W	X	Controls, Indicators, Alarms and Instrumentation in operator's cabin as per the specification and data sheet	
14	RW	---	RW	W	X	Installation and testing of all safety / protective devices like Boom stop, Hoist travel stop, Limit switches, Warning lights etc.	
15	RW	---	RW	W	X	Installation of all access platforms, Ladders, gratings, safety insulation of hot exhaust pipes, Acoustic housing etc.	
16	RW	---	RW	W	X	Wire rope and Sling inspection for kinking ,cut, broken or crushing of strands etc. including SWL(Safe Working Load)	
17	W	---	W	H	X	Wire rope braking strength test as per spec.	
						Deck Crane Performance and functional Tests as per spec.	

18	W	---	W	W	X	Engine starting - Pneumatic and Hydraulic.
19	W	---	W	W	X	360 degree rotation @ full load at specified RPM.
20	W	---	W	W	X	Full functional test ( i.e. hoisting-anti two block test, luffing, slewing and swinging speed test, wire rope reaving (high and low speed on Rope drum etc.)
21	W	---	W	W	X	Static load test and over load test at 1.33 times safe working load, followed by NDE of critical components for damage check.
22	W	---	W	W	X	Dynamic Running test
23	W	---	W	W	X	Control Panel Running Test, Control panel functional test.
24	W	---	R	W	X	Heave Compensation test (if stated in data sheet)- Motion Compensator.
25	RW	---	W	H	X	Main and Auxiliary Hook assembly-Proof Load Testing and double SWL.
26	W	---	RW	W	X	Strain gauge Test (API-2C) if applicable
27	R		R	R	X	Calibration Report of Load Sensor from approved / recognized Laboratory
						<b>Type Test Certification</b>
28	R	---	R	R	X	Area Classification and IP certification of all instrumentation items and panels by recognized Third party Lab
29	R	---	R	R	X	Engine type approval record from EEMUA if applicable.
						<b>Surface preparation &amp; Painting / Coating</b>
30	RW	---	RW	W	X	Surface preparation
31	RW	---	RW	W	X	Painting / coating inspection as per ONGC spec.
						<b>Other requirements</b>
32	R	---	R	R	X	Review of final documentation to comply with specification requirements(MDR-Mfg. Data Records)
33	W	---	W	W	X	Final Packing inspection for completeness during / after packing -tagging, preservation, including spares.
34	R	---	R	R	X	Wire rope Test Documentation, Covering break test as per API-9A as applicable.
35	R	-	R	R	X	Pendent Test certificates
						<b>DECK CRANE ASSEMBLY &amp; FINAL TESTING</b>
36	W	---	W	W		Main hoist and Aux. Hoist & speed test at various Radii as per load chart
37	W	---	W	W		Speed Test for Main and Aux Hoist & Swing
38	W	---	W	W		Functional & Overload Testing
39	R	---	R	H		Inspection Record Book
40	Is	---	R	H		Issue of Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
41	W	W	-		X	Verification of items as per IRN
42	W	W			X	IMIR/GIIR on the basis of IRN
43	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.


**\*Refer Applicable Electrical IRT for Electrical Equipments/Items.**

**EGENDS & NOTES : Explained Separately**

FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
ODS/SOF/004A	ODS/SOP/023	01	00	08.03.2016


 <b>ओएनजीसी</b> <b>ONGC</b>	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>					<b>INSPECTION REQUIREMENT TABLE</b>					<b>IRT No.</b>		ODS/MECH/IRT/02			
											<b>Rev No.</b>		0			
											<b>Discipline</b>		Mechanical			
Item : Air/HC Gas Driven Reciprocating Pump										Inspection Category : "B"						
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>															
	<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>															
	<b>3. Inspection by Contractor / Contractor's Inspection Agency (IA)</b>															
	<b>4. Inspection by Vendor/ Sub Vendor</b>															
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>															
	<b>6. Stage of Inspection Involved</b>															
											<b>General &amp; documents- For Review/Approval /Information</b>					
1	-	-	W	H	-	Pre-inspection Meeting/Expiditing										
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan										
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument caibration,Test Certificates of Bought out Items ((Pump Seal System, Pulsation Dampener, valves and other miscellaneous items), Test Records and Compliance to other PS Requirements										
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)										
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure										
											<b>Inspection &amp; Testing- For Witness/ Random Witness</b>					
6	RW		W	H	X	Hydrostatic Testing										
7	W	-	W	H	X	Run Test, Performance Test on complete unit package (including Pressure Relief Valve Check),NPSH Test, Noise Test , Vibration Test as applicable										
8	RW	-	W	H	X	Final Visual, Dimensional Check of Individual Components, Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.										
9	R	-	R	H	X	Test Result correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)										
10	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)										
11	RW	-	RW	H	X	Final skid inspection including visual, dimensional check, completeness after packing (including spares), name plate varification, tagging, preservation and preparation for shipping										
12	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note										
											<b>IMIR/GIIR at Yard/Offshore</b>					

13	W	W	-		X	Verification of items as per IRN
14	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/03/Coded Vessel
						Rev No.	0
						Discipline	Mechanical
ITEM : CODED VESSELS						INSPECTION CATEGORY.: 'A	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3.Inspection by EPC / EPC Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						General & documents- For Review/Approval /Information	
1	A	-	A	H	X	Inspection & Test plan	
2	A	-	R	H	X	NDT Procedures, Heat treatment procedure, Surface Preparation and protective coating procedure, Hydrotest procedure, Pneumatic test procedure, Pickling and Passivation procedure, Cladding procedure, WPS-PQR,WPQT	
3	R	-	R	H	X	Material test certificates and traceability records as applicable.	
		-			X	Inspection & Testing- For Witness/ Random Witness	
4	RW	-	W	H	X	Raw material identification. (Pressure parts)	
5	RW	-	R	H	X	Raw material identification. (Non pressure parts)	
5	RW	-	RW	H	X	Stage Inspection like fit up, welding & NDT etc. (As applicable)	
6	R	-	R	H	X	PWHT records & charts as applicable.	
7	RW	-	RW	H	X	NDE requirements (RT/UT/MPI/DPT - as applicable).(*100% Review of RT films )	
8	W	-	W	H	X	Surface visual (internal & external) inspection, dimension check and mechanical clearance.	
9	W	-	W	H	X	Final visual and dimensional inspection.	
10	RW	-	W	H	X	Hydrostatic pressure test.	
11	RW	-	R	H	X	Pneumatic test of R.F Pads (as applicable).	
12	RW	-	R	H	X	Pickling and Passivation of Corrosion resistant alloy.	
13	RW	-	RW	H	X	Surface preparation and protective coating (final DFT check and visual) as applicable.	
14	RW	-	RW	H	X	Inspection of lining on internal surface if applicable.	
15	RW	-	RW	H	X	Inspection of internals (fabrication of internals, fitment and alignment check), if any	
16	W	-	W	H	X	ASME code stamping along with applicable data reports (MDR).	
17	Is	-	R	H	X	Final documentation review and issue of inspection release note	




						IMIR/GIIR at Yard/Offshore
18	W	W	-		X	Verification of items as per IRN
19	W	W			X	IMIR/GIIR on the basis of IRN
*Refer Applicable Electrical IRT for Electrical Equipments/Items.						
LEGENDS & NOTES : Explained Separately						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.      REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/04
						Rev No	0
						Discipline	Mechanical
Item : Instrument and Utility Gas System				Inspection Category : "B"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.						
	6. Stage of Inspection Involved						
General & documents- For Review/Approval /Information							
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	FAT & SAT Procedure	
3	A	-	R	H	X	WPS, PQR and Repair Procedure (As applicable)	
4	R	-	R	H	X	Material Identification, Review of Material Test Certificates & Traceability Records. Additional Testing as per ONGC Specification, If any	
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area classification and Environmental Protection for Instrumentation Items	
						Pressure Vessel's, Associated Gas Cooler, Utility Gas Heater, Knock Out Drum, Double Pipe Heat Exchanger, Instrument Gas Receiver, Utility Gas Filter Separator, H2S & CO2 Absorber and all Interconnecting Piping). All requirements of ASME Inspector (as applicable) shall be met	
6	R	-	R	H	X	Material Identification and MTC Review for Major Components	
7	R	-	R	H	X	NDT (As applicable) (100% Review of RT Films by IA) and Heat Treatment Chart Review	
8	W	-	W	H	X	Hydrostatic Test / Pneumatic Test (As applicable)	
9	W	-	W	H	X	Final Visual & Dimensional Check and Mechanical Clearance	
						All Instrumentation Items	
10	R	-	R	H	X	Manufacturer's TC / Certificate of Conformity Review (As applicable) Calibration certificates for instruments. Instruments as per approved Instrument data sheets. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable).	
11	R	-	R	H	X	Functional / Routine / Type / Calibration Test report for Gauges, Indicators, Flow, Instrument Transmitters etc. (As applicable) Control panel functional test report & Logic tests report for the equipment package during FAT	
						Structural Skid	
12	R	-	R	H	X	Review of MTCs for Major Structural Items	

13	RW	-	RW	H	X	Final Visual and Dimensional Inspection
						<b>Inspection &amp; Testing- For Witness/ Random Witness Complete Skid assembly including Piping</b>
14	W	-	W	H	X	Verify / Check All Components as per P&ID
15	W	-	W	H	X	Check All Connecting Piping as per P&ID
16	W	-	W	H	X	Final Visual and Dimensional Check of Complete Assembly
17	W	-	W	H	X	Factory Acceptance Test (FAT)
18	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
19	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
20	W	W	-	H	X	Verification of items as per IRN
21	W	W			X	IMIR/GIIR on the basis of IRN
22	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:	
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	Offshore Design Section Engineering Services (ISO – 9001:2008)					INSPECTION REQUIREMENT TABLE					IRT No.	ODS/MECH/IRT/5	
											Rev No.	0	
											Discipline	Mechanical	
ITEM : Material Handling Equipment (chain Pulley Block)											Inspection Category : "B"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)												
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)											
			3. Inspection by EPC Inspection Agency										
				4. Inspection by Vendor / Sub Vendor									
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval								
						6. Stage of Inspection Involved							
						General & documents- For Review/Approval /Information							
1	A	-	R	H	X	Inspection and Test Plan							
2	R	-	R	H	X	Material Identification, Material Test Certificates and Traceability Records							
3	R	-	R	H	X	Certificates of Type Tests and Examination as per BS 3243 & IS 3832							
		-			X	Inspection & Testing- For Witness/ Random Witness							
4	RW		W	H	X	Load Testing as per Code and Specification							
5	RW	-	RW	H	X	NDT (As applicable)							
6	RW	-	RW	H	X	Protective Coating (Final DFT & Visual Check) as per ONGC Specification 2005							
7	RW	-	RW	H	X	Final Visual, Dimensional, Assembly Check							
8	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note							
						IMIR/GIIR at Yard/Offshore							
9	W	W	-		X	Verification of items as per IRN							
10	W	W			X	IMIR/GIIR on the basis of IRN							
LEGENDS & NOTES : Explained Separately													
FORMAT No.			Ref. PROCEDURE No.		ISSUE No.			REV. No.		REV. DATE:			
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	Offshore Design Section Engineering Services (ISO – 9001:2008)					INSPECTION REQUIREMENT TABLE					IRT No	ODS/MECH/IRT/6
											Rev No.	0
											Discipline	Mechanical
Item : Shell & Tube Heat Exchanger						Inspection Category : "A"						
Activity No.	1. Inspection by ONGC / Certification Agency (CA)											
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)										
			3. Inspection by EPC / EPC's Inspection Agency (IA)									
				4. Inspection by Vendor/ Sub Vendor								
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approve							
						6. Stage of Inspection Involved						
						General & documents- For Review/Approval /Information						
1	A	-	R	H	X	Inspection and Test Plan						
2	A	-	R	H	X	Hydro Test Procedure, Pneumatic Test Procedure, FAT Procedure (As applicable)						
3	A	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, Welding Procedure (As applicable)						
4	A	-	R	H	X	WPS / PQR/WPQ for heat exchanger						
5	R	-	R	H	X	Material Identification, Review of MTCs and Traceability Records (For Pressure Parts & Non Pressure Parts)						
						Inspection & Testing						
6	W	-	W	H	X	Mock-Up Test (Tube to Tube Sheet Joint)						
7	W	-	R	H	X	Non Destructive Testing (As applicable)						
8	W	-	W	H	X	Pickling and Passivation, as applicable						
9	W	-	W	H	X	Pneumatic Test, Hydro Static Test (As applicable)						
10	RW	-	W	H	X	Protective Coating (Final DFT and Visual Check)						
11	W	-	W	W	X	Tube bundle insertion						
12	RW	-	RW*	H	X	Inspection of Tube to Tube Sheet Joint (*100% DPT of Tube to Tube Sheet Joint, As applicable), Root and Final Pass DPT. Air Test (As applicable)						
13	R	-	R/W	H	X	Review of PWHT Charts and Hardness (As applicable)						
14	W		W	H	X	Heat Exchanger internal inspection before box up for cleanliness and completeness.						
15	W	-	W	H	X	Partition Plate Check after Welding						
16	W		R/W	W	X	Lifting arrangement like eye / trunion and DP test of lifting device attachment welds						
17	W		W	W	X	Halide test after Tube Expansion (if specified)						
18	W	-	W	H	X	Flushing and Drying of Tubes						

19	W	-	W	W	X	Final visual and Dimensional inspection
20	W		W	R	X	Code stamping (ASME or others as specified in project specification)
21	RW		RW	W	X	Surface preparation after grit blasting
22	R/W		R/W	W	X	Painting / coating inspection as per ONGC spec 2005
23	R		R	R	X	Certification by Authorized Inspector (if applicable)
24	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
25	W		W	W	X	Final packing inspection for completeness during / after packing - tagging, preservation, packing.
	<b>IMIR/GIIR at Yard/Offshore</b>					
13	W	W	-		X	Verification of items as per IRN
14	W	W			X	IMIR/GIIR on the basis of IRN
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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		Offshore Design Section Engineering Services (ISO – 9001:2008)				INSPECTION REQUIREMENT TABLE		IRT No		ODS/MECH/IRT/08	
								Rev No		0	
								Discipline		Mechanical	
Item : Primary & Secondary FG Skid						Inspection Category : "A"					
Activity No.	1. Inspection by ONGC / Certification Agency (CA)										
		2. Inspection by ONGC / Third Party Inspection (TPI)									
			3. Inspection by EPC / EPC Inspection Agency (IA)								
				4. Inspection by Vendor/ Sub Vendor							
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
						6. Stage of Inspection Involved					
						General & documents- For Review/Approval /Information					
1	A	-	R	H	x	Inspection and Test Plan					
2	A	-	R	H	x	Hydrostatic Test Procedure, FAT Procedure (As applicable)					
3	A	-	R	H	x	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, Welding Procedure (As applicable)					
4	R	-	R	H	x	Material Test Certificates, Corrosion Test / Additional Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates for Bought Out Items, Test Records and Compliance to other PS Requirements (As applicable)					
						Pressure Vessels					
5	RW	-	RW	H	x	Raw Material Identification and MTC Review and Traceability Records					
6	R	-	R	H	x	WPS,PQR,NDE and Painting Procedures					
7	RW	-	RW	H	x	NDE Requirements (As applicable) (*100% RT Films Review by LIA) and PWHT Chart Review					
8	W	-	W	H	x	Visual Inspection of Internal and External Surfaces and Dimensional Check					
9	W	-	W	H	x	Hydrostatic Pressure Test (As applicable)					
10	W	-	W	H	x	Pneumatic Test of RF Pads (As applicable)					
11	R	-	R	H	x	Pickling and Passivation of Corrosion Resistance Alloy (CRA), as applicable					
12	R	-	R	H	x	ASME Code Stamping along with Applicable Data Reports					
13	RW	-	RW	H	x	Protective Coating (Final DFT and Visual Check)					
14	Is	-	Is	H	x	Documentation Review and Issue of Inspection Release Note					
						Structural Skid					
15	R	-	R	H	x	Review of MTC's for All Structural Items					
16	A	-	R	H	x	WPS & PQR					
17	RW	-	RW	H	x	NDT, as applicable (*100% RT Film Review by LIA)					
18	W	-	RW	H	x	Final Visual and Dimensional Check					



						<b>Instrumentation (Including Valves) Items</b>
19	R	-	R	H	x	Material Test Certificates
20	R	-	R	H	x	NDE Requirements (As applicable)
21	W	-	W	H	x	Final Visual, Dimensional, Workmanship, Name Plate, Painting Inspection. Control panel functional test & Logic tests for the equipment package during FAT
22	RW	-	RW	H	x	Hydrostatic Testing, Seat-Leakage Test, Pneumatic Test (As applicable)
23	RW	-	RW	H	x	Functional, Calibration Checks for Instrumentation Items along with Accessories Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
24	R	-	R	H	x	Test Report Review of Pressure Relief Valves, Enclosure-Degree of Protection Test Certificate
25	R	-	R	H	x	Hardness, Micro Test for Sour Service (As applicable)
26	RW	-	W	H	x	Safety Interlock Simulation Checks
						<b>Piping</b>
27	R	-	RW	H	x	Hydrostatic Test for Body and Seat of Valves, Pneumatic Test for Seat of Valves
28	R	-	RW	H	x	Hydrostatic Test for All Piping Spools
29	R	-	R	H	x	NDT, as applicable (*100% Review for RT Films by LIA)
30	R	-	R	H	x	Review of MTC's / Test Reports of All Piping Items
						<b>Complete Skid Assembly</b>
31	W	-	W	H	x	Verify / Check All Components as per P&ID
32	W	-	W	H	x	Check All Connecting Piping as per P&ID
33	W	-	W	H	x	Final Visual and Dimensional Check of Complete Assembly
34	RW	-	RW	H	x	Protective Coating (Final DFT and Visual Check)
35	Is	-	R	H	x	Final Documentation Review and Issue of Inspection Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
36	W	W	-		X	Verification of items as per IRN
37	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/09
						Rev No	0
						Discipline	Mechanical
ITEM : HVAC System						Inspection Category : "A"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)					
			3. Inspection by LTHE / LTHE's Inspection Agency (IA)				
				4. Inspection by Vendor / Sub Vendor			
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6. Stage of Inspection Involved	
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	FAT & SAT Procedure of complete Unit HVAC	
						HVAC Control Panel / Field Control Devices	
3	RW	-	RW	H	X	Visual, Dimensional, Name Plate, Cable Entry, Wiring, Earthing Check	
4	RW	-	RW	H	X	Wiring Check as per AFC Schematic Drawings	
5	RW	-	W	H	X	IR Test before and after HV Test	
6	RW	-	W	H	X	Operation check of PLC Control Logic by Simulating Actual Operating Conditions, as applicable including Redundancy Check and Functional Check Control panel functional test & Logic tests for the equipment package during FAT.	
7	R	-	R	H	X	Test Reports / Certificates for Major Components	
8	R	-	R	H	X	Certificate for Specified Enclosure Class of Panel. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Calibration certificates for instruments, Instruments as per approved Instrument data sheets.	
9	RW	-	RW	H	X	Protective Coating check	
10	R	-	H	H	X	Documentation Review and Issue of Inspection Release Note	
						Chillers / Air Handling Unit / Exhaust Fan	
11	W	-	W	H	X	Final Visual & Dimensional check for Skid Assembly	
12	W	-	W	H	X	Mechanical Run Test for Chiller & AHU	
13	W	-	W	H	X	Leak / Pressure Test for Chiller (Condenser & Evaporator)	
14	R	-	R	H	X	Dynamic Balancing Records of Fan Blowers	
15	RW	-	RW	H	X	Air Filter Test	
16	R/W	-	R/W	H	X	Material Identification and Test Certificates Review	
17	RW	-	RW	H	X	Protective Coating Check	

18	Is	-	R	H	X	Documentation Review and Issue of Inspection Release Note
						<b>Chilled Water Pump</b>
19	RW	-	W	H	X	Visual Check of Major Components
20	RW	-	W	H	X	Hydrostatic Testing of Pump Casing
21	RW	-	W	H	X	Dynamic Balancing of Rotor
22	W	-	W	H	X	Performance Test at Rated RPM
23	RW	-	RW	H	X	NDT of Pump Components (As applicable)
24	R	-	R	H	X	Manufacturer's Test Certificates for Major Pump Components
25	R	-	R	H	X	Routine & Type Test Certificates for Motor
26	Is	-	Is	H	X	Documentation Review and Issue of Inspection Release Note
						<b>Fire / Motorized Control / Back Draft / Pressure Relief Dampers, Duct Heaters</b>
27	R	-	W	H	X	Final Visual & Dimensional Check
28	R	-	R	H	X	Material Identification & Test Certificates
29	Is	-	R	H	X	Documentation Review and Issue of Inspection Release Note
						<b>Louvers / Diffusers / Grilles / Sound Attenuator / Disc Valves / Coalescer Filters / Dosing Pot / Expansion Tanks / Humidifiers / Pipes / Duct Insulation / Fosters / Canvas / Tapes</b>
30	R	-	R	H	X	Material Identification & Test Certificates
31	W	-	W	H	X	Final Visual & Dimensional Check
32	R	-	R	H	X	Certificates for Specified Hazardous Area Class (As applicable)
33	Is	-	Is	H	X	Documentation Review and Issue of Inspection Release Note
						<b>HVAC System (Complete)</b>
34	Rw	-	W	H	X	Final Visual, Dimensional, Finishing of Complete HVAC System
35	W	-	W	H	X	FAT / SAT for the HVAC System
36	Is	-	Is	H	X	Final Documentation Review and Issue of Inspection Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
37	W	W	-		X	Verification of items as per IRN
38	W	W			X	IMIR/GIIR on the basis of IRN
39	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>			<b>INSPECTION REQUIREMENT TABLE</b>		<b>IRT No</b>	ODS/MECH/IRT/10
							<b>Rev No.</b>	0
							<b>Discipline</b>	Mechanical
ITEM : Sewage Treatment Package					Inspection Category : "B"			
Activity No.	<b>1. Inspection by ONGC / Certification Agency (CA)</b>							
		<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>						
			<b>3. Inspection by EPC / EPC Inspection Agency (IA)</b>					
				<b>4. Inspection by Vendor / Sub Vendor</b>				
					<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>			
						<b>6. Stage of Inspection Involved</b>		
						<b>General &amp; documents- For Review/Approval /Information</b>		
1	A	-	R	H	x	Inspection and Test Plan & FAT Procedure		
2	R	-	R	H	x	Material Identification, Material Test Certificates and Traceability Records		
3	A	-	R	H	x	WPS, PQR		
7	R	-	R	H	x	Test Certificates for Components, viz. Moulded Case Circuit Breaker (MCCB), Contactors etc.		
9	R	-	R	H	x	Type Test Reports for Enclosure Protection and Hazardous Area Classification		
						<b>Inspection &amp; Testing- For Witness/ Random Witness</b>		
6	RW	-	RW	H	x	Check of Accessories and Spares		
	R/RW	-	RW	H	x	NDT Reports		
5	RW	-	W	H	x	Hydrostatic Testing / Water Fill Test (As applicable)		
8	RW	-	W	H	x	Check Functional, Simulation & Calibration Test for Instrumentation & Control Panels. Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT		
10	W	-	W	H	x	Final Visual & Dimensional Check		
11	W	-	W	H	x	Final Performance Test for Whole Unit in Assembled Condition		
12	Rw	-	Rw	H	x	Protective Coating (Final DFT and Visual Check)		
13	Is	-	R	H	x	Final Documentation Review and Issue of Inspection Release Note		
						<b>IMIR/GIIR at Yard/Offshore</b>		
14	W	W	-		X	Verification of items as per IRN		
15	W	W			X	IMIR/GIIR on the basis of IRN		
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>								

**LEGENDS & NOTES : Explained Separately**

FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/11
						Rev No.	0
						Discipline	Mechanical
Item : Utility Water Pump (Submergible)					Inspection Category : "A"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
	General & documents- For Review/Approval /Information						
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	A	-	R	H	X	Tests/FAT Procedure including Hydrostatic & Pneumatic Test Procedure	
4	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
5	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
6	A		R	H	X	FAT Procedure & Hydrostatic Test Procedure	
						Inspection & Testing-	
7	W		W	H	X	Stage Inspection eg. Fit Up, Wel, Hydrotest Etc. (as Applicable)	
						Pump	
8	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
9	W	-	W	H	X	Rotor Static/ Dynamic Balancing	
10	W	-	W	H	X	Hydrostatic Test of Casing Discharge Header & Column Pipes	
11	R/RW	-	R/RW	H	X	NDT as applicable	
12	W	-	W	H	X	Mechanical Run Test	
13	W	-	W	H	X	Performance Test at Shut off, at Minimum Flow Rate, at Rated Flow and at 125% Capacity, NPSH Test (as applicable)	
14	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
15	W		W			Strip Down test for checking any abnormal rubbing or wear	
						Instrumentation and Control	
16	W	-	W	H	X	Final Visual, Dimensional Check	

17	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports, Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
18	RW	-	RW	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check. Control panel functional test & Logic tests for the equipment package during FAT
						<b>Complete Skid Assembly (Column pipe, Pump etc)</b>
19	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
20	R/RW		R/RW	H	X	NDE (RT, UT, MPI, DPI) Report /test as applicable
21	R		R	H	X	Heat treatment report as applicable
22	R	-	R	H	X	Hyrotest report as applicable
24	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
24	W	-	W	H	X	Preservation, Packing and preparation for shipping
25	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
26	W	W			X	Verification of items as per IRN
27	W	W	-		X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016



 <div>ओएनजीसी ONGC</div>	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No	ODS/MECH/IRT/12
						Rev NO.	0
						Discipline	Mechanical
Item : Rotary Gear Pump			Inspection Category : "B"				
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						General & documents- For Review/Approval /Information	
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument caibration,Test Certificates of Bought out Items , Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure	
						Inspection & Testing- For Witness/ Random Witness	
6	W	-	W	H	X	Run Test, Performance Test on complete unit package (including Pressure Relief Valve Check), NPSH Test, Noise Test , Vibration Test as applicable	
7	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
8	R	-	R	H	X	Test Result Report for correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)	
9	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)	
10	W	-	W	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate varification, tagging, preservation and preparation for shipping	
11	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note	
						IMIR/GIIR at Yard/Offshore	
12	W	W	-		X	Verification of items as per IRN	
13	W	W			X	IMIR/GIIR on the basis of IRN	

**\*Refer Applicable Electrical IRT for Electrical Equipments/Items**


**LEGENDS & NOTES : Explained Separately**

FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
ODS/SOF/004A	ODS/SOP/023	01	00	08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/13
						Rev No	0
						Discipline	Mechanical
Item : Fire Water Pump					Inspection Category : "A"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						General & documents- For Review/Approval /Information	
	-	-	W	H	-	Pre-inspection Meeting/Expediting	
1	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
2	A	-	R	H	X	FAT & SAT Procedure, Hydrostatic & Pneumatic Test Procedure	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
						Vertical Turbine Pump	
5	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
6	R	-	R	H	X	Impeller Dynamic Balancing Report	
7	RW	-	W	H	X	Hydrostatic Test of Casing Discharge Header & Column Pipes	
8	R/RW	-	R/RW	H	X	NDT Report/test as Applicable	
9	W	-	W	H	X	Mechanical Run Test	
10	W	-	W	H	X	NPSH Test as applicable	
11	W	-	W	H	X	Noise & Vibration Test	
12	W	-	W	H	X	Performance Test at Shut off, at Minimum Flow Rate, at Rated Flow and at 125% Capacity	
13	W	-	W	H	X	Strip Down Test for Bowl Assembly	
14	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
						Skid Structure	
15	R	-	R	H		Material Test Certificate and identification & Records	
16	R	-	R	H		Verification of availability of WPS, PQR, WQR (as applicable) and NDT Reports	


17	RW	-	RW	H		Protective coating as per Specification
						<b>Diesel / Day Tank</b>
18	R	-	R	H	X	Material Identification, Material Test Certificates & Records
19	R	-	R	H	X	Verification of availability of WPS, PQR, WQR (as applicable) and NDT
20	RW	-	RW	H	X	Protective coating as per Specification
21	W	-	W	H	X	Final Visual and Dimensional Check
22	RW	-	RW	H	X	Leak Test by Water Filling
						<b>Diesel Engine</b>
23	W	-	W	H	X	Visual, Dimensional & Alignment Check
24	RW	-	RW	H	X	Hydrostatic Test for all Components - Cooling Water, Jacket, Cylinder Block, Radiator, etc.
25	W	-	W	H	X	Performance Test
26	W		W	H	X	Load Test , 10% overload test for 1 hour
27	W	-	W	H	X	Check for Emergency Shut Down
28	W	-	W	H	X	Noise & Vibration Level Check
						<b>Gear Drive</b>
29	R	-	R	H	X	Material Test Certificate & Records
30	W	-	W	H	X	Check Final Visual, Dimensional Assembly
31	W	-	W	H	X	Hardness Check, Contact Test
32	W	-	W	H	X	Full Load & Full Speed Test
						<b>Instrumentation and Control</b>
33	W	-	W	H	X	Final Visual, Dimensional Check.
34	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable).
35	R/RW	-	R/RW	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check, Calibration certificates for instruments. Instruments as per approved Instrument data sheets
36	W	-	W	H	X	Engine Mounting and Alignment Check
						<b>Complete Skid Assembly (Pump, Gear Drive, Engine)</b>
37	W	-	W	H	X	Mechanical Run Test & Factory Acceptance Test (String Test), Control panel functional test & Logic tests for the equipment package during FAT.
38	W	-	W	H	X	Noise & Vibration Tests
39	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
40	W	-	W	H	X	Preservation, Packing and preparation for shipping
41	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note

IMIR/GIIR at Yard/Offshore					
42	W	W	-		X Verification of items as per IRN
43	W	W			X IMIR/GIIR on the basis of IRN
44	W	W		H	X SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>					
<b>LEGENDS &amp; NOTES : Explained Separately</b>					
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE				IRT No	MR/ODS/IRT/14
							Rev No.	0
							Discipline	Mechanical
Item : Instrument and Utility Air System						Inspection Category : "A"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)							
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
			3. Inspection by EPC's Inspection Agency (IA)					
				4. Inspection by Vendor/ Sub Vendor				
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval			
						6. Stage of Inspection Involved		
1	A	-	R	H	X	Inspection and Test Plan		
2	A	-	R	H	X	FAT & SAT Procedure		
3	A	-	R	H	X	WPS, PQR and Repair Procedure (As applicable) & NDT Proc.		
4	R	-	R	H	X	Material Identification, Review of Material Test Certificates & Traceability Records. Additional Testing as per ONGC Specification, If any		
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area classification and Environmental Protection for Instrumentation Items		
						Screw Compressor		
6	R	-	R	H	X	Material Identification and MTC Review for Major Compressor Components		
7	W	-	W	H	X	Hydrostatic Test (As applicable)		
8	W	-	W	H	X	Performance Test of the Compressor including Load Test as per Approved Procedure		
9	W	-	W	H	X	Noise and Vibration Level Check		
10	RW	-	RW	H	X	Protective Coating Inspection (Final DFT and Visual Check)		
						Pressure Vessels (Inter stage Receivers, Coolers, Air Pre/After Filters, Air Dryer)		
11	R	-	R	H	X	Material Identification for Pressure Parts and Review of Test Certificates		
12	R	-	R	H	X	NDT (As applicable) (*100% Review of RT Films by LIA) and Heat Treatment Chart Review		
13	W	-	W	H	X	Final Visual & Dimensional Check and Mechanical Clearance		
14	W	-	W	H	X	Hydro Test / Pneumatic Test (As applicable)		
15	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)		
						Fabrication of Spools (Connecting Piping)		
16	R	-	R	H	X	Material Identification, Review of Material Test Certificates and Records		
17	R	-	R	H	X	NDT (As applicable) (*100% Review of RT Films by LIA)		

18	RW	-	RW	H	X	Final Dimensional Inspection and Mechanical Clearance
19	RW	-	RW	H	X	Hydrostatic Test
20	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
						<b>All Instrumentation Items</b>
21	R	-	R	H	X	Manufacturer's TC / Certificate of Conformity Review (As applicable). Calibration certificates for instruments. Instruments as per approved Instrument data sheets. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable).
24	RW	-	RW	H	X	Functional / Routine / Type / Calibration Test for Gauges, Indicators, Flow, Instrument Transmitters etc. (As applicable) Control panel functional test & Logic tests for the equipment package during FAT
						<b>Structural Skid</b>
25	R	-	R	H	X	Review of MTCs for Major Structural Items
26	RW	-	RW	H	X	Final Visual and Dimensional Inspection
						<b>Complete Skid Assembly</b>
27	W	-	W	H	X	Verify / Check All Components as per P&ID
28	W	-	W	H	X	Check All Connecting Piping as per P&ID
29	W	-	W	H	X	Final Visual and Dimensional Check of Complete Assembly
30	Rw	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
31	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
32	W	W	-		X	Verification of items as per IRN
33	W	W			X	IMIR/GIIR on the basis of IRN
31	Is	-	R	H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016



	Offshore Design Section Engineering Services (ISO – 9001:2008)					INSPECTION REQUIREMENT TABLE		IRT No.	ODS/MECH/IRT/14A
								Rev No	0
								Discipline	Mechanical
ITEM : Starting Air Compressor Package						Inspection Category : "A"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)								
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
			3..Inspection by EPC / EPC's Inspection Agency (IA)						
				4. Inspection by Vendor/ Sub Vendor					
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approve				
						Stage of Inspection Involved			
						General & documents- For Review/Approval /Information			
1	A	-	R	H	X	Inspection and Test Plan			
2	A	-	R	H	X	FAT /& SAT Procedure			
3	A	-	R	H	X	WPS, PQR and Repair Procedure (As applicable) & NDT Proc			
4	R	-	R	H	X	Material Identification, Material Test Certificates / Check Test for Chemical, Mechanical and Corrosion Test as per approved PS and NACE MR-0175			
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Electrical / Instrumentation Items			
						Reciprocating Compressor			
6	R	-	R	H	X	Manufacturer's Test Certificates for Major Compressor Components listed in ITP			
7	RW	-	RW	H	X	Material Identification for Compressor Components as listed in ITP			
8	R	-	W	H	X	Water Cooler Hydrostatic Test			
9	W	-	W	H	X	Performance Test of the Compressor			
10	W	-	W	H	X	Noise and Vibration Level Check			
11	RW	-	RW	H	X	Protective Coating Inspection (Final DFT and Visual Check)			
12	Is	-	R	H	X	Final Documentation Review & Issue of Inspection Release Note			
						Diesel / Day Tank (As applicable)			
13	R		R	H	X	Material Identification, Material Test Certificates and Records			
14	W	-	W	H	X	Final Visual and Dimensional Check			
15	W	-	W	H	X	Leak Test by Water Filling			
						Diesel Engine			
16	R	-	R	H	X	Manufacturer's Test Certificates / Operational Test Certificate			
17	W	-	W	H	X	Final Visual and Dimensional Check			

						<b>All Instrumentation Items</b>
18	R	-	R	H	X	Manufacturer's TC / Certificate of Conformity Review (As applicable) Calibration certificates for instruments. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable).
19	RW	-	RW	H	X	Functional / Routine / Type / Calibration Test for Gauges, Indicators, Flow, Instrument Transmitters etc. (As applicable) Control panel functional test & Logic tests for the equipment package during FAT
						<b>Structural Skid</b>
20	R	-	R	H	X	Review of MTCs for Major Structural Items
21	W	-	W	H	X	Final Visual and Dimensional Inspection
						<b>Complete Skid Assembly</b>
22	W	-	W	H	X	Verify / Check all Components as per P&ID
23	W	-	W	H	X	Check all Connecting Piping as per P&ID
24	W	-	W	H	X	Final Visual and Dimensional Check of the Complete Assembly
25	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
26	Is	-	R	H	X	Final Documentation Review & Issue of Inspection Release Note (IRN)
						<b>IMIR/GIIR at Yard/Offshore</b>
27	W	W	-		X	Verification of items as per IRN
28	W	W			X	IMIR/GIIR on the basis of IRN
29	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/MECH/IRT/14-B
						Rev No.	0
						Discipline	Mechanical
Item: AIR DRYER				Inspection Category : B			
ACTIVITY	1. Inspection by ONGC /Certification Agency CA.						
		2. Inspection by ONGC/Third Party Inspection (TPI)					
			3. Inspection by EPC/ EPC Inspection Agency (IA)				
				4. Inspection by Vendor			
				5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.			
No						6. STAGES OF INSPECTION INVOLVED.	
1	I	--	H	H	----	Pre-Inspection Meeting (as required)	
2	A	--	R	H	X	Approval of QA Plan / Inspection and test plan (ITP) of vendor	
3	A	-	R	H	X	FAT Procedure of complete Unit	
						Before start of Fabrication	
4	A		R	H	X	Welding book and NDT scheme	
5	A	--	R	H	X	Weldling , PQR,WPS	
						Vessel/Filters/Absorbers/Moisture seperators ect	
6	R	--	R	W	X	Raw Material Identification and Marking checks (MTC)	
7	R	--	R	W	X	Weld Joint fit up inspection	
8	W	--	W	W	X	Visual and Dimensional Inspection	
9	R	--	R	R	X	Post Weld Heat treatment charts/ records (as applicable)	
10	R	--	R	R	X	NDE (RT, UT, MPI, DPT), PMI and Hardness of weld joints as per spec.	
11	R	--	R	W	X	Pneumatic test of RF Pads (if applicable)	
12	W	--	W	H	X	Hydro Test and drying of vessel	
13	W	--	W	R	X	Code Stamping (ASME or others as specified in PS)	
						Structural Steel fabrication	
14	R	--	R	W		Welding Book	
15	W		W	W		Visual and Dimension	
						Piping	
16	R	-	R	H	X	WPS and PQR for welding and NDT as per ONGC spec. (wherever applicable/ required)	
17	RW	--	RW	W	X	Weld Visual inspection and Dimensional checks	
18	W	--	W	W	X	Pipe Spool Hydro Test	
19	R	--	R	W		NDT of Weld as per Spec.	
20	RW	--	RW	W	X	Hydro test	
						Instrumentation Items	

21	R	--	R	R	X	Rating and Area classification of all components as per the Data Sheet
22	W	--	W	W	X	Functional Test of control/Instrumentation items. Calibration certificates for instruments. Instruments as per approved Instrument data sheets. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Control panel functional test & Logic tests for the equipment package during FAT
						<b>SKID Assembly</b>
23	W	----	W	W	X	Check against Approved P&ID
24	W	----	W	W	X	Visual and Dimension Inspection
25	W	----	W	W	X	Functional test
						<b>Surface preparation &amp; Painting / Coating and Insulation</b>
26	R	----	R	W	X	Surface preparation of vessel and structure after Blasting
27	RW	----	RW	W	X	Painting / coating inspection as per ONGC spec.
28	W	----	W	H	X	Vessel internal inspection before Box-up for cleanliness and completeness
29	W	----	W	W	X	Insulation (As Applicable) as per ONGC spec.
						<b>Other requirements</b>
30	R	----	R	R	X	Review of final documentation to comply with specification requirements
31	R	----	R	W		Review MTC and Testing reports of Bought out items
32	R	----	R	W	X	Final Package Inspection for completeness during / After packaging-tagging, preservation, packing including spares
33	R	----	R	R	X	Certification of vessel by Authorised inspector
34	Is	----	R	H	X	Release Note
						<b>IMIR/GIIR at Yard/Offshore</b>
35	W	W	-		X	Verification of items as per IRN
36	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:
ODS/SOF/004A		ODS/SOP/023		01	00	08.03.2016


	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No	ODS/MECH/IRT/15
						Rev No.	0
						discipline	Mechanical
Item : Sea Water Lift Pump					Inspection Category : "A"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection (TPI)					
			3. Inspection by Contractor / Contractor's Inspection Agency (IA)				
				4. Inspection by Vendor/ Sub Vendor			
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6. Stage of Inspection Involved	
						General	
1	W	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	A	-	R	H	X	FAT Procedure, Hydrostatic & Pneumatic Test Procedure	
4	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
5	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
6	W		W	H		Stage inspection e.g. Fit Up, Weld, Hydro test etc. (as applicable)	
						Pump	
7	R/W	-	R/W	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
8	W	-	W	H	X	Impeller Dynamic Balancing	
9	W	-	W	H	X	Hydrostatic Test of Casing Discharge Header & Column Pipes	
10	R	-	R	H	X	NDT as Applicable	
11	W	-	W	H	X	Mechanical Run Test	
12	W	-	W	H	X	Performance Test at Shut off, at Minimum Flow Rate, at Rated Flow and at 125% Capacity, NPSH Test (One identical Pump), Noise & Vibration Test	
13	W	-	W	H	X	Strip Down Test for Bowl Assembly	
14	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
						Instrumentation and Control	
15	RW	-	RW	H	X	Final Visual, Dimensional Check, Calibration certificates for instruments., Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.	
16	RW	-	RW	H	X	Material Test Certificate, Records, Type Test Reports, Control panel functional test & Logic tests for the equipment package during FAT	

17	RW	-	RW	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check
18	W		W	H	X	Mounting and Alignment Check
						<b>Complete Skid Assembly ( with Column pipe, Pump etc.</b>
19	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
20	R		R	H	X	NDE (RT, UT, MPI, DPI) as applicable
21	R		R	H	X	Heat treatment report as applicable
22	RW	-	RW	H	X	Hydro test as applicable
23	RW	-	RW	H	X	Painting verification and inspection
24	W	-	W	H	X	Factory Acceptance Test (String Test)
25	W	-	W	H	X	Noise & Vibration Tests
26	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
27	RW	-	W	H	X	Preservation, Packing and preparation for shipping
28	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
29	W	W	-		X	Verification of items as per IRN
30	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/16
							Rev. No.	0
							Discipline	Mechanical
ITEM : PRODUCED WATER CONDITIONING SYSTEM						INSPECTION CATEGORY.: 'A'		
Activity	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
	3.Inspection by EPC Inspection Agency/EPC's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
						General		
1	A	-	A	H	X	Inspection & Test plan		
2	A	-	R	H	X	WPS/PQR, WPQR, Heat Treatment, Hydrostatic, Surface Preparation, NDT & FAT Procedure (As applicable)		
3	R	-	R	H	X	Material certification of Major / Wetted / Pressure parts confirming to Code EN 10204 3.1 / ONGC Spec./ NACE MR-01-75 requirement. (as applicable)		
A. HYDROCYCLONE & DEGASSING DRUM								
4	W	-	W	H	X	Check visual and dimensional of component.		
5	W	-	W	H	X	Stage wise Inspection like (Fit up , weld visual)		
6	W	-	W	H	X	NDE requirements (RT/UT/MPI/DPT) (100% Review of RT film if applicable)		
7	R	-	R	H	X	Review of PWHT chart (if applicable)		
8	W	-	W	H	X	Inspection of lining as per specification requirement (If applicable)		
9	W	-	W	H	X	Dimensional check and mechanical clearance		
10	W	-	W	H	X	Check vessel internals (As applicable)		
11	W	-	W	H	X	Hydrostatic Test		
12	W	-	W	H	X	Pneumatic test of R.F Pads (As applicable).		
13	W	-	W	H	X	Check final visual & Dimensional of vessel, internals etc. (As applicable)		
14	W	-	W	H	X	Verification of ASME Code stamping (As applicable)		
15	RW	-	RW	H	X	Surface preparation and protective coating as per ONGC spec 2005 Rev 4		
16	Is	-	R	H	X	Issue of inspection release note and Final documentation		
B. CHEMICAL STORAGE TANK								
17	W	-	W	H	X	NDE requirements (RT/UT/MPI/DPT) (100% Review of RT film if applicable)		
18	RW	-	RW	H	X	Hydrostatic Testing		
19	W	-	W	H	X	Final Visual, dimensional inspection and mechanical clearance		
C. SPOOLS (CONNECTING PIPING) , FLOTATION CELL RECYCLE & CHEMICAL INJECTION PUMPS								
20	R	-	R	H	X	NDE requirements (RT/UT/MPI/DPT) (100% Review of RT film if applicable)		




21	RW	-	RW	H	X	Hydrostatic Testing
22	RW	-	RW	H	X	Run test/Performance test/Alignment test records as applicable for pumps. Instruments as per approved Instrument data sheets.
23	W	-	W	H	X	Final Visual, dimensional inspection and mechanical clearance
<b>D. INSTRUMENTATION</b>						
24	RW	-	RW	H	X	Functional / Routine / Type / Range / Calibration test for Gauges, Indicators, Transmitters and other instruments
25	R	-	R	H	X	Statutory body certificates for Hazardous Area classification and Environmental protection for Instrumentation Items as applicable/approved PS
<b>D.STRUCTURAL SKID</b>						
26	R	-	R	H	X	Material certification of Major components.
27	R	-	R	H	X	NDT as applicable
28	W	-	W	H	X	Check final Visual & Dimensional
<b>E. ASSEMBLED SKID</b>						
29	W	-	W	H	X	Factory Acceptance Testing : Verify / Check all components as per Approved Drawing, Data Sheet & P&ID
30	W	-	W	H	X	Check final Visual & Dimensions of complete assembly. Control panel functional test & Logic tests for the equipment package during FAT.
31	RW	-	RW	H	X	Surface preparation and protective coating as per ONGC spec 2005 Rev 4 (Final DFT )
32	Is	-	R	H	X	Inspection release note
IMR/GIIR at Yard/Offshore						
33	W	W	-		X	Verification of items as per IRN
34	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
ODS/SOF/004A	ODS/SOP/023		01		00	08.03.2016

 <b>ONGC</b>		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>		<b>ODS/MECH/IRT/17</b>	
								<b>Rev No</b>		<b>0</b>	
								<b>Discipline</b>		<b>Mechanical</b>	
Item : <b>Emergency Generator</b>								Inspection Category : "A"			
Activity No.	<b>1. Inspection by ONGC / Certification Agency (CA)</b>										
	<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI)</b>										
	<b>3. Inspection by EPC Inspection Agency (IA)</b>										
	<b>4. Inspection by Vendor / Sub Vendor</b>										
	<b>5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>										
	<b>6. Stage of Inspection Involved</b>										
	<b>General</b>										
1	A	-	R	H	X	Inspection and Test Plan					
2	A	-	R	H	X	FAT Procedure of complete Unit					
3	R	-	R	H	X	Material Identification, Material Test Certificates and Records					
4	A	-	R	H	X	Hydro Test Procedure, Pneumatic Test Procedure (As applicable)					
5	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, Welding Procedure, String Test Procedure (As applicable)					
6	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items					
						<b>Inspection &amp; Testing</b>					
						<b>Diesel Engine</b>					
7	R	-	R	H	X	Material Test Certificates for Major Components					
8	W	-	W	H	X	Performance Test of Diesel Engine including all safety features and overload test.					
						<b>Instruments / Controls and Control Panels</b>					
9	R	-	R	H	X	Review of Certificates for Transmitters					
10	RW	-	RW	H	X	Calibration / Functional Tests					
11	RW	-	Rw	H	X	Final Visual and Dimensional Check of Control Panels					
12	R	-	R	H	X	Review of Certificates for Enclosure Protection and Transmitters					
13	RW	-	RW	H	X	HV & IR Tests					
14	W	-	W	H	X	Functional Tests					
15	RW	-	RW	H	X	Continuity Check					
16	RW	-	RW	H	X	Operational Simulation					

17	W	-	W	H	X	Safety Shutdown Systems checking
						<b>Diesel Day Tank and Skid</b>
18	R	-	R	H	X	Material Identification
19	A	-	R	H	X	WPS, PQR
20	A	-	R	H	X	NDE Requirements
21	W	-	W	H	X	Leak Test of Diesel Day Tank
22	W	-	W	H	X	Final Visual and Dimensional Inspection
						<b>Diesel Engine Coupled with Generator</b>
23	W	-	W	H	X	Check Final, Visual, Dimensional, Alignment and Assembly
24	W	-	W	H	X	Crankshaft Alignment Check
25	W	-	W	H	X	String Test and Performance Test
26	W	-	W	H	X	Simulation of Control / Shutdown
27	W	-	W	H	X	Noise and Vibration level Check
28	W	-	Rw	H	X	Test for Engine Starting
29	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
30	W	-	W	H	X	Check for Engine Generator Safety and Shutdown Devices
31	W	-	W	H	X	Simulation and Functional Test for Local Control Panel, Remote Control Panel
32	W	-	W	H	X	Final Assembly Inspection of Starting and Fuel Oil System during FAT
33	RW	-	Rw	H	X	Check for Accessories, Spares and Various Loose Items
34	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
MIR/GIIR at Yard/Offshore						
35	W	W	-		X	Verification of items as per IRN
36	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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 <b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>	ODS/MECH/IRT/18
						<b>Rev No</b>	0
						<b>Discipline</b>	Mechanical
Item : Chlorinator System / Hypo chloride Generator						Inspection Category : "B"	
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>						
	<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI)</b>						
	<b>3. Inspection by EPC's Inspection Agency (IA)</b>						
	<b>4. Inspection by Vendor/ Sub Vendor</b>						
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>						
	<b>6. Stage of Inspection Involved</b>						
						<b>General</b>	
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	FAT Procedure, SAT Procedure, Manufacturing Procedure, Performance and Mechanical Run Test Procedure	
3	A	-	R	H	X	WPS/PQR & Repair Procedure, Heat Treatment, Surface Preparation and Protective Coating Procedure	
4	R	-	R	H	X	Material Test Certificates, Corrosion Test / Additional Test Reports as per ONGC Specification, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought Out Items, Test Records	
						<b>Storage Supply Tanks, Filters, Blowers</b>	
5	W	-	W	H	X	Material Identification for Tank Parts Viz. Plates, Pipes, Flanges, Fittings, Dish Ends, Filter Elements, UV Sterilizer Fasteners etc. as applicable & Review of TCs	
6	R/W	-	R/W	H	X	Stage Inspection Viz. Shell/Dish Set Up, Root/Back Chip D.P. Nozzle Set Up, Dimensional Check / DP Check Of Dish Ends, Tube Sheet Inspection, Piping Assembly (As applicable)	
7	R	-	R	H	X	NDT, Heat Treatment Chart (As applicable)	
8	RW	-	RW	H	X	Hydrostatic / Pneumatic Test (As applicable)	
9	W	-	W	H	X	Final Visual and Dimensional Inspection	
10	W	-	W	H	X	Testing of Blower	
11	RW	-	RW	H	X	Protective Coating	
						<b>Pump</b>	
12	R	-	R	H	X	Material Test Certificates of Major Components	
13	R	-	R	H	X	Hydrostatic Test REPORT of Casing	
14	W	-	W	H	X	Mechanical Run Test and Performance Test of Pumps	
						<b>Connecting Piping</b>	

15	RW	-	RW	H	X	Raw Material Identification, Material Test Certificates & Records
16	R	-	R	H	X	NDE Requirements (As applicable)
17	W	-	W	H	X	Visual and Dimensional Inspection
18	W	-	W	H	X	Hydrostatic Testing
						<b>All Instrumentation Items</b>
19	R	-	R	H	X	Material TC & Calibration Reports for all E&I Items (As applicable)
20	RW	-	RW	H	X	Electrolytic Cell Routine Test, Pressure Test and Type Test. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.
						<b>Structural Skid</b>
21	R	-	R	H	X	MTCs for all Structural Items
22	R	-	R	H	X	WPS & PQR
23	R	-	R	H	X	NDT, Heat Treatment Chart (As applicable)
24	W	-	W	H	X	Final Visual and Dimensional Inspection
						<b>Complete Skid Assembly</b>
25	W	-	W	H	X	Verify / Check all Components as per P&ID
26	W	-	W	H	X	Check all Connecting Piping as per P&ID
27	W	-	W	H	X	Final Visual and Dimensional Check of Complete Assembly
28	W	-	W	H	X	Functional Test of Complete Unit (FAT)
29	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
30	Is	-	R	H	X	Documents Review and Issue of Inspection Release Note
						IMIR/GIIR at Yard/Offshore
31	W	W	-		X	Verification of items as per IRN
32	W	W			X	IMIR/GIIR on the basis of IRN
30	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:	
ODS/SOF/004A	ODS/SOP/023		01	00	08.03.2015	


	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/19
						Rev. No.	0
						Discipline	Mechanical
Item: Sea Water Fine Filters skids			Inspection Category : B				
Activity No.	1. Inspection by ONGC /Certification Agency CA.						
		2. Inspection by ONGC/Third Party Inspection Agency (TPI)					
			3. Inspection by EPC / EPC Inspection Agency (IA)				
				4. Inspection by Vendor / Sub vendor			
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6. STAGES OF INSPECTION INVOLVED.	
1	A	-	R	H	X	QA Plane / Inspection & Test Plan (ITP)	
2	R	-	R	H	X	Review of welding documents like WPS, PQR, welders qualification records and NDT personal qualification record (If welding is applicable)	
						Pressure Vessels (Pulsation Dampers)- Seawater fine filter, Backwash Basket Strainer- All requirement of ASME Inspector (as applicable) shall be met.	
3	RW	-	RW	H	X	Check/verify of items/equipment & review of documents i.e. material test certificates (MTC), conformance certificates as listed in the QAP.	
4	W	-	W	H	X	ASME Code Stamping along with Applicable Data Reports (MDR)	
						Backwash Air Blower	
5	RW	-	RW	H	X	Check/verify of items/equipment & review of documents i.e. material test certificates (MTC), conformance certificates as listed in the QAP.	
						Piping GRE	
7	RW	-	RW	H	X	Raw Material identification/review of documents i.e. material test certificates (MTC), heat no. for traceability as listed in the QAP.	
8	RW	-	RW	H	X	Stage inspection i.e. fit up, dimensional check, bonding etc.	
9	W	-	W	H	X	Visual examination and dimensional check	
10	RW	-	W	H	X	Hydrostatic test (as applicable)	
						Structural	
11	RW	-	RW	H	X	NDT (RT,UT,MT,PT), 100% review of RT films by TPI & at random by CA	
12	RW	-	RW	H	X	Check/verify of items/equipment & review of documents i.e. material test certificates (MTC), conformance certificates, heat no. for traceability as listed in the QAP.	
13	RW	-	RW	H	X	Stage inspection i.e. fit up, welding etc. (as applicable)	
14	W	-	W	H	X	Visual inspection and dimensional check	
15	RW	-	RW	H	X	Protective coating (as applicable)	

						<b>Instrumentation</b>
16	RW	-	RW	H	X	Check/verify of items/equipment & review of documents i.e. material test certificates (MTC), conformance/compliance certificates, calibration report/certificates as listed in the QAP.
						<b>Skid Package Assembly</b>
17	W	-	W	H	X	Check/verify the correctness of piping line, equipment installation. Instrument & package assembly as per P&ID.
18	R	-	W	H	X	Leak test of piping (as applicable)
19	RW	-	W	H	X	Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
20	W	-	W	H	X	Functional test of all instrument i.e. junction boxes, actuated valve etc.
21	R	-	R	H	X	Review of final document/manufacture's data reports
22	W	-	W	H	X	Final package inspection for completeness after packaging tagging, name plates, preservation, packing including spare.
23	Is	-	R	H	X	Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
24	W	W	-		X	Verification of items as per IRN
25	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		Rev No.	REV. DATE:
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 <b>ONGC</b>		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>				<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>	ODS/MECH/IRT/20				
										<b>Rev No.</b>	0				
										<b>Discipline</b>	Mechanical				
ITEM : De Oxygenation System										INSPECTION CATEGORY: A					
<b>Activity</b>	<b>1. Inspection by ONGC / Certification Agency.(CA)</b>														
		<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI)</b>													
			<b>3.Inspection by EPC/ EPC's Inspection Agency (IA)</b>												
				<b>4. Inspection by Vendor/ Sub Vendor</b>											
					<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>										
						<b>6.Stages of Inspection Involved</b>									
<b>General</b>															
1	A	-	R	H	X	Inspection & Test Plan.									
2	A	-	R	H	X	FAT & SAT Procedure of complete Unit									
3	A	-	R	H	X	WPS / PQR / WPQ & Repair procedure (as applicable),NDT procedures, Hydrostatic/pneumatic test procedures( as applicable ),Performance/Functional test procedure(if applicable) & Painting Procedure.									
<b>DO Tower(Deaerator), Swirl Separator &amp; all Interconnecting Piping</b>															
4	RW	-	RW	H	X	Material traceability & correlation for pressure parts Viz. Plates, Pipes, Flanges, Fittings, Dish ends, Filter elements, Vessel internals, Fasteners etc. & review of test certificates.									
5	RW	-	RW	H	X	Fit-up, Welding, NDT & Heat treatment reports Review(as applicable).									
6	W	-	W	H	X	Hydrostatic Test.									
7	W	-	W	H	X	Check for Internal Lining/Coating (If & as applicable).									
<b>Ejectors</b>															
8	RW	-	RW	H	X	Material traceability & correlation for pressure parts with Manufacturer's Test Certificates.									
9	RW	-	RW	H	X	Fit-up, Welding, NDT & Heat treatment reports Review(As & if applicable).									
10	RW	-	W	H	X	Hydrostatic & Functional test.									
11	W	-	W	H	X	Final Visual & Dimensional check as per Model Number.									
<b>Vacuum Pump</b>															
12	R	-	R	H	X	Material traceability & correlation with Manufacturer's Test Certificates for Major Pump Components.									
13	RW	-	RW	H	X	NDT (As applicable) & Hydrostatic Test for Pump Casing.									
14	W	-	W	H	X	Performance & Mechanical Run Test including Noise Level & Vibration/Balancing Check (As & if applicable)									
15	W	-	W	H	X	Final Visual & Dimensional check as per Model Number.									
<b>Instrumentation Items</b>															

16	R/W	-	R/W	H	X	Manufacturer's TC / Certificate of Conformity (as applicable), Functional / Routine / Type / Calibration test for Gauges, Valves etc. (as applicable). Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.
17	R	-	R	H	X	Certificates for hazardous Area Classification & Enclosure Class for Instrumentation items as per approved PS (as applicable).
<b>Skid Fabrication</b>						
18	R	-	R	H	X	Review of MTC's for Major Structural items.
19	W	-	W	H	X	Fit-up, Welding, NDT (As & if applicable).
20	W	-	W	H	X	Final Visual & Dimensional check.
<b>Final Complete Skid Assembly Check</b>						
21	W	-	W	H	X	Verify / Check all components as per P&ID, Mechanical clearance, Hydrostatic/Pneumatic test, Final Dimensional & Visual check. (As per ONGC Spec. 5103 Rev.1 & Approved P.S).
22	RW	-	Rw	H	X	Pre-Commissioning as per vendor's check list.
23	RW	-	Rw	H	X	Surface preparation & protective coating (Visual & Final paint DFT check as per 2005 spec.).
24	Is	-	R	H	X	Final documentation review & Issue of Inspection Release Note.
<b>IMIR/GIIR at Yard/Offshore</b>						
25	W	W	-		X	Verification of items as per IRN
26	W	W			X	IMIR/GIIR on the basis of IRN
27	W	W		H	X	SAT/Offshore Pre-commissioning, Commissioning & Testing at offshore.
<b>LEGENDS &amp; NOTE: Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016


	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No	ODS/MECH/IRT/21
						Rev No.	0
						Discipline	Mechanical
Item : Centrifugal Pump (MIP & MOL)						Inspection Category : "A"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection (TPI)					
			3. Inspection by Contractor / Contractor's Inspection Agency (IA)				
				4. Inspection by Vendor/ Sub Vendor			
					5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6.Stage of Inspection Involved	
						General	
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Instrument calibration, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items (As applicable)	
6	A	-	R	H	X	Tests/FAT & SAT Procedure including Hydrostatic Test Procedure	
7	W	-	W	H		Stage inspection e.g. Fit up, weld, hydrotest (as applicable)	
						Pump	
8	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
9	RW	-	Rw	H	X	Dynamic Balancing of rotor assembly	
10	R/W	-	W	H	X	Hydrostatic Test of Casing Discharge Header & Column Pipes	
11	R	-	R	H	X	NDT REPORT as applicable	
12	W	-	W	H	X	Mechanical Seal and its component checking	
13	W	-	W	H	X	Mechanical Run Test	
14	W		W	H	X	Check/Verify the completeness components Case wear ring, Impeller wear ring etc.	
15	W	-	W	H	X	Performance Test (at Shut off, at Minimum Flow Rate, at Rated Flow and at 125% Capacity) on complete unit package, Endurance test for 4 hours, NPSH Test (one identical pump), Noise Test , Vibration Test	
16	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	

17	R	-	R	H	X	Test Result report correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)
18	W	-	W	H	X	Strip Down test for checking any abnormal rubbing or wear
						<b>Instrumentation and Control</b>
19	W	-	W	H	X	Final Visual, Dimensional Check
20	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports
21	RW	-	RW	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check
						<b>Complete Skid Assembly ( Pump, coupling, etc)</b>
22	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
23	RW	-	RW	H	X	NDE (RT, UT, MPI, DPI) as applicable
24	R	-	R	H	X	Heat treatment as applicable
25	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check), Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.
26	W	-	W	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping
27	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
28	W	W	-		X	Verification of items as per IRN
29	W	W			X	IMIR/GIIR on the basis of IRN
29	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016

 <b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>	ODS/MECH/IRT/22
						<b>Rev. No.</b>	0
						<b>Discipline</b>	Mechanical
<b>Item: SUMP CASSION WITH BLOW CASE</b>						<b>Inspection Category : B</b>	
Activity No.	<b>1. Inspection by ONGC / Certification Agency (CA).</b>						
		<b>2. Inspection by ONGC/Third Party Inspection Agency (TPI)</b>					
			<b>3. Inspection by EPC / EPC Inspection Agency (IA)</b>				
				<b>4. Inspection by Vendor /Sub vendor</b>			
				<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.</b>			
						<b>6. STAGES OF INSPECTION INVOLVED.</b>	
						<b>For Blow Case</b>	
1	I	-	H	H	----	Pre-Inspection Meeting(If required)	
2	A	-	R	H	X	Approval QAP plan/Inspection and test plan(ITP) from vendor	
3	A	-	R	H	X	WPS , PQR approval & NDT Proc	
4	R	-	R	H	X	Welder Qualification	
5	R/W	-	R/W	H	X	Material receiving Inspection	
6	R/W	-	R/W	H	X	Raw Material identification & marking checks for critical/ pressure component only.	
7	R/W	-	R/W	H	X	Low stress punch mark transfer, verification, traceability	
8	R/W	-	R/W	H	X	Weld joint fit-up inspection	
9	R/W	-	R/W	H	X	Weld visual inspection before PWHT	
10	R	-	R	H	X	Post weld Heat treatment charts / record (as applicable)	
11	R/W	-	R/W	H	X	NDT (RT,UT,MPI,DPT), PMI and Hardness of weld joint (100% review of RT films by TPI & at random by CA)	
12	W	-	W	H	X	Dimensional Inspection, Nozzle orientation and level check (As per spec.)	
13	W	-	W	H	X	Pneumatic test of RF test	
14	W	-	W	H	X	ASME Code Stamping along with Applicable Data Reports (MDR)	
15	W	-	W	H	X	Hydro test and drying of vessel	
16	R	-	R	H	X	Certification of vessel by Authorized inspector(if applicable)	
						<b>Surface Preparation and Painting / coating</b>	
17	R	-	R	H	X	Surface preparation report of vessel after Blasting	
18	RW	-	RW	H	X	Painting/ coating inspection as per ONGC spec.	
						<b>For Sump Caisson</b>	


19	I	-	H	H	X	Pre-Inspection Meeting
20	A	-	R	H	X	Approval QAP plan/Inspection and test plan(ITP) from vendor
21	A	-	R	H	X	WPS & PQR approval & NDT
22	R	-	R	H	X	Welder Qualification
23	R	-	R	H	X	Material receiving Inspection
24	R	-	R	H	X	Raw Material identification & marking checks for critical/pressure component only.
25	W	-	W	H	X	Low stress punch mark transfer, verification, traceability
26	W	-	W	H	X	Weld joint fit-up inspection
27	R	-	R/W	H	X	Weld visual inspection before PWHT
28	R	-	R	H	X	Post weld Heat treatment charts / record (as applicable)
29	R/W	-	R/W	H	X	NDE( RT,UT,MPI,DPT), PMI and Hardness of weld joint (100% review of RT films by TPI & at random by CA)
30	R/W	-	W	H	X	Dimensional Inspection, Nozzle orientation and level check (As per spec.)
31	W	-	W	H	X	Internal assembly(Inspection of internal, if any)
						<b>Piping for Sump Cassion</b>
32	A	-	R	H	X	WPS & PQR for welding & NDT Proc
33	R/W	-	R/W	H	X	NDT as per ONGC spec.
34	R	-	R/W	H	X	Weld visual inspection and Final dimensional check
35	W	-	W	H	X	Leak testing of SS Tubing
						<b>Piping for Blow Case</b>
36	A	-	A	H	X	WPS & PQR for welding& NDT Proc
37	R/W	-	R/W	H	X	NDT as per ONGC spec.
38	R/W	-	R/W	H	X	Weld visual inspection and Final dimensional check
39	W	-	W	H	X	Hydro test of pipe spool connected to blow case.
						<b>Surface Preparation and Painting / coating</b>
40	R/W	-	R/W	H	X	Surface preparation of vessel after Blasting
41	RW	-	R/W	H	X	Stage wise painting/ coating inspection as per ONGC spec.
						<b>Others requirements</b>
42	R/W	-	R/W	H	X	Review of final documentation to comply with specification requirements (MDR). Calibration certificates for instruments Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT

43	W	-	W	H	X	Final Package inspection for completeness during/ after packing - tagging, preservation, packing including spare.
44	Is	-	R	H	X	Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
45	W	W	-		X	Verification of items as per IRN
46	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/MEC/IRT/23
						Rev. No.	0
						Discipline	Mechanical
ITEM : CHEMICAL STORAGE AND INJECTION SYSTEM						INSPECTION CATEGORY: B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)					
			3.Inspection by EPC / EPC Inspection Agency (IA)				
				4. Inspection by Vendor/ Sub Vendor			
					5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6. Stage of Inspection Involved	
						General	
1	A	-	R	H	X	Inspection and test plan	
2	A	-	R	H	X	Submission of applicable welding, NDT, Heat treatment procedures and Qualification records.	
						Pumps	
3	R	-	R	H	X	Manufacturer's test certificates /Compliances for pump components.	
4	W	-	W	H	X	Hydrostatic Test & Performance/Run Test, NPSH Test of pump as per ONGC specification/code.	
5	W	-	W	H	X	Vibration & Noise test as per ONGC Specification	
6	R/W		W	H	X	Linearity and Repeatability @ 100%, 75%, 50%, 25%, and 10% of rated flow (As applicable)	
						Tank (Atmospheric Pressure)Storage	
7	RW	-	RW	H	x	Raw material identification. (Major parts)	
8	RW	-	W	H	x	Raw material identification. (Misc. parts)	
9	RW	-	RW	H	x	Stage Inspection like fit up, welding & NDT etc. (As applicable)	
10	RW	-	RW	H	x	NDE requirements (RT/UT/MPI/DPT - as applicable).(*100% Review of RT films )	
11	W	-	W	H	x	Surface visual (internal & external) inspection, dimension check and mechanical clearance.	
12	RW	-	W	H	x	Leak test	
13	W	-	W	H	x	Pneumatic test of R.F. Pads (As applicable)	
14	W	-	W	H	x	Final visual and dimensional inspection.	
15	RW	-	RW	H	x	Surface preparation and protective coating (final DFT check and visual) as applicable.	
16	RW	-	RW	H	x	Inspection of lining on internal surface if applicable.	



17	RW	-	RW	H	x	Inspection of internals (fabrication of internals, fitment and alignment check), if any
						<b>Connecting piping</b>
18	R	-	R	H	X	Material test certificates and records( EN 10204 3.1 type and ONGC spec 2004A)
19	R	-	R	H	X	WPS/PQR for welding as per 2009F.
20	R	-	R	H	X	NDT (as applicable).
21	RW	-	RW	H	X	Hydrostatic testing.
						<b>Structural</b>
22	R	-	R	H	X	Material test certificates and records.
23	A	-	R	H	X	WPS/PQR for welding as per AWS D1.1 & Spec .2009F.
24	W	-	W	H	X	Check for final visual and dimensional inspection
						<b>Instrumentation Items</b>
25	R	-	R	H	X	Manufacture's TC /Certificate of conformity review (As applicable)
26	R	-	R	H	X	Hazardous area classification/enclosure class certification for E&I items.
27	RW	-	RW	H	X	Functional /Routine/Type/Range/Calibration Test for gauges, Indicators, Flow & Instrument Transmitters, etc. (As applicable). Instruments as per approved Instrument data sheets.
						<b>Complete skid assembly</b>
28	RW	-	W	H	X	Verify/check all components (Piping, equipment and instrumentation systems/assemblies as per drawing/P&ID.
29	W	-	W	H	X	Check final visual dimensions of complete skid assembly
30	Rw	-	W	H	X	System integrity check for complete skid
31	Rw	-	W	H	X	Surface preparation and painting inspection ( Final DFT) as per ONGC spec.
32	W	-	W	H	X	Factory acceptance test
33	Is	-	R	H	X	Issue of inspection release note
IMIR/GIIR at Yard/Offshore						
34	W	W	-		X	Verification of items as per IRN
35	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES: Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016


	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/24
						Rev. No.	0
						Discipline	Mechanical
Item : Centrifugal Pump (Sump Pump)						Inspection Category : "B"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)					
			3. Inspection by EPC / EPC's Inspection Agency (IA)				
				4. Inspection by Vendor / Sub Vendor			
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
						6. Stage of Inspection Involved	
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	FAT Procedure of complete Unit	
3	R	-	R	H	X	Manufacturer's Test Certificates for Pressure Containing Parts and for Major Pump Components	
4	R	-	R	H	X	WPS, WPQ & PQR (As applicable)	
5	R	-	R	H	X	NDT Procedure of Pump Components & Piping as required in specs.	
6	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items (As applicable)	
7	R	-	R	H	X	Calibration Records and Certificates for Pressure Gauges and other Instruments	
						Pump	
8	W	-	W	H	X	Hardness Check on Shaft & Impeller, Wear Rings	
9	RW	-	W	H	X	Visual Inspection and NDT of Nozzle Weld, Butt Weld or Fillet Weld on Pressure Containing Parts, Shafting etc. as per applicable ONGC Spec.	
10	RW	-	Rw	H	X	Visual Check of Major Components before Assembly and Pump Running Clearances	
11	W	-	W	H	X	Hydrostatic Test for Pump Casing	
12	W	-	W	H	X	Dynamic Balancing of Rotor	
13	RW	-	Rw	H	X	Dimensional Check of Assembled Pump Package as per Approved Drawing/ Datasheet	
14	W	-	W	H	X	Mechanical Seal and its Component Checking	
15	W	-	W	H	X	NPSH, Performance Test & Performance Curve Approval	
16	W	-	W	H	X	Mechanical Run Test at rated RPM	
17	RW	-	W	H	X	Noise and Vibration Check as per specification	
18	R	-	R	H	X	Test Result Correlation for Speed, Viscosity & Specific Gravity Conditions (As applicable)	

						<b>Instrumentation Items</b>
19	R	-	R	H	X	Material TC Review, Hydrostatic Testing, Functional Test for Instrument (As applicable)
20	RW	-	RW	H	X	Functional / Routine / Type / Range / Calibration Test for Gauges, Indicators, Transmitters and other Instruments, Calibration certificates for instruments., Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT
						<b>Skid Assembly</b>
21	W	-	W	H	X	Final Inspection of Pump Skid including all Piping and Assembly and All Items on the Skid
22	RW	-	RW	H	X	Protective Coating (Final DFT & Visual Check)
23	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
24	W	W	-		X	Verification of items as per IRN
25	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016


 <b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>	<b>INSPECTION REQUIREMENT TABLE</b>					<b>IRT No.</b>	ODS/MECH/IRT/25
						<b>Rev No</b>	0
						<b>Discipline</b>	Mechanical
Item : Positive Displacement Pump-Controlled Volume (Electric Motor Driven)						Inspection Category : "B"	
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>						
	<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>						
	<b>3. Inspection by Contractor / Contractor's Inspection Agency (IA)</b>						
	<b>4. Inspection by Vendor/ Sub Vendor</b>						
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>						
	<b>6. Stage of Inspection Involved</b>						
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument calibration, Test Certificates of Bought out Items ((Pump Seal System, Pulsation Dampener, valves and other miscellaneous items), Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure	
6	W	-	W	H	X	Run Test, Performance Test on complete unit package (including Pressure Relief Valve Check), NPSH Test, Noise Test, Vibration Test as applicable Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.	
7	R	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
8	R	-	R	H	X	Test Result correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)	
9	R	-	R	H	X	Protective Coating (Final DFT and Visual Check)	
10	R	-	Rw	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping	
11	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note	
						IMIR/GIIR at Yard/Offshore	
12	W	W	-		X	Verification of items as per IRN	
13	W	W			X	IMIR/GIIR on the basis of IRN	
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>							

**LEGENDS & NOTES : Explained Separately**

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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/27
						Rev No	0
						Discipline	Mechanical
Item : Reciprocating Plunger Pump				Inspection Category : "A"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						General	
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument calibration Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	A	-	R	H	X	Tests/FAT Procedure including Hydrostatic Test Procedure	
6	W	-	W	H		Stage inspection e.g Fit up, weld, hydrotest (as applicable)	
						Pump	
7	RW	-	RW	H	X	Material Identification, Material Test Certificates ( MTC) Review & Records of Pump Components	
8	RW	-	RW	H	X	Hardness Check on Plunger, Wear Rings, wetted parts.	
9	RW	-	RW	H	X	NDT and PWHT as applicable	
10	W	-	W	H	X	Mechanical Run Test	
11	W	-	W	H	X	Performance Test on complete unit package, NPSH Test (one identical pump) , Noise Test , Vibration Test etc. as per specification	
12	W		W	H	X	Final Visual, Dimensional Check of Individual Components	
13	R	-	R	H	X	Test Result correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)	

14	W	-	W	H	X	Strip Down test for checking any abnormal rubbing or wear
						<b>Instrumentation and Control</b>
15	W	-	W	H	X	Final Visual, Dimensional Check, Control panel functional test & Logic tests for the equipment package during FAT
16	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports, Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets
17	W	-	W	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check
						<b>Complete Skid Assembly</b>
18	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items (Pump Seal System, Stuffing Box, Pulsation Dampener, valves and other miscellaneous items)
19	R	-	R	H	X	NDE (RT, UT, MPI, DPI) as applicable
20	R	-	R	H	X	Heat treatment as applicable
21	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
22	RW	-	RW	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping
23	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
24	W	W	-		X	Verification of items as per IRN
25	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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 <div>ओएनजीसी ONGC</div>	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/28
						Rev No.	0
						Discipline	Mechanical
Item : Vacuum Pump					Inspection Category : "B"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						General	
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument calibration, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure	
						Pump	
6	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
7	W	-	W	H	X	Dynamic Balancing of rotor assembly	
8	W	-	W	H	X	Hydrostatic Test of Casing, Discharge Header	
9	R	-	R	H	X	NDT as applicable	
10	W	-	W	H	X	Mechanical Seal and its component checking	
11	W	-	W	H	X	Mechanical Run Test	
12	W		W	H	X	Check/Verify the completeness components Case wear ring, Impeller wear ring etc.	
13	W	-	W	H	X	Performance Test on complete unit package, Endurance test for 4 hours, Noise Test , Vibration Test	
14	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
15	R	-	R	H	X	Test Result correlation for Speed, Viscosity & Specific Gravity Conditions (as applicable)	



16	W	-	W	H	X	Strip Down test for checking any abnormal rubbing or wear
						<b>Instrumentation and Control</b>
17	RW	-	RW	H	X	Final Visual, Dimensional Check, Calibration certificates for instruments., Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
18	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports. Control panel functional test & Logic tests for the equipment package during FAT
19	W	-	W	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check
						<b>Complete Skid Assembly</b>
20	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
21	R	-	R	H	X	NDE (RT, UT, MPI, DPI) as applicable
22	R	-	R	H	X	Heat treatment as applicable
23	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
24	RW	-	Rw	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping
25	Is	-	W	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
26	W	W	-		X	Verification of items as per IRN
27	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/29-M
						Rev No.	0
						Discipline	Mechanical
ITEM :Motor Driven Process Gas Compressor Package					Inspection Category : "A"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by EPC / EPC Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
						Compressor	
1	A	-	R	H	x	Inspection and Test Plan with Test Procedure for Complete Compressor Package	
2	A	-	R	H	X	FAT & SAT Procedure of complete Unit-Compressor Package	
3	R	-	R	H	x	Material Test Certificates / Compliance for Major Compressor Components viz Casing, Impellers, Shaft Bearings, Bearing Housing Piping, etc.	
4	Rw	-	Rw	H	x	NDT of Compressor Components viz Casing, Impellers, Shaft, etc. Including Piping, as applicable at Manufacturer's Work	
5	R	-	R	H	x	WPS / PQR & Repair Procedure for Piping Casing, Impeller Shaft	
6	W	-	W	H	x	System Leak Test	
7	W	-	W	H	x	Hydro Static Test for Pressure retaining Parts of Compressor (Witness for Casing, Random Witness for Piping)	
8	W	-	W	H	x	Over Speed Test on Impellers Including Dimensional Check and DP Test after Over Speed Test	
9	R	-	W	H	x	Dynamic Balancing of Each Impeller / Rotor and Rotor Assembly	
10	W	-	W	H	x	Mechanical Run Out of Rotor Assembly	
11	W	-	W	H	x	Dry Gas Seal Rig Test at Seal's Manufacturer's Works	
12	W	-	W	H	x	Shop Test - Mechanical Run Test for Compressor as per relevant Equipment Code as per Approved Shop Test Procedure at Manufacturer's works	
13	W	-	W	H	x	Performance Test (Factory Acceptance Test) of Complete Compressor (Including Field Bump Test for Compressor), at Manufacturer's Work according to approved Shop Test Procedure	
14	W	-	W	H	x	Strip Down Test after Satisfactory Mechanical Run Test (Only Bearing Inspection)	
14	W	-	W	H	x	Gas Leakage Test (Static Seal Test)	

16	W	-	W	H	x	Final Inspection of the Complete Assembled Compressor Including Visual and Dimensional Check and Completeness Check of All Items as per Approved P&IDs and GADs
17	R	-	R	H	x	Manufacturer's Test Certificates / Compliance and Calibration Certificates for Bought Out Items like Bearing, Valves, Probes and Other Instruments etc.
18	R	-	R	H	x	Type Test report and Certificate from Statutory Bodies (As applicable)
19	W	-	W	H	x	Instrument Check as per P&ID, Calibration certificates for instruments. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT
20	W	-	W	H	x	Vibration and Noise Test
21	Rw	-	Rw	H	x	Protective Coating & Insulation (Final DFT and Visual Check)
22	Is	-	R	H	x	Documentation Review and Issue of Inspection Release Note for Compressor Package
						<b>Complete Skid Assembly (Compressor + Motor +VSD) at YARD/OFFSHORE</b>
24	W	W	W	H	x	Inspection of Main Coupling
25	W	W	W	H	x	String Test at Yard for Complete Compressor Train as per approved Test Procedure
26	R	R	R	H	x	String Test Documentation review
27	W	W	-		X	Verification of items as per IRN
28	W	W			X	IMIR/GIIR on the basis of IRN
29	W	W	-	H	x	Offshore Performance Test/SAT for Complete Compressor Train as per approved Procedure
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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<div>ओएनजीसी</div> <div></div> <div>ONGC</div>		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/29
							Rev No.	0
							Discipline	Mechanical
ITEM : Process Gas Compressor Package					Inspection Category : "A"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)							
	2. Inspection by ONGC / Third Party Inspection (TPI)							
	3. Inspection by EPC / EPC Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
						Turbine		
1	A	-	R	H	x	Inspection and Test Plan		
2	A	-	R	H	x	Manufacturing Procedure, FAT & SAT Procedure, Performance & Mechanical Run Test Procedure, String Test Procedure		
3	R	-	R	H	x	Material Test Certificates / Compliance for Major Turbine Components, viz Casing, Rotors, Shaft, Couplings, Bearings, Bearing Housing, Piping etc. by Turbine Manufacturer		
4	Rw	-	Rw	H	x	NDT, as applicable for Turbine Components viz Casing, Shaft, Blades, Casing etc. Including Piping		
5	R	-	R	H	x	WPS / PQR & Repair Procedure for Piping, Casing, Impeller, Shaft		
6	W	-	W	H	x	Hydrostatic Test for Pressure retaining Parts of Turbine (As applicable)		
7	W	-	W	H	x	Dynamic Balancing of Each Rotor & Coupling		
8	W	-	W	H	x	Mechanical Run Out and Electrical Run Out Check		
9	W	-	W	H	x	Visual and Dimensional Inspection of Base Frame and Enclosure		
10	W	-	W	H	x	Shop Test - Mechanical Run Test for Gas Turbine as per Relevant Equipment Code and Specification according to Approved Shop Test Procedure at Manufacturer's Works		
11	W	-	W	H	x	Performance Test (Factory Acceptance Test) of Complete Turbine as per Code Requirements at Manufacturer's Work according to Approved Shop Test Procedure		
12	W	-	W	H	x	System Leak Test		
13	W	-	W	H	x	Final Inspection of the Complete Assembled Turbine Including Visual and Dimensional Check and Completeness Check of All Items as per Approved P&IDs and GADs		
14	W	-	W	H	x	Final Inspection of Complete Lube Oil System Including Visual and Dimensional Checks of All Major Items (Performance)		
15	R	-	R	H	x	Manufacturer's Test Certificates / Compliance and Calibration Certificates for Bought Out Items like Valves, Probes and Other Instruments, etc.		
16	R	—	R	H	X	Calibration certificates for instruments., Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the PGC during FAT		
17	R	-	R	H	x	Review of Functional Test Certificates of Battery and Battery Charger, PLC (Programmable Logic Controller) & Other Instruments		
18	R	-	W	H	x	Inspection and Testing of UCP (Unit Control Panel), LCP (Local Control Panel)		


19	R	-	W	H	x	Vibration & Noise Test
20	R	-	R	H	x	Oil Cleanliness Check
21	Rw	-	Rw	H	x	Protective Coating & Insulation (Final DFT and Visual Check)
22	R	-	R	H	x	WPS / PQR & Repair Procedure for Casing, Base Plate etc. (As applicable)
23	R	-	R	H	x	Over Speed Test
24	R	-	R	H	x	Type Test and Certificate from Statutory Bodies (As applicable)
25	H	-	H	H	x	Documentation Review and Issue of Inspection Release Note for Turbine
26	R	R	-	-	x	Verification of Inspection Release Note of Turbine at Yard
						<b>Compressor</b>
27	A	-	R	H	x	Inspection and Test Plan with Test Procedure for Complete Compressor Package
28	R	-	R	H	x	Material Test Certificates / Compliance for Major Compressor Components viz Casing, Impellers, Shaft Bearings, Bearing Housing Piping, etc.
29	Rw	-	Rw	H	x	NDT of Compressor Components viz Casing, Impellers, Shaft, etc. Including Piping, as applicable at Manufacturer's Work
30	R	-	R	H	x	WPS / PQR & Repair Procedure for Piping ,Casing,, Impeller, Shaft
31	W	-	W	H	x	System Leak Test
32	W	-	W	H	x	Hydro Static Test for Pressure retaining Parts of Compressor (Witness for Casing, Random Witness for Piping)
33	W	-	W	H	x	Over Speed Test on Impellers Including Dimensional Check and DP Test after Over Speed Test
34	W	-	W	H	x	Dynamic Balancing of Each Impeller / Rotor and Rotor Assembly
35	W	-	W	H	x	Mechanical Run Out Check of Rotor Assembly
36	W	-	W	H	x	Dry Gas Seal Rig Test at Seal's Manufacturer's Works
37	W	-	W	H	x	Shop Test - Mechanical Run Test for Compressor as per relevant Equipment Code as per Approved Shop Test Procedure at Manufacturer's works
38	W	-	W	H	x	Performance Test (Factory Acceptance Test) of Complete Compressor (Including Field Bump Test for Compressor), at Manufacturer's Work according to approved Shop Test Procedure
39	W	-	W	H	x	Strip Down Test after Satisfactory Mechanical Run Test (Only Bearing Inspection)
40	W	-	W	H	x	Gas Leakage Test (Static Seal Test)
41	W	-	W	H	x	Final Inspection of the Complete Assembled Compressor Including Visual and Dimensional Check and Completeness Check of All Items as per Approved P&IDs and GADs
42	W	-	W	H	X	Calibration certificates for instruments., Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the PGC during FAT
43	R	-	R	H	x	Manufacturer's Test Certificates / Compliance and Calibration Certificates for Bought Out Items like Bearing, Valves, Probes and Other Instruments etc.
44	W	-	W	H	x	Instrument Check as per P&ID
45	W	-	W	H	x	Vibration and Noise Test
46	Rw	-	Rw	H	x	Protective Coating & Insulation (Final DFT and Visual Check)
47	Is	-	R	H	x	Documentation Review and Issue of Inspection Release Note for Compressor Package

						<b>Complete Skid Assembly (Compressor + Turbine) at Yard/Offshore</b>
48	W	W	W	H	x	Inspection of Main Coupling
49	W	W	W	H	x	String Test at Yard for Complete Turbine and Compressor Train as per approved Test Procedure
50	R	R	R	H	x	String Test Documentation review
51	W	W	-	H	x	Offshore Performance Test /SAT for Complete Turbine / Compressor Train as per approved Procedure
52	W	W	-	H	X	Verification of items as per IRN
53	W	W			X	IMIR/GIIR on the basis of IRN
54	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No	ODS/MECH/IRT/30
							Rev No	0
							Discipline	Mechanical
ITEM : Gas Turbine Generator					Inspection Category : "A"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)							
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
			3. Inspection by EPC / EPC's Inspection Agency (IA)					
				4. Inspection by Vendor / Sub Vendor				
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval			
						6. Stage of Inspection Involved		
						General		
1	A	-	R	H	X	Inspection and Test Plan		
2	A	-	R	H	X	Manufacturing Procedure, FAT & SAT Procedure, Performance & Mechanical Run Test Procedure, String Test Procedure		
3	R	-	R	H	X	Material Identification, Manufacturer's Test Certificates / Compliance & Calibration Certificates for Bought out Items like Bearings, Valves, Probes and other Instruments etc.		
4	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification & Environmental Protection for Instrumentation Items		
5	R	-	R	H	X	NDT Procedure, WPS/PQR		
						Inspection & Testing		
						Gas Turbine		
6	R	-	R	H	X	Material Test Certificates for Major Turbine Components		
7	R	-	R	H	X	NDT, as applicable for Turbine Components viz Casing Shaft, Blades, Casing etc. Including Piping		
8	W	-	W	H	X	Hydrostatic Test for Pressure Retaining Parts of Turbine, Wherever applicable		
9	W	-	W	H	X	Dynamic Balancing of Each Rotor & Couplings		
10	Rw	-	W	H	X	Mechanical Run out Check		
11	Rw	-	W	H	X	Over Speed Test		
12	R	-	W	H	X	Visual and Dimensional Inspection of Base Frame and Enclosure		
13	R	-	W	H	X	System Leak Test		
14	W	-	W	H	X	Final Inspection of Complete Lube Oil System Including Visual and Dimensional Checks of All Major Items (Performance)		
15	W	-	W	H	X	Oil Cleanliness Check		
16	RW	-	Rw	H	X	Protective Coating & Insulation (Final DFT and Visual Check)		

17	W	-	W	H	X	Shop Test - Mechanical Run Test for Gas Turbine and Gear Box at Manufacturer's Works
18	W	-	W	H	X	Performance Test (Factory Acceptance Test) of Complete Turbine
19	W	-	W	H	X	Vibration and Noise Test
20	W	-	W	H	X	Inspection and Testing of UCP (Unit Control Panel), LCP (Local Control Panel)
21	W	-	W	H	X	Final Inspection of the Complete assembled Turbine Including Visual and Dimensional Check and Completeness Check of All Items as per approved P&IDs and GADs
22	R		R	H	X	Manufacturing 's test certificates/ compliance and calibration certificates for bought out items like bearing, valves, probes and other instruments etc.
23	Is		R		X	Review of documents and issue of RN for Turbine
						<b>Auxiliary Drives / Accessories - F&amp;G System etc.</b>
24	W	-	W	H	X	Visual and Dimensional Inspection & Tag Plate Check
25	RW	-	Rw	H	X	Panel Wiring and Instrument Check as per Drawing
26	RW	-	Rw	H	X	Functional and Calibration Check
27	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
28	R		R	W	X	Manufacturing's test certificates/ compliance and calibration certificates for bought out items like bearing, valves, probes and other instruments etc.
29	Is	-	R	H	X	Documentation Review and Issue of Inspection Release Note for Complete Package
						<b>Complete Assembly (Turbine + Generator) at Yard</b>
30	W	W	W	H	X	Combined String Test
31	W	W	W	H	X	Vibration and Noise Level Test
32	W	W	-		X	Verification of items as per IRN
33	W	W			X	IMIR/GIIR on the basis of IRN
33	W	W			X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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 <b>ओएनजीसी</b> <b>ONGC</b>		<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>				<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>		<b>ODS/MECH/IRT/31</b>	
										<b>Rev No</b>		<b>0</b>	
										<b>Discipline</b>		<b>Mechanical</b>	
<b>ITEM : DG Set (Portable)</b>										<b>INSPECTION CATEGORY : "B"</b>			
<b>Activity</b>	<b>1. Inspection by ONGC / Certification Agency (CA).</b>												
	<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI).</b>												
	<b>3. Inspection by EPC Inspection Agency.</b>												
	<b>4. Inspection by Vendor / Sub Vendor.</b>												
	<b>5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>												
	<b>6. Stages of Inspection Involved</b>												
1	A	-	A	H	X	Inspection and Test Plan.							
2	A	-	R	H	X	FAT Procedure of complete Unit							
3	A	-	R	H	X	Performance / Functional Test Procedure							
4	R	-	R	H	X	WPS/PQR/WPQ/NDT procedures, Hydrostatic/pneumatic test procedures & Painting Procedure							
<b>Inspection &amp; Testing</b>													
<b>Diesel Engine</b>													
5	R	-	R	H	X	Material Test Certificates / compliance for major components.							
6	R	-	R	H	X	Check shop assembly inspection records. Instruments as per approved Instrument data sheets.							
7	W	-	W	H	X	Functional Test/Performance test (as per approved data sheets / drawings, applicable code & standard). As per ONGC spec 5502 F.							
<b>Instrumentation</b>													
8	W	-	W	H	X	Manufacturer's TC / Certificate of conformity / calibration test (as applicable) for instruments, valves, Jb's etc.							
9	W	-	W	H	X	Records of control panel for functional / operational & shutdown logic. Control panel functional test & Logic tests for the equipment package during FAT.							
10	R	-	R	H	X	Type test certificate / conformity certificate for specified enclosure class & Hazardous Area Classification							
<b>Diesel Day Tank &amp; Skid</b>													
11	R	-	R	H	X	Material Traceability & Review Manufacturer's Test Certificates							
12	R	-	R	H	X	Fit-up, Welding & NDT (As applicable)							
13	W	-	W	H	X	Leak testing of Diesel Tank							


14	R	-	R	H	X	NACE Confirmation as per latest MR0175 /ISO 1516 ( As Applicable)
<b>Final Complete Skid Assembly Check</b>						
15	W	-	W	H	X	Functional/Performance Test including noise level and vibration check
16	RW	-	RW	H	X	Surface preparation & protective Coating ( Visual & final DFT check as per spec 2005)
17	W	-	W	H	X	Final Visual ,dimensions , Marking check & stamping as per model number
18	Is	-	R	H	X	Final documentation ( MDR) review and issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
19	W	W	-		X	Verification of items as per IRN
20	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE				IRT No.	ODS/MECH/IRT/32
							Rev No.	0
							Discipline	Mechanical
ITEM : CO2 Snuffing System							INSPECTION CATEGORY.: 'B'	
Activity	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
	3. .Inspection by EPC / EPC's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor							
	5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
General								
1	A	-	R	H	X	Quality Control Plan.		
2	A	-	R	H	X	FAT Procedure of complete Unit		
3	R	-	R	H	X	Review of material test certificates/compliance certificate for all major Bought Items like Valves, Pressure Gauges, Fire/Heat Detection/Sensing Device, Weighing Scale, Pressure Switches, and Actuators.		
4	R	-	R	H	X	Statutory body certificates for Hazardous area classification and Environmental protection for electrical/Instrumentation items (as applicable).		
5	R	-	R	H	X	Review of NDT Procedures, Painting and WPS, PQR and WPQT.		
Testing & Inspection								
CO <sub>2</sub> /N <sub>2</sub> cylinders								
6	W	-	W	H	X	Hydro & Pneumatic test of cylinders (as applicable)		
7	R	-	W	H	X	Check final visual & dimensions of cylinders		
8	RW	-	RW	H	X	Surface preparation and protective coating as per ONGC spec 2005		
9	R	-	R	H	X	Verify certification of cylinders.		
Control Panel								
10	W	-	W	H	X	Visual/dimensional check, functional check. Control panel functional test & Logic tests for the equipment package during FAT		
11	R	-	R	H	X	Verify test certificates, certificates for specified enclosure class. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Calibration certificates for instruments		
Skid structure fabrication and assembly								
12	W	-	W	H	X	Check visual and dimensional of skid structure assembly.		

13	RW	-	RW	H	X	Surface preparation and protective coating as per ONGC spec 2005
<b>Cylinder cabinet</b>						
14	W	-	W	H	X	Check visual & dimensional
<b>Final Inspection</b>						
15	W	-	W	H	X	Check interconnecting piping and component as per ONGC spec 2004A.
16	W	-	W	H	X	Check Visual and dimensional of whole skid assembly
17	RW	-	RW	H	X	Surface preparation and protective coating (Final DFT)as per ONGC spec 2005
18	W	-	W	H	X	Performance Test
<b>Final Documentation</b>						
19	R	-	R	H	X	Final Documentation shall include manufacturer TC's for all bought out items, raw material and stage inspection report as per the approved ITP.
20	Is	-	R	H	X	Inspection release Note
IMIR/GIIR at Yard/Offshore						
21	W	W	-		X	Verification of items as per IRN
22	W	W			X	IMIR/GIIR on the basis of IRN
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

 <b>ओएनजीसी</b> <b>ONGC</b>	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No</b>	<b>ODS/MECH/IRT/33</b>
							<b>Rev No.</b>	<b>0</b>
							<b>Discipline</b>	<b>Mechanical</b>
<b>Item : Air Cooled Heat Exchanger</b>						<b>Inspection Category : "A"</b>		
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>							
	<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI)</b>							
	<b>3. Inspection by EPC / EPC's Inspection Agency (IA)</b>							
	<b>4. Inspection by Vendor/ Sub Vendor</b>							
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approve</b>							
	<b>6. Stage of Inspection Involved</b>							
						<b>General</b>		
1	A	-	R	H	X	Inspection and Test Plan		
2	A	-	R	H	X	Hydro Test Procedure, Pneumatic Test Procedure, FAT Procedure (As applicable)		
3	A	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, Welding Procedure (As applicable)		
4	R	-	R	H	X	Material Test Certificates, Corrosion Test / Additional Test Reports as per ONGC Specification, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought Out Items, Test Records and Compliance to other PS Requirements. Calibration certificates for instruments, like vibration switch / probes. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable)		
5	A	-	R	H	X	WPS / PQR/WPQ for heat exchanger		
6	R	-	R	H	X	Material Identification, Review of MTCs and Traceability Records (For Pressure Parts & Non Pressure Parts)		
						<b>Inspection &amp; Testing</b>		
7	W	-	W	H	X	Mock-Up Test (Tube to Tube Sheet Joint)		
8	W	-	W	H	X	Visual and Dimension Inspection		
9	W	-	W	H	X	Performance Curves for Fans and Louvers / Mechanical Run Test		
10	R	-	R	H	X	Non Destructive Testing (As applicable)		
11	W	-	W	H	X	Vibration and Noise Level Test (As applicable)		
12	R	-	R	H	X	Pickling and Passivation of Corrosion Resistance Alloy (CRA), as applicable		
13	W	-	W	H	X	Pneumatic Test, Hydro Static Test (As applicable)		
14	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)		
15	Rw	-	Rw	H	X	Tube Sheet Inspection after Drilling		
16	W	-	W	H	X	Tubes Inspection after Finning		

17	W	-	W	H	X	Mechanical Bond Test between Fin and Tube
18	RW	-	RW	H	X	Inspection of Tube to Tube Sheet Joint (*100% DPT of Tube to Tube Sheet Joint, As applicable), Root and Final Pass DPT. Air Test (As applicable)
19	R	-	R	H	X	Review of PWHT Charts and Hardness (As applicable)
20	W	-	W	H	X	Partition Plate Check after Welding
21	W	-	W	H	X	Flushing and Drying of Tubes
22	W	-	W	H	X	Fan, Gear Boxes, Vibration Switch, etc. as per Approved Data Sheets, Drawings, PS)
23	R	-	R	H	X	Area Classification Certificates
24	W	-	W	H	X	Complete Assembly Mechanical Run Test
25	Is	-	W	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
26	W	W	-		X	Verification of items as per IRN
27	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)				INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/34
								Rev No.	0
								Discipline	Mechanical
Item: WASTE HEAT RECOVERY UNIT (WHRU)						Inspection Category : A			
ACTIVITY	1. Inspection by ONGC / Certification Agency CA.								
	2. Inspection by ONGC/Third Party Inspection(TPI)								
	3. Inspection by EPC Inspection Agency								
	4. Inspection by Vendor								
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.								
No	6. STAGES OF INSPECTION INVOLVED								
1	I	-	W	W	----	Pre-Inspection Meeting (as required)			
2	A	-	R	H	X	FAT & SAT Procedure of complete Unit			
3	A	-	R	H	X	Approval of QA Plan / Inspection and test plan (ITP) of vendor			
						Heat Exchangers/Piping			
						Before start of Fabrication			
3	A	-	H	H	X	WPS and PQR Approval			
4	A	-	H	H	X	Welder Qualification Records, NDT Procedure, Hydrotest procedure, Refractory lining & Dry out procedure, Painting procedure			
						During Fabrication			
5	W	-	W	W	X	Raw Material Identification and Marking checks for critical / pressure components only			
6	RW	-	R/W	W	X	Weld joint fit-up inspection			
7	RW	-	R/W	W	X	Weld visual inspection before PWHT			
8	RW	-	R/W	W	X	NDE (RT, UT, MPI, DPT), PMI and Hardness - Materials & weld joints as per spec.(as applicable)			
9	R	-	R	W	X	Heat treatment reports (i.e. Tube U Bend etc. as applicable)			
10	R	-	R	W	X	Post Weld Heat Treatment Charts / Records for the Weld Joint (As Applicable)			
11	R/W	-	W	H	X	Hydro / Pneumatic test of all pressure parts (Tubes, Channel / Head, Tube to Tube Sheet Joints etc.			
12	W	-	W	W	X	Visual and Dimensional Inspection, tube length, tube diameter, gauge, flattening measurement of tube at U-bend area, Nozzles / tapping, and orientation, removal of burrs and spatters, installations of trims etc.			
13	R	-	R	R	X	Code Stamping (ASME or others as specified in PS)			
						Skid / Base Frame			
14	W	-	W	W	X	Check final visual and dimensional			

15	R/W	-	W	W	X	Check connection of all piping spools (casing connections) for drains and vents etc.
						<b>Ducts and Diverter Valves</b>
16	R/W	-	W	W	X	Ducts Pneumatic Testing - Leakage Rate Check
17	R/W	-	W	W	X	Leakage test from duct isolation valve / diverter valve seats at design temperature after thermal heating- (Max 1% of flow allowed)
18	W	-	W	W	X	Normal control and operation of ducts louvers / valves through pneumatic and electrical actuation
19	W	-	W	W	X	Fire safe position check of all valves
20	W	-	W	W	X	Duct material and joining details
21	W	-	W	W	X	Tube bundle assembly : Vacuum tightness test, Halide test after tube expanding
		-				<b>Control Panels</b>
22	W	-	W	W	X	Visual inspection for wiring and item layout, cable entry location, gland sizing, number of entries, indication lamps, switches and push buttons etc.
23	W	-	W	H	X	Function test as per schematic diagram and interface and performance test (through simulation of signals) Control panel functional test & Logic tests for the equipment package during FAT.
24	R	-	R	R	X	<b>Type Test report</b> - Certified by recognized/reputed Third Party
25	W	-	W	R	X	Fire rating - Insulation material ( If supplied by WHRU vendor)
26	R	-	R	R	X	Hazardous area classification, intrinsic safety and IP rating certification for all instrument items. Calibration certificates for instruments. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets
27	RW	-	R/W	W	X	<b>Noise Test, Vibration Test of Complete assembled unit-</b> Exhaust of Turbine gases from WHRU
						<b>Surface preparation &amp; Painting / Coating</b>
28	RW	-	RW	W	X	Surface preparation of vessel and structure after Blasting
29	RW	-	R/W	W	X	Painting / coating/ Insulation inspection as per ONGC spec.
30	W	-	W	H	X	Vessel internal inspection before Box-up for cleanliness and completeness
31	W	-	W	H	X	Refractory and Insulation (As Applicable)
						<b>Other requirements</b>
32	W	-	W	W	X	Final Visual & Dimensional Inspection, P & ID Verification
33	R/W	-	W	H	X	Performance / Functional Test of Package
34	R	-	R	R	X	Review of final documentation to comply with specification requirements
35	W	-	W	W	X	Final Package Inspection for completeness during / After packaging-tagging, preservation




36	R	-	R	R	X	Certification of vessel by Authorised inspector (if required)
37	Is	-	R	H	X	Release Note of complete unit
						IMIR/GIIR at Yard/Offshore
38	W	W	-	H	X	Verification of items as per IRN
39	W	W			X	IMIR/GIIR on the basis of IRN
40	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:
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 ONGC	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/36
						Rev No	0
						Discipline	Mechanical
Item : Nitrogen Generator Package						Inspection Category : "A"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5.. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	Hydrostatic Test, Performance Test, Mechanical Run Test, FAT & SAT Procedure (As applicable)	
3	R	-	R	H	X	Welder Qualification Records (WPQR)	
4	A	-	R	H	X	WPS AND PQR Approval	
						Compressor Positive Displacement	
5	R	-	R	H	X	Manufacturer's Test Certificates for Major Compressor Components	
6	R	-	R	H	X	NDT of Compressor Components, viz. Piston Rods/Cylinders, Pistons, Liners etc. (As applicable)	
7	W	-	W	H	X	Hydrostatic Test for pressure parts of compressor, component casing wherever applicable	
8	R	-	R	H	X	Static Balancing report of Flywheel	
9	W	-	W	H	X	Surface Finish Check of Piston Rods, Cylinders, Liners, Including Hardness Check (As applicable)	
10	W	-	W	H	X	Mechanical Run Test of Compressor , Drivers and Gear Units including Integral Auxiliary System Package, as per Approved Procedure (as applicable)	
11	W	-	W	H	X	Performance Test of Compressor as per API / Manufacturer std Approved Procedure	
12	W	-	W	H	X	Protective Coating Inspection (Final DFT and Visual Check)	
						Pressure Vessels (Interstage Receivers, Air Dryer, Coolers, Air Pre/After Filters, Pressure Swing Absorption System)	
13	R	-	R	H	X	WPS/PQR & Repair Procedure (As applicable)	
14	R	-	R	H	X	Material Identification for Pressure Parts Viz. Plates, Pipes, Flanges, Fittings, Dish Ends, Filter Elements, Heater, Fasteners etc. & Review of Test Certificates	
15	R	-	R	H	X	Weld Visual and NDT, Heat Treatment Chart (As applicable)	
16	W	-	W	H	X	Hydrostatic Test for Pressure Containing Parts (As applicable)	


17	W	-	W	H	X	Pneumatic Test for RF Pads (As applicable)	
18	R	-	R	H	X	ASME Code Stamping (As applicable)	
19	W	-	W	H	X	Ensure name plate with tag no. etc. fixed and verification of as built dossier	
20	W	-	W	H	X	Final Visual and Dimensional Check	
21	RW	-	RW	H	X	Protective Coating (As applicable)	
					X	<b>Connecting Piping</b>	
22	R	-	R	H	X	Raw Material Identification and Material Test Certificates & Records	
23	R	-	R	H	X	NDE Requirements (As applicable)	
24	W	-	W	H	X	Final Visual and Dimensional Check	
25	W	-	W	H	X	Hydrostatic Testing	
						<b>All Instrumentation Items</b>	
26	R	-	R	H	X	Certificate of Conformity for Specified IP / NEMA enclosure class of Panel	
27	W	-	W	H	X	Functional Test of Panels as per ONGC Specification. Instruments as per approved Instrument data sheets.	
28	R	-	R	H	X	Calibration / Functional / Manufacturers Test Certificate for Gauges, Transmitters etc. (As applicable)	
29	R	-	R	H	X	Certificate of Conformity for IP / NEMA Enclosure Class for Transmitters etc. (As applicable)	
30	R	-	R	H	X	Statutory Body Certificates for Hazardous class for all Items (As applicable)	
						<b>All Valves and Other Instrumentation Items</b>	
31	R	-	R	H	X	Raw Material Identification, Material Test Certificates & Records	
32	R	-	R	H	X	NDE Requirements (As applicable)	
33	RW	-	Rw	H	X	Final Visual and Dimensional Inspection	
						<b>Structural Skid</b>	
34	R	-	R	H	X	Material Identification, MTCs for All Structural Items	
35	W	-	R	H	X	WPS & PQR	
36	R	-	R	H	X	NDT Requirements (As applicable)	
37	W	-	W	H	X	Final Visual and Dimensional Check	
						<b>Surface preparation &amp; Painting / Coating and Insulation</b>	
38	W	-	W	W	X	Surface preparation of vessel and structure after Blasting	
39	RW	-	W	W	X	Painting / coating inspection as per ONGC spec.	
40	W	-	W	H	X	Vessel internal inspection before Box-up for cleanliness and completeness	
41	W	-	W	W	X	Insulation (As Applicable) as per ONGC spec.	
						<b>Complete Skid Assembly</b>	

42	W	-	W	H	X	Verify / Check All Components including Piping as per P&ID	
43	W	-	W	H	X	Check Final Visual and Dimensions of Complete Assembly. Control panel functional test & Logic tests for the equipment package during FAT.	
44	W	-	W	H	X	Performance Test Including Functional Test of Instrumentation & Control	
45	RW	-	Rw	H	X	Protective Coating Inspection (Final DFT and Visual Check)	
46	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note	
IMIR/GIIR at Yard/Offshore							
47	W	W	-		X	Verification of items as per IRN	
48	W	W			X	IMIR/GIIR on the basis of IRN	
40	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor	
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>							
<b>LEGENDS &amp; NOTES : Explained Separately</b>							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/38
						Rev No.	0
						Discipline	Mechanical
ITEM : Water Maker System					Inspection Category : "B"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)					
			3. Inspection by EPC/EPC's Inspection Agency (IA)				
				4. Inspection by Vendor / Sub Vendor			
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval		
							Stage of Inspection Involved
						General	
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	Welding Procedures, NDT Procedures, Hydrostatic Test Procedures, Surface Preparation & Protective Coating, Heat Treatment and FAT, SAT & Commissioning Procedures	
3	R	-	R	H	X	Material Identification & Correlation with MTC/ Compliance Certificate	
4	R	-	R	H	X	List / Index of Documents of Manufacturing Record Book (MRB)	
						Evaporator Assembly , Heat Exchangers	
5	R	-	R	H	X	Material Identification & Correlation with MTC for Pressure Parts & Non-Pressure Parts	
6	R	-	R	H	X	WPS & PQR	
7	W	-	W	H	X	Long Seam & Circ Seam Set Up for Shell & Fit-Up with Dish Ends, Check for Nozzle Orientation and Fit-Up	
8	R	-	R	H	X	Tube to Tube Sheet Joint - Mock-Up Procedure Qualification report	
9	W	-	W	H	X	Visual, Check for Tubes Expansion, NDT on Tube to Tube Sheet Weld Joints (As applicable) and RT films review	
10	R	-	R	H	X	Heat Treatment Charts & Hardness Check on Welds (As applicable), Check for Dimensions of Tube Sheet Before & After Drilling and Dimensional & Hardness Check of Dish Ends (Heads)	
11	W	-	W	H	X	Check for Leak Test on Tube Sheet with Tube Bundle	
12	W	-	W	H	X	Check Final Assembly with Headers / Channel Covers	
13	W	-	W	H	X	Pneumatic Test for RF Pads	
14	W	-	W	H	X	Hydrostatic Test of Shell Side & Tube Bundle Side	
15	RW	-	Rw	H	X	Protective Coating (Final DFT & Visual Check)	
16	W	-	W	H	X	Marking/ Tagging & ASME Code Stamping with Certification	

						<b>RO Membrane skid with Cleaning system</b>
17	R	-	R	H	X	Material Identifications against manufacturer's test certificates of RO membrane(as per WHO standards),all major components of motor drive pump, motor, tank, piping, valves, instrumentation, hoses etc. in compliance with ONGC spec., Approved Data Sheets, Drawings and applicable Piping Material Specification
18	R'W	-	RW	H	X	Fit-Up, Visual & NDT Checks, As applicable
19	W	-	W	H	X	Final Visual & Dimensional Check as per Approved Drawings
20	W	-	W	H	X	Verify / Check all components as per P&ID / Drawings
21	W	-	W	H	X	Check all connecting Piping as per P&ID / Drawings
						<b>Instrumentation Items</b>
22	R/W	-	R/W	H	X	Material TC Review, Functional Test for Instrument Items (As applicable)
23	R	-	R	H	X	Test Reports & Calibration Records for all Instruments. Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
24	R	-	R	H	X	Manufacturers Inspection / Test Reports
25	R	-	R	H	X	NACE Certificate for Sour Service
26	R	-	R	H	X	NDE Requirements (*100% Review for RT Films by LIA) (As applicable)
27	R	-	R	H	X	Certificate for Degree of Protection for Equipment Enclosure
28	RW	-	RW	H	X	Functional / Routine / Type / Range / Calibration Test for Gauges, Indicators, Transmitters and other Instruments
						<b>Piping &amp; Structural Skid</b>
29	R	-	R	H	X	Raw Materials Test Certificates for Major Sections, All Piping Items
30	R	-	R	H	X	WPS, PQR
31	R	-	R	H	X	NDT Checks, as applicable for Structures
32	RW	-	Rw	H	X	Hydrostatic & Pneumatic Test Reports for all Valves
33	RW	-	Rw	H	X	Flushing & Hydrostatic Test of Piping Loops & Spools (As applicable)
34	RW	-	Rw	H	X	Final Visual & Dimensional Check
						<b>Complete Skid Assembly</b>
35	W	-	W	H	X	System Integrity Test for the Complete Metering System at Vendor Works
36	W	-	W	H	X	FAT-System Functional Test / Simulation Test and Verification of Metering Skid, Metering Panel as per Approved PS / Data Sheet. 4 Hour Performance Test Including Functional Test of Instrumentation & Control Control panel functional test & Logic tests for the equipment package during FAT
37	W	-	W	H	X	Verify / Check all Components as per P&ID
38	W	-	W	H	X	Check all Connecting Piping as per P&ID


39	W	-	W	H	X	Final Visual & Dimensional Check of Complete Assembly
40	RW	-	Rw	H	X	Protective Coating (Final DFT & Visual Check)
41	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
42	W	W	-		X	Verification of items as per IRN
43	W	W			X	IMIR/GIIR on the basis of IRN
44	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

 <b>ONGC</b>	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>				<b>INSPECTION REQUIREMENT TABLE</b>		<b>IRT No.</b>	ODS/MECH/IRT/40
							<b>Rev No.</b>	0
							<b>Discipline</b>	Mechanical
ITEM : GDU System						INSPECTION CATEGORY : 'A'		
<b>Activity</b>	<b>1. Inspection by ONGC / Certification Agency.(CA)</b>							
	<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>							
	<b>3.Inspection by EPC / EPC Inspection Agency (IA)</b>							
	<b>4. Inspection by Vendor/ Sub Vendor</b>							
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>							
	<b>6. Stage of Inspection Involved</b>							
1	A	-	R	H		Quality Control Plan.		
2	A	-	A	H		Submission of WPS/PQR/WPQ and Procedures for NDT, Heat Treatment, Cladding, Surface Preparation & Paint Coating including NDT Operators qualification records.		
3	A	-	A	H		Submission of FAT & SAT Procedures.		
4	R	-	R	H		Statutory body certificates for Hazardous Area classification and Environmental protection for Instrumentation Items as applicable/approved PS		
5	R	-	R	H		Material Test Certificates / Confirmations for Chemical, Physical, Corrosion properties as per applicable Specifications / NACE as per approved PS and ONGC functional Specs.		
6	RW	-	RW	H		Material identification and Correlation of all pressure parts including Internals as per approved Drawing, PS and Data sheets.		
						<b>INLET SCRUBBER , GLYCOL CONTACTOR , GLYCOL FLASH DRUM , GLYCOL SURGE DRUM , STILL COLUMN , STRIPPING COLUMN , CARTRIDGE FILTERS , ACTIVATED CARBON FILTER , SUPPLY GAS SCRUBBER</b>		
7	RW	-	RW	H		Long Seam & Cir Seam set up for shell & fit up with dish ends		
8	RW	-	RW	H		Fit up & Orientation of Nozzles		
9	RW	-	RW	H		NDT Check Viz RT/UT/MT/PT as applicable per data sheet & specs.		
10	R	-	R	H		Post Weld Heat treatment Charts as applicable & Hardness check on weld if applicable.		
11	Rw	-	Rw	H		Check Final Visual & Dimensional		
12	Rw	-	Rw	H		Check Internals		
13	Rw	-	Rw	H		Pneumatic Test for RF Pads		
14	W	-	W	H		Hydro Static test		
15	RW	-	RW	H		Surface Preparation & Protective Coating as per Contract Specification		
16	W	-	W	H		Marking & Tagging		
17	W		W	H		ASME "U" Code stamping & certification as applicable		
18	W	-	W	H		Internal Surface Preparation & Coating / Lining As Applicable.		
						<b>LEAN GLYCOL EXCHANGERS</b>		
19	RW	-	Rw	H		Long Seam & Cir Seam set up for shell & fit up with dish ends		
20	W	-	W	H		Tube to Tube Sheet Mock Up Test if applicable		




21	RW	-	Rw	H	NDE for Welds as applicable.
22	RW	-	Rw	H	Heat Treatment Charts & Hardness check on welds if applicable.
23	Rw	-	W	H	Check orientation of Nozzles
24	RW	-	Rw	H	Check for dimension of Tube Sheet before & after Drilling.
25	W	-	W	H	Dimensional & Hardness check of Dish Ends (Heads).
26	W	-	W	H	Check for Leak Test on tube sheet with tube bundle.
27	W	-	W	H	Check final Assembly with headers/ channel covers.
28	W	-	W	H	Pneumatic Test for RF Pads
29	W	-	W	H	Hydro Static test of Shell side & Tube bundle side.
30	RW	-	RW	H	Surface Preparation & Protective Coating as per Contract Specification
31	W	-	W	H	Check of Insulation if applicable.
32	W	-	W	H	Check Marking/Tagging & ASME Code Stamping with Certification as applicable per Datasheets.
					<b>GLYCOL PUMPS</b>
33	W	-	W	H	Hydrostatic Test for Pump casing
34	W	-	W	H	Performance Test.
35	W	-	W	H	Noise & Vibration Level Check.
36	W	-	W	H	NPSH Test, If Required.
37	W	-	W	H	Dynamic balancing of shaft and rotor.
38	RW	-	Rw	H	NDE Requirements.
39	Rw	-	Rw	H	Visual & Dimensional Check.
40	RW	-	RW	H	Surface Preparation & Protective Coating as per Contract Specification
41	R	-	R	H	Check of Final Submission of Drawings & Documents of Inspection Records, Test Certificates.
					<b>STRUCTURAL SKID</b>
42	R	-	R	H	Raw Materials Test Certificates for Major Sections
43	R	-	R	H	NDT checks as per applicable for structures
44	W	-	W	H	Final Visual & Dimensional Check.
					<b>PIPING</b>
45	R	-	R	H	Materials Test Certificates / Reports for all Piping Items.
46	R	-	R	H	Hydro & Pneumatic Test Reports for all Valves.
47	W	-	W	H	Flushing & Hydro test of Piping loops & spools as applicable
					<b>INSTRUMENTATION</b>
48	R	-	R	H	Manufacturers Inspection / Test Reports
49	R	-	R	H	Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
50	R	-	R	H	Relief Valve Tests.
51	R	-	R	H	Certificates for Specified Enclosure class / Area classification as per Spes Datasheets.
52	R	-	R	H	Test Reports & calibration records for all instruments.
					<b>FINAL ASSEMBLY</b>
53	W	-	W	H	Verify / Check all components, insulation, colour coding, flow direction marking etc. as per P&ID.
54	W	-	W	H	Check Final Visual & Dimensional

55	RW	-	RW	H		Check for Protective Coating as per Contract Specification (Final DFT) , Asthetic View for workmanship.
56	W	-	W	H		FAT-System functional test as per approved PS / Data sheet. Including Functional Test of Instrumentation & Control & Hard Stamping on material for Identification at site/offshore.
57	Is	-	R	H		Reviewing of Final Documentation/Dossier.
IMIR/GIIR at Yard/Offshore						
58	W	W	-		X	Verification of items as per IRN
59	W	W			X	IMIR/GIIR on the basis of IRN
40	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/41
						Rev No.	0
						Discipline	Mechanical
ITEM : Gas Sweetening & Regeneration Package					INSPECTION CATEGORY : 'A'		
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC / EPC Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
1	A	-	R	H	X	Quality Control Plan	
2	A	-	A	H	X	Submission of WPS/PQR/WPQ and Procedures for NDT, Heat Treatment, Cladding, Surface Preparation & Paint Coating including NDT Operators qualification records.	
3	A	-	A	H	X	Submission of FAT & SAT Procedures.	
4	R	-	R	H	X	Statutory body certificates for Hazardous Area classification and Environmental protection for Instrumentation Items as applicable/approved PS	
5	R	-	R	H	X	Material Test Certificates / Confirmations for Chemical, Physical, Corrosion properties as per applicable Specifications / NACE as per approved PS and ONGC functional Specs.	
6	RW	-	RW	H	X	Material identification and Correlation of all pressure parts including Internals as per approved Drag/PS and Data sheets.	
						AMINE ABSORBER, FLASH DRUM,SCRUBBER,FILTERS, REACTIVATOR,ACCUMULATORS, KNOCK OUT DRUMS	
7	RW	-	RW	H	X	Long Seam/Cirseam Joint fit ups (Shell to Shell, Shell to Dished end and )	
8	Rw	-	W	H	X	Dimensional & NDT (DPT/MPT) check for Dished ends.	
9	W	-	W	H	X	Check for Nozzles orientation and fit-ups.	
10	Rw	-	Rw	H	X	Visual & NDT check for weld joints as applicable.	
11	RW	-	RW	H	X	Post Weld Heat treatment records/charts & Hardness check on weld and parent material as applicable.	
12	W	-	W	H	X	Fitment and alignment of Internals as per Approved Drgs/ Data sheets.	
13	W	-	W	H	X	Pneumatic Test for RF Pads	
14	W	-	W	H	X	Final Visual, Dimensional check.	
15	W	-	W	H	X	Hydro Static pressure test.	
16	W	-	W	H	X	Internal Surface Preparation & internal lining as applicable.	
17	Rw	-	Rw	H	X	Surface Preparation & Protective Coating application as per Contract Specification	
18	Rw	-	W	H	X	Check for final paint coating DFT and Assthetic view for workmanship.	
19	W	-	W	H	X	ASME "U" Code stamping & certification as applicable	
						HEAT EXCHANGERS, REBOILERS	
20	RW	-	Rw	H	X	Long Seam & Cir Seam set up for shell & fitup with dish ends	
21	W	-	W	H	X	Check for Nozzle orientation and fit-up.	
22	W	-	W	H	X	Tube to Tube Sheet MockUp Test if applicable	

23	Rw	-	Rw	H	X	Visual & NDT check for weld joints as applicable.
24	W	-	W	H	X	Check for Tubes expansion and NDT on Tube to Tube sheet weld joints.
25	RW	-	Rw	H	X	Heat Treatment Charts & Hardness check on welds as applicable.
26	W	-	W	H	X	Check for dimension of Tube Sheet before & after Drilling.
27	Rw	-	W	H	X	Dimensional & Hardness check of Dish Ends (Heads).
28	W	-	W	H	X	Check for Leak Test on tube sheet with tube bundle.
29	W	-	W	H	X	Check final Assembly with headers/ channel covers.
30	W	-	W	H	X	Pneumatic Test for RF Pads
31	W	-	W	H	X	Hydro Static test of Shell side & Tube bundle side.
32	Rw	-	Rw	H	X	Surface Preparation & Protective Coating as per Contract Specification
33	W	-	W	H	X	Check Marking/Tagging & ASME Code Stamping with Certification as applicable per Datasheets.
						<b>PUMPS (AMINE PUMPS, ANTI FOAM PUMP, BOOSTER PUMPS ETC.)</b>
34	W	-	W	H	X	Dynamic balancing of shaft and rotor (as applicable).
35	R	-	R	H	X	NDE on Castings & welds as applicable.
36	W	-	W	H	X	Hydrostatic Test for Pump Casing.
37	W	-	W	H	X	Performance Test including Noise & Vibration level check.
38	W	-	W	H	X	NPSH Test (if applicable as per Data sheet).
39	W	-	W	H	X	Visual & Dimensional Check.
42	RW	-	RW	H	X	Surface Preparation & Protective Coating as per Contract Specification
						<b>PIPING &amp; STRUCTURAL SKID</b>
43	R	-	R	H	X	Raw Materials Test Certificates for Major Sections
44	R	-	R	H	X	NDT checks as per applicable for structures
45	Rw	-	W	H	X	Final Visual & Dimensional Check.
46	R	-	R	H	X	Materials Test Certificates / Reports for all Piping Items.
47	Rw	-	Rw	H	X	Hydro & Pneumatic Test Reports for all Valves.
48	W	-	W	H	X	Flushing & Hydro test of Piping loops & spools as applicable
						<b>INSTRUMENTATION</b>
49	R	-	R	H	X	Manufacturers Inspection / Test Reports
50	R	-	R	H	X	Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
51	R	-	R	H	X	Type test Certificates.
52	R	-	R	H	X	Test Reports & calibration records for all instruments.
						<b>FINAL ASSEMBLY</b>
53	W	-	W	H	X	Verify / Check all components, insulation, colour coding, flow direction marking etc.as per P&ID.
54	W	-	W	H	X	Check Final Visual & Dimensional
55	RW	-	RW	H	X	Check for Protective Coating as per Contract Specification (Final DFT) , Asthetic View for workmanship.
56	W	-	W	H	X	FAT-System functional test as per approved PS / Data sheet. Including Functional Test of Instrumentation & Control & Hard Stamping on material for Identification at site/ offshore.
57	Is	-	R	H	X	Reviewing of Final Documentation/Dossier & issue of IRN

IMIR/GIIR at Yard/Offshore						
58	W	W	-		X	Verification of items as per IRN
59	W	W			X	IMIR/GIIR on the basis of IRN
59	W	W		A	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/42
							Rev. No.	0
							Discipline	Mechanical
Item: HP & LP Flare Tip				Inspection Category : B				
ACTIVITY	1. Inspection by ONGC / Certification Agency CA.							
		2. Inspection by ONGC/Third Party Inspection Agency (TPI)						
			3. Inspection by EPC / EPC Inspection Agency (IA)					
				4. Inspection by Vendor/ Sub vendor				
					5. Certificate / Data to be submitted by vendor for review/approval.			
					6. STAGES OF INSPECTION INVOLVED.			
No								
1	A	----	R	H	X	Inspection and Test Plan (ITP)		
2	A	-	R	H	X	FAT Procedure of complete Unit		
						General Requirements (As applicable)		
3	R	----	R	H	X	Noise Level Design Report		
4	R	----	R	H	X	Radiation Level Design Report		
						Before Start of Fabrication		
5	A		R	H	X	WPS/PQR and WPQ		
						During Fabrication		
6	R/W	----	R/W	H	X	Material Identification & MTC review		
7	RW	----	R/W	H	X	Visual & Dimensional Inspection		
8	R	----	R/W	H	X	NDT (RT, PT), PMI, etc. as per spec.(100% review of RT films by TPI & at random by CA)		
9	RW	----	RW	H	X	Hydro test- as applicable		
						Instruments Items		
10	RW	----	R/W	H	X	Type, Range, Model, Connection type/ size, Tagging		
11	W	----	W	H	X	Final Visual & Dimensional Inspection, P&ID Verification, Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT		
						Other Requirements		
12	R	----	R	H		Review of Test Procedures & Reports		
13	R	----	R	H	X	Review of Final Documentation to comply with spec. requirements		
14	W	----	W	H	X	Final Packing inspection for completeness during / after packing-tagging, preservation, packing including spares		
15	Is	----	R	H	X	Issue of Inspection Release Note		
IMIR/GIIR at Yard/Offshore								
16	W	W			X	Verification of items as per IRN		

17	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.	REV. No.	REV. DATE:	
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 <b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>	<b>INSPECTION REQUIREMENT TABLE</b>					<b>IRT No.</b>	<b>ODS/MECH/IRT/43</b>
						<b>Rev No.</b>	<b>0</b>
						<b>Discipline</b>	<b>Mechanical</b>
<b>ITEM : Travelling Bridge Crane / Electric Hoist</b>						<b>Inspection Category : "B"</b>	
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>						
		<b>2. Inspection by ONGC / Third Party Inspection Agency (TPI)</b>					
			<b>3. Inspection by EPC Inspection Agency</b>				
				<b>4. Inspection by Vendor / Sub Vendor</b>			
					<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.</b>		
						<b>6. Stage of Inspection Involved</b>	
						<b>General</b>	
1	A	-	R	H	X	Inspection and Test Plan	
2	A	-	R	H	X	Factory Acceptance Test Procedure (FAT)	
3	R	-	R	H	X	Material Test Certificates, Hazardous Area Classification & IP Certificates, Type Test, Routine Test & Area classification Certificates for E&I Items, Test Certificates of Bought out Items, Test Records & Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedures, Surface Preparation & Protective Coating Procedures, WPS/ PQR	
						<b>Fabrication of Girders</b>	
5	R	-	R	H	X	Material Identification & Correlation with MTC	
6	R/W	-	R/W	H	X	Weld Visual, Dimensional & NDT Check (As applicable)	
						<b>Assembly</b>	
7	RW	-	Rw	H	X	Check for Individual End-Carriage Wheel Alignment, Dimensional & Long Travel Speed, Camber, Cross Travel Rail Alignment, Span & Diagonals etc.	
8	RW	-	Rw	H	X	Main Girders with End-Carriage Assembly Check	
						<b>Testing</b>	
9	W	-	W	H	X	Load Test (Full Load & Over Load) & Factory Acceptance Test (FAT)	
10	RW	-	Rw	H	X	Protective Coating (Final DFT & Visual Check)	
11	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note	
<b>IMIR/GIIR at Yard/Offshore</b>							
12	W	W	-		X	Verification of items as per IRN	
13	W	W			X	IMIR/GIIR on the basis of IRN	
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>							
<b>LEGENDS &amp; NOTES : Explained Separately</b>							




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 <div>ओएनजीसी ONGC</div>	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/44
						Rev No	0
						Discipline	Mechanical
Item : Jet Fuel System & ATF Pump						Inspection Category : "A"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
		2. Inspection by ONGC / Third Party Inspection (TPI)					
			3. Inspection by EPC Inspection Agency (IA)				
					4. Inspection by Vendor / Sub Vendor		
						5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval	
						6. Stage of Inspection Involved	
						General	
1	A	-	R	H	X	Inspection and Test Plan	
2	R	-	R	H	X	Material Identification, Material Test Certificates and Records	
3	A	-	R	H	X	Hydro Test Procedure, FAT Procedure, Pneumatic Test Procedure (As applicable)	
4	A	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, Welding Procedure,	
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items (as applicable)	
6	R	-	R	H	X	List/Index of Documents which will be part of Final Submission as Manufacturing Record Book (MRB)	
						Inspection & Testing	
						ATF STORAGE TANKS/REFUELLING VESSELS & FILTER COALESCER	
7	R	-	R	H	X	WPS/PQR/WPQ & REPAIR REPORTS (As Applicable)	
8	W	-	W	H	X	Material Identification for Pressure Parts Viz. Plates, Pipes, Flanges, Fittings, Dish Ends, Filter Elements, Heater, Fasteners etc. & Review of Test Certificates.	
9	RW	-	RW	H	X	Stage inspection Viz. Shell/Dish Set up, Root/Back chip D.P, Nozzle Set up, Dimensional Check/DP check of Dish Ends, Tube Sheet Inspection, Piping Assembly, as applicable.	
10	R/W	-	R/W	H	X	Weld Visual and NDT(RT/UT/MPT/PT) as applicable	
11	R	-	R	H	X	Heat treatment, As applicable.	
12	W	-	W	H	X	Hydrostatic Test for Pressure Containing Parts.	
13	RW	-	RW	H	X	Pneumatic Test As Applicable	
14	W	-	W	H	X	Final Visual, Dimensional Inspection & internal checks.	
15	RW	-	RW	H	X	Surface preparation and Protective Coating.	
						INSTRUMENTATION ITEMS	

16	R	-	R	H	X	Manufacturer's Test Certificates / Compliances for Control Panel, transmitters, Digital metering system etc.
17	RW	-	W	H	X	Functional check for control panels. Instruments as per approved Instrument data sheets
18	R	-	R	H	X	Hazardous area classification of equipments by BASEEFA, UL or Equivalent as applicable. Control panel functional test & Logic tests for the equipment package during FAT
19	R	-	R	H	X	Calibration reports / test certificates / compliances (as applicable) for all items
20	R	-	R	H	X	Enclosure classification and IP Certificates (As applicable)
						<b>TRANSFER PUMPS</b>
21	R	-	R	H	X	Manufacturer's Test Certificates / Compliance Certificates for major components including bought out items.
22	R	-	R	H	X	NDT of pump components & piping as required.in specs.
23	RW	-	RW	H	X	Bought out items.
24	W	-	W	H	X	Visual check of major components before assembly.
25	W	-	W	H	X	Hydro static testing of pump casing.
26	W	-	W	H	X	NPSH Test (if applicable).
27	W	-	W	H	X	Performance & mechanical run test at rated RPM.
28	W	-	W	H	X	Noise and vibration compliance reports.
29	W	-	W	H	X	Final inspection of pump
30	RW	-	RW	H	X	Surface preparation and Protective Coating.
						<b>CONNECTING VALVE PIPING AND HOSE CONNECTION</b>
31	R	-	R	H	X	Material Test Certificates and Records.
32	R	-	R	H	X	Raw Material Identification.
33	R/W	-	R/W	H	X	NDE Requirements (RT/UT/MPI/DPT - As Applicable)
34	W	-	W	H	X	Final, Visual, Dimensional Inspection
35	W	-	W	H	X	Hydro Testing.
						<b>STRUCTURAL SKID</b>
36	R	-	R	H	X	Review of MTCs for All Structural Items.
37	R	-	R	H	X	Review of WPSs, PQRs and WPQs.
38	R	-	R	H	X	NDT as application
39	W	-	W	H	X	Check Final Visual and Dimensions
						<b>SKID ASSEMBLY IN TOTAL</b>
40	RW	-	RW	H	X	Verify / Check All components including Piping as per P & ID.
41	W	-	W	H	X	Check Final Visual and Dimensions of complete assembly.

42	W	-	W	H	X	System integrity test for the complete metering system as per approved PS / Data sheet at vendor's place.
43	W	-	W	H	X	FAT - System functional test / Simulation test and verification of metering skid, metering panel as per approved PS / Data sheet.
44	RW	-	RW	H	X	Surface preparation and Protective Coating.
45	R	-	R	H	X	Review of Final Documents.
IMIR/GIIR at Yard/Offshore						
46	W	W	-		X	Verification of items as per IRN
47	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Seperatetely</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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 <div>ओएनजीसी ongc</div>	Offshore Design Section Engineering Services (ISO – 9001:2008)					INSPECTION REQUIREMENT TABLE					IRT No.	ODS/MECH/IRT/45
											Rev. No.	0
											Discipline	Mechanical
ITEM : Diesel Centrifuge						Inspection Category : "B"						
Activity No.	1. Inspection by ONGC / Certification Agency (CA)											
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)											
	3. Inspection by EPC Inspection Agency											
	4. Inspection by Vendor / Sub Vendor											
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval											
	6. Stage of Inspection Involved											
1	A	-	A	H	X	Inspection and Test Plan						
2	RW	-	RW	H	X	Material Identification, Material Test Certificates and Traceability Records						
Diesel Centrifuge												
	R	-	R	H	X	MTC Review, Traceability Check & inspection of Individual Components						
3	RW	-	Rw	H	X	Final Visual & Dimensional Check						
4	W	-	W	H	X	Leakage Test, Performance Test						
5	W	-	W	H	X	Separation Efficiency, Diesel Outlet Pressure, Operation Check, Capacity, Noise and Vibration Check						
6	R	-	R	H	X	Type Test Report for Hazardous area classification						
Feed Pumps												
8	R	-	R	H	X	MTC Review, Traceability Check & inspection of Individual Components						
9	R	-	R	H	X	Rotor Dynamic Balancing						
10	RW	-	RW	H	X	Hydrostatic Test for Casing & Piping						
11	W	-	W	H	X	Performance Test, String Test, Strip Down Test, Noise and Vibration Level Check						
12	R	-	R	H	X	Type Test REPORT for Hazardous Area Classification						
Control Panel and Instrumentation Items												
13	W	-	W	H	X	Check Functional, Simulation & Calibration Test for all applicable components, HV / IR Test, Type Test Reports for Enclosure Protection, Test Certificates Records for Components Viz MCCB etc.						
14	W	-	W	H	X	Final Visual & Dimensional Check, Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.						
15	W	-	W	H	X	Logic & Scheme Check of Control System Inclusive of Control Panel						
16	R	-	R	H	X	Bill of Material Check Up						

<b>Valves (PSV, PCV etc.)</b>						
17	R	-	R	H	X	Material Test Certificates for Valve Body, Trim Components etc.
18	R	-	R	H	X	NDT Examination Records
19	RW	-	RW	H	X	<b>Routine Tests Consists of :</b>
20	W		W	H	X	Visual and Dimensional Check of all Assembled Valves with Accessories
21	RW		RW	H	X	Hydrostatic Test for Body, Nozzle etc. (As applicable)
22	RW		RW	H	X	Functional Checks (Operation, Valve Lift, Set Pressure Test, as applicable)
23	R		R	H	X	Type Test REPORT Certificates (As applicable)
24	R		R	H	X	Certificates for Hazardous Area Classification & Enclosure Class for Applicable Items
<b>Skid Piping Fabrication</b>						
25	R	-	R	H	X	WPS, PQR for Structural Welding
26	W	-	W	H	X	Final Visual & Dimensional Check
27	R	-	R	H	X	NDE Requirements
28	RW	-	W	H	X	Leak Test of Tanks, Final Performance Test for Whole Unit in Assembled Condition
29	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)
30	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
<b>IMIR/GIIR at Yard/Offshore</b>						
31	W	W	-		X	Verification of items as per IRN
32	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)	INSPECTION REQUIREMENT TABLE	IRT No.	ODE/MECH/IRT/46
			Rev. No.	0
			Discipline	Mechanical

ITEM : Monorail (Electric) Hoist	Inspection Category : B
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Activity No.	1. Inspection by ONGC / Certification Agency (CA).					
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)					
	3. Inspection by EPC / EPC's Inspection Agency (IA)					
	4. Inspection by Vendor/Sub Vendor					
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.					
	6. STAGES OF INSPECTION INVOLVED.					
1	A	-	R	H	X	Approval of Inspection & Test Plan (ITP) and FAT & SAT procedure of the complete unit from vendor.
						<b>General Inspection :</b>
2	RW	-	RW	W	X	Visual Inspection, Verification for model, range, Name plate/ Tag plate, etc.
3	RW	-	RW	W	X	Dimensional Inspection, Alignment, etc.
4	RW	-	RW	W	X	Hook and wire rope- material and safe working load(SWL) test certificate and NDT as applicable
5	RW	-	RW	W	X	Wire rope lubrication, inspection for any kinks, cuts, breaks or crushing of strands etc.
6	RW	-	RW	W	X	Length of wire rope (minimum two turns on rope drum when lowered to the maximum)
						Performance Test :
7	RW	-	RW	W	X	Vibration measurement.
8	RW	-	RW	W	X	Static load test and overload test (as per Code and Specification), followed by NDT of critical components for any damage.
9	W	-	W	W	X	Lowering/Descend and hoisting speed and measurement of current under full load.
10	W	-	W	W	X	Hoisting limit switches setting and function test.
11	W	-	W	W	X	Lift and reach check
12	W	-	W	W	X	Centrifugal brake check - to stop over speeding during lowering.
13	W	-	W	W	X	Manual cranking for hoisting - in case of electrical failure.
14	R	-	R	W	X	Review of final documentation to comply with specification requirements.
15	Rw	-	Rw	W	X	Surface preparation & protective coating (Visual & Final paint DFT check as per 2005 spec.).
16	W	-	W	W	X	FAT of the complete unit
17	RW	-	W	W	X	Final package inspection for completeness during / after packaging - tagging, preservation, packing including spares.
18	Is		R	H	X	Review of Docs & Inspection Release note.

Note1: Refer Applicable Electrical IRT for Electrical Equipments/Items.

Note2: LEGENDS & NOTES: Explained separately

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	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>	<b>INSPECTION REQUIREMENT TABLE</b>	IRT No.	ODE/MECH/IRT/46
			Rev. No.	0
			Discipline	Mechanical


IMIR/GIIR at Yard/Offshore						
19	W	W	-		X	Verification of items as per IRN
20	W	W			X	IMIR/GIIR on the basis of IRN
21	W	W		H	X	SAT/Offshore Pre-commissioning, Commissioning & Testing at offshore.

Note1: Refer Applicable Electrical IRT for Electrical Equipments/Items.


Note2: LEGENDS & NOTES: Explained separately

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 <b>ONGC</b>		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.		ODS/MECH/IRT/47				
						Rev. No.		0				
						Discipline		Mechanical				
Item: FILTERS					Inspection Category : A							
ACTIVITY	1. Inspection by ONGC / Certification Agency CA.											
		2. Inpection by ONGC/Third Party Inspection Agency (TPI)										
			3.Inspection by EPC / EPC Inspection Agency (IA)									
				4. Inspection by Vendor/sub vendor								
				5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.								
				No					6. STAGES OF INSPECTION INVOLVED.			
1	A	----	R	x	X	Approval of Inspection and Test Plan (ITP) of vendor						
						Before Start of Fabrication						
	A	----	R	x	X	WPS and PQR Approval						
2	R	----	R	x	X	Welder Qualification (WPQR)						
						During Fabrication						
3	R/W	----	R/W	x	X	Material Identification, Verification and Marking (low stress punch mark transfer) and traceability, Review of certificates (NACE as applicable)						
4	RW	----	RW	x	X	Shell bending / Forming						
5	RW	----	RW	x	X	Weld joint fit-up inspection						
6	W	----	W	x	X	Dimensional inspection, Nozzles orientation and level check						
7	RW	----	RW	x	X	Weld visual inspection						
8	R	----	R	x	X	Post Weld Heat Treatment records/charts (where required)						
9	RW	----	RW	x	X	NDT of all weld joints (RT, UT, MT, PT), Hardness, PMI, etc. as per spec.(100% review of RT films by TPI & at random by CA)						
10	R	----	W	x	X	Pneumatic test of RF Pads						
11	W	----	W	x	X	Final Visual & Dimensional inspection of equipment						
12	W	----	W	x	X	Hydro-Test and drying of Vessel						
13	R	----	R	x	X	Review of certificates for filter element including material compliance, Strainer, dimensions & fixing arrangement						
						Surface Preparation and Painting / Coating						
15	RW	----	RW	x	X	Surface Preparation of vessel after shot blasting						
16	RW	----	RW	x	X	Painting / Coating inspection as per ONGC spec.						
17	W	----	W	x	X	Vessel Internals Inspection- Cleanliness and completeness, before box-up						
18						Other Requirements						
19	R	----	R	R	X	Review of Final Documentation to comply with spec. requirements.						

						Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.
20	W	----	W	W	X	Final Packing inspection for completeness during / after packing- tagging, preservation, packing including spares
21	Is	----	R	x	X	Verification of docs & Inspection Release Note
22	W	W	-		X	Verification of items as per IRN
23	W	W			X	IMIR/GIIR on the basis of IRN
*Refer Applicable Electrical IRT for Electrical Equipments/Items						
LEGENDS & NOTES : Explained Separately						
FORMAT No.			Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
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	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No</b>	ODS/MECH/IRT/48
							<b>Rev No</b>	0
							<b>Discipline</b>	Mechanical
Item : Air/Natural Gas Operated Double Diaphragm Pump						Inspection Category : "B"		
<b>Activity No.</b>	<b>1. Inspection by ONGC / Certification Agency (CA)</b>							
	<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>							
	<b>3. Inspection by Contractor / Contractor's Inspection Agency</b>							
	<b>4. Inspection by Vendor/ Sub Vendor</b>							
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>							
	<b>6. Stage of Inspection Involved</b>							
1	-	-	W	H	-	Pre-inspection Meeting/Expediting		
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan		
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Statutory Body Certificates (as applicable), Instrument calibration, Test Certificates of Bought out Items ((Pump Seal System, Pulsation Dampener, valves and other miscellaneous items), Test Records and Compliance to other PS Requirements		
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)		
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure		
	W		W	H	X	Hydrostatic Testing		
6	W	-	W	H	X	Run Test, Performance Test on complete unit package (including Pressure Relief Valve Check),NPSH Test, Noise Test , Vibration Test as applicable		
7	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components, Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.		
8	R	-	R	H	X	Test Result correlation report for Speed, Viscosity & Specific Gravity Conditions (as applicable)		
9	RW	-	RW	H	X	Protective Coating (Final DFT and Visual Check)		
10	W	-	W	H	X	Final skid inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping		
11	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note		
IMIR/GIIR at Yard/Offshore								
46	W	W	-		X	Verification of items as per IRN		
47	W	W			X	IMIR/GIIR on the basis of IRN		
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>								

**LEGENDS & NOTES : Explained Separately**


 <b>ओएनजीसी</b> <b>ONGC</b>	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>			<b>IRT No.</b>	ODS/MECH/IRT/49
						<b>Rev No.</b>	0
						<b>Discipline</b>	Mechanical
ITEM : LP Gas Compressor Package/Screw Gas compressor						INSPECTION CATEGORY.: 'A'	
<b>Activity</b>	<b>1. Inspection by ONGC / Certification Agency.(CA)</b>						
	<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>						
	<b>3.Inspection by EPC / EPC Inspection Agency (IA)</b>						
	<b>4. Inspection by Vendor/ Sub Vendor</b>						
	<b>5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>						
	<b>6. Stage of Inspection Involved</b>						
1	A	-	R	H		Inspection test Plan.	
2	A	-	R	H	X	FAT Procedure of complete Unit	
						<b>SCREW TYPE COMPRESSOR :</b>	
3	Rw	-	Rw	H		Material identification for compressor components as listed in QAP.	
4	W	-	W	H		Performance test of the compressor including load test for 4 hours as per approved procedure.	
5	W	-	W	H		Mechanical/Functional Test of the compressor	
6	RW	-	RW	H		Protective Coating & Visual inspection.	
7	Is	-	R	H		Review of final documentation and issue of inspection release note.	
						<b>PRESSURE VESSELS (INTERSTAGE RECEIVERS, COOLERS, AIR PRE/AFTER FILTERS) ALL REQUIREMENTS OF ASME INSPECTOR (AS APPLICABLE) SHALL BE MET.</b>	
8	W	-	W	H		Final dimensional check and mechanical clearance and visual inspection.	
9	W	-	W	H		Hydrostatic test and Pneumatic test	
10	Rw	-	RW	H		Protective coating and visual inspection (As applicable)	
						<b>FABRICATION OF SPOOLS (CONNECTING PIPING)</b>	
11	R	-	R	H		Material test certificates and records	
12	W	-	W	H		Final dimensional inspection and mechanical clearance and visual inspection.	
13	W	-	W	H		Hydrostatic test & Pneumatic testing	
14	Rw	-	RW	H		Protective coating and visual inspection (As applicable)	
						<b>ALL INSTRUMENTATION</b>	
15	R	-	R	H		Manufacturer's TC / Certificate of conformity review (As applicable)	
16	R	-	R	H		Enclosure class certificate for instrument panel.	
17	W	-	W	H		Functional and simulation tests for sequence logic alarm and shutdown functions. Instruments as per approved Instrument data sheets.	
18	W		W	H		Functional and simulation test for local control panels	
19	Rw	-	Rw	H		Functional / Routine / Type / Calibration test for Gauges, Indicators, Flow, Instrument Transmitters etc. (As applicable)	
						<b>STRUCTURAL SKID</b>	
20	W	-	W	H		Check final visual and dimensional inspection	
						<b>SKID ASSEMBLY IN TOTAL</b>	

21	W	-	W	H		Verify / check all components as per P&ID	
22	W	-	W	H		Check all connecting piping as per P&ID	
23	W	-	W	H		Check final, visual and dimensions of the complete assembly	
24	RW	-	RW	H		Surface preparation and protective coating and visual inspection (As applicable)	
25	R	-	R	H		Review of final documentation.	
26	Is	-	R	H		Issue of Inspection Release Note.	
IMIR/GIIR at Yard/Offshore							
23	W	W	-		X	Verification of items as per IRN	
24	W	W			X	IMIR/GIIR on the basis of IRN	
*Refer Applicable Electrical IRT for Electrical Equipments/Items							
LEGENDS & NOTES : Explained Separately							
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 <b>ओएनजीसी</b> <b>ONGC</b>	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>			<b>IRT No.</b>	ODS/MECH/IRT/50
						<b>Rev No.</b>	0
						<b>Discipline</b>	Mechanical
Item : Hot Oil Pump						Inspection Category : "A"	
Activity No.	<b>1. Inspection by ONGC / Certification Agency (CA)</b>						
		<b>2. Inspection by ONGC / Third Party Inspection (TPI)</b>					
			<b>3. Inspection by Contractor / Contractor's Inspection Agency (IA)</b>				
				<b>4. Inspection by Vendor/ Sub Vendor</b>			
					<b>5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>		
						<b>6. Stage of Inspection Involved</b>	
						<b>General</b>	
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Instrument calibration, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items (As applicable)	
6	A	-	R	H	X	Tests/FAT Procedure including Hydrostatic Test Procedure	
7	W		W	H	X	Stage inspection e.g Fit up, weld, hydrotest (as applicable)	
						<b>Pump</b>	
8	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
9	R	-	R	H	X	Dynamic Balancing report of rotor assembly	
10	R/W	-	W	H	X	Hydrostatic Test of Casing, Discharge Header	
11	R	-	R	H	X	NDT as applicable	
12	W	-	W	H	X	Mechanical Seal and its component checking (in case of centrifugal pump)	
13	W	-	W	H	X	Mechanical Run Test	
14	W		W	H	X	Check/Verify the completeness components Case wear ring, Impeller wear ring etc.	
15	W	-	W	H	X	Performance Test (at Shut off, at Minimum Flow Rate, at Rated Flow and at 125% Capacity) on complete unit package, Endurance test for 4 hours, NPSH Test (one identical pump), Noise Test , Vibration Test	

16	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components
17	R	-	R	H	X	Test Result correlation report for Speed, Viscosity & Specific Gravity Conditions (as applicable)
18	W	-	W	H	X	Strip Down test for checking any abnormal rubbing or wear
						<b>Instrumentation and Control</b>
19	W	-	W	H	X	Final Visual, Dimensional Check
20	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports, Control panel functional test & Logic tests for the equipment package during FAT. Instruments as per approved Instrument data sheets.
21	W	-	W	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check
						<b>Complete Skid Assembly</b>
22	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
23	R	-	R	H	X	NDE (RT, UT, MPI, DPI) as applicable
24	R	-	R	H	X	Heat treatment as applicable
25	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
26	RW	-	RW	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping
27	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items.</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
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	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/51
						Rev No	0
						Discipline	Mechanical
ITEM : Reciprocating Gas Compressor Package/Fuel Gas compressor						INSPECTION CATEGORY.: 'A'	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3.Inspection by EPC / EPC Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	6. Stage of Inspection Involved						
1	A	-	R	H	x	Inspection test Plan.	
2	A	-	R	H	X	FAT Procedure of complete Unit	
						RECIPROCATING TYPE COMPRESSOR :	
3	RW	-	RW	H	x	Material identification for compressor components as listed in QAP.	
4	W	-	W	H	x	Performance test of the compressor including load test for 4 hours as per approved procedure.	
5	W	-	W	H	x	Mechanical/Functional Test of the compressor	
6	Rw	-	Rw	H	x	Protective Coating & Visual inspection.	
7	R	-	H	H	x	Review of final documentation and issue of inspection release note.	
						PRESSURE VESSELS (INTERSTAGE RECEIVERS, COOLERS, AIR PRE/AFTER FILTERS) ALL REQUIREMENTS OF ASME INSPECTOR (AS APPLICABLE) SHALL BE MET.	
8	W	-	W	H	x	Final dimensional check and mechanical clearance and visual inspection.	
9	W	-	W	H	x	Hydrostatic test and Pneumatic test	
10	Rw	-	W	H	x	Protective coating and visual inspection (As applicable)	
						FABRICATION OF SPOOLS (CONNECTING PIPING)	
11	R	-	R	H	x	Material test certificates and records	
12	RW	-	RW	H	x	Final dimensional inspection and mechanical clearance and visual inspection.	
13	W	-	W	H	x	Hydrostatic test & Pneumatic testing	
14	Rw	-	W	H	x	Protective coating and visual inspection (As applicable)	
						INSTRUMENTATION	
15	R	-	R	H	x	Manufacturer's TC / Certificate of conformity review (As applicable). Control panel functional test & Logic tests for the equipment package during FAT	
16	R	-	R	H	x	Enclosure class certificate for instrument panel. Calibration certificates for instruments, Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Instruments as per approved Instrument data sheets.	
17	W	-	W	H	xx	Functional and simulation tests for sequence logic alarm and shutdown functions.	
18	W		W	H		Functional and simulation test for local control panels	


19	Rw	-	RW	H	x	Functional / Routine / Type / Calibration test for Gauges, Indicators, Flow, Instrument Transmitters etc. (As applicable)
						<b>STRUCTURAL SKID</b>
20	W	-	W	H	x	Check final visual and dimensional inspection
						<b>G. SKID ASSEMBLY IN TOTAL</b>
21	W	-	W	H	x	Verify / check all components as per P&ID
22	W	-	W	H	x	Check all connecting piping as per P&ID
23	W	-	W	H	x	Check final, visual and dimensions of the complete assembly
24	Rw	-	W	H	x	Surface preparation and protective coating and visual inspection (As applicable)
25	R	-	R	H	x	Review of final documentation.
25	Is	-	R	H	x	Issue of Inspection Release Note.
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						08.03.2016

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						Rev No.	0
						Discipline	Mechanical
Item: Centrifugal Pumps for miscellaneous use (eg. Pot Water, Cooling Water etc.)					Inspection Category : "B"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)						
	2. Inspection by ONGC / Third Party Inspection (TPI)						
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)						
	4. Inspection by Vendor/ Sub Vendor						
	5.Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval						
	Stage of Inspection Involved						
1	-	-	W	H	-	Pre-inspection Meeting/Expediting	
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan	
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Instrument calibration, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements	
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)	
5	A	-	R	H	X	FAT Procedure & Hydrostatic Test Procedure	
6	R	-	R	H	X	Material Identification, MTC Review & Records of Pump Casing, Impeller, Shaft	
7	R	-	R	H	X	Dynamic Balancing report of rotor assembly	
8	R	-	Rw	H	X	Hydrostatic Test of Casing Discharge Header & Column Pipes	
9	R	-	R	H	X	NDT as applicable	
10	W	-	W	H	X	Mechanical Seal and its component checking	
11	W	-	W	H	X	Mechanical Run Test	
12	W	-	W	H	X	Performance Test on complete unit package, NPSH Test (one identical Pump), Noise Test , Vibration Test	
13	W	-	W	H	X	Final Visual, Dimensional Check of Individual Components	
14	R	-	R	H	X	Test Result correlation report for Speed, Viscosity & Specific Gravity Conditions (as applicable)	
18	R	-	R	H	X	Check/verify of items/equipment of complete skid, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items	
19	R	-	R	H	X	NDE (RT, UT, MPI, DPI) and PWHT as applicable	
20	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)	

21	W	-	W	H	X	Final inspection including visual, dimensional check, completeness after packing (including spares), name plate verification, tagging, preservation and preparation for shipping
22	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)				INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/ Safety 01
								Rev No.	0
								Discipline	Mechanical
Item : DCP Skid								Inspection Category : "B"	
Activity No.	1. Inspection by ONGC / Certification Agency (CA)								
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
			3. Inspection by EPC / EPC's Inspection Agency (IA)						
				4. Inspection by Vendor / Sub Vendor					
						6. Stage of Inspection Involved			
						General			
1	A	-	R	H	X	Inspection and Test Plan			
2	A	-	R	H	X	FAT Procedure of complete Unit			
3	R	-	R	H	X	Material Identification Report of Pressure Vessel, Review of Material Test Certificates/ Compliance Certificate for all Major Components			
4	A	-	R	H	X	WPS, PQR, NDE and Surface Preparation & Protective Coating Procedures			
						Testing & Inspection			
						Dry Chemical Container			
5	R	-	R	H	X	NDE Requirements (As applicable)			
6	W	-	W	H	X	Visual, Dimensional Check and Mechanical Clearance			
7	W	-	W	H	X	Hydrostatic Test of Containers/ Vessels			
8	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)			
9	W	-	W	H	X	ASME Code Stamping (As applicable)			
						Control Valves, Pressure Gauges, Pressure Relief Valves, Rupture Disc			
10	R/W	-	R/W	H	X	Verify Certificates, ASME Code Stamping for LDC Tank Pressure Vessel Relief Valve (As applicable) Certificate of Conformity for IP/ NEMA Enclosure Class for all instruments and valves. Calibration certificates for instruments. Control valve functional check.			
						Hose Reels			
11	W	-	W	H	X	Verify UL Listings			
						Skid Structure Fabrication and Assembly			
12	W	-	W	H	X	Visual and Dimensional Check of Skid Structure Assembly			
13	RW	-	RW	H	X	Piping Spools Fabrication, Testing & Installation			
						Final Inspection			
14	W	-	W	H	X	Interconnecting Piping and Components as per P&ID			

15	W	-	W	H	X	Visual and Dimensional Check of Whole Skid Assembly
16	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
17	W	-	W	H	X	Performance Test (One per Type) / FAT
18	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note (Final Documentation shall include Manufacturer TC's for all Bought out Items, Raw Materials and Stage Inspection Reports as per approved ITP/QAP)
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.01.2016

	<b>Offshore Design Section Engineering Services (ISO – 9001:2008)</b>		<b>INSPECTION REQUIREMENT TABLE</b>				<b>IRT No.</b>	<b>ODS/MECH/IRT/ Safety 02</b>
							<b>Rev No</b>	<b>0</b>
							<b>Discipline</b>	<b>Mechanical</b>
<b>ITEM : Fire Fighting Equipment</b>						<b>INSPECTION CATEGORY : "C"</b>		
<b>Activity</b>	<b>1. Inspection by ONGC/ Certification Agency (CA)</b>							
	<b>2. Inspection by ONGC/Third Party Inspection (TPI)</b>							
	<b>3. Inspection by EPC / EPC's Inspection Agency (IA)</b>							
	<b>4. Inspection by Vendor/ Sub Vendor</b>							
	<b>5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval</b>							
	<b>6. Stages of Inspection Involved</b>							
<b>General:</b>								
1	A	-	R	H	X	Inspection & Test plan		
2	A	-	R	H	X	FAT Procedure of complete Unit		
<b>Portable CO2 Fire Extinguisher/Portable DCP Fire Extinguisher/</b>								
3	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate (Dry chemical, hose reels, cylinder, instruments and other miscellaneous item) as per project specification.		
4	...	-	R	H	X	Hydro testing report of container.		
5	...	-	W	H	X	Performance test ,marking and painting as per project specification		
6	...	-	R	H	X	Statutory Authority certificate /Compliance report		
7	-	-	W	H	X	Final DFT check (as applicable)		
8	-	-	R	H	X	Name plate verification.		
9	.....	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.		
<b>Fire Extinguisher Box</b>								
10	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.		
11	-	-	R	H	X	Final visual and dimensional inspection as per the approved drawings.		
<b>Fire Blanket</b>								
12	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.		
13	-	-	R	H	X	Quantitative check.		
<b>Final Inspection</b>								

14	-	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.	
15	-	-	W	H	X	Verification of tag number.	
16	....	-	Is	H	X	Issue of Inspection Release Note.	
						<b>IMIR/GIIR at Yard/Offshore</b>	
17	W	W	-		X	Verification of items as per IRN	
18	W	W			X	IMIR/GIIR on the basis of IRN	
<b>LEGENDS &amp; NOTES : Explained Separately</b>							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
ODS/SOF/004A		ODS/SOP/023		01		00	08.03.2016




	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No	ODS/MECH/IRT/ Safety 03
						Rev No	0
						Discipline	Mechanical
ITEM : Life Saving Equipment					INSPECTION CATEGORY : "B"		
Activity	1. Inspection by ONGC / Certification Agency (CA).						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI).						
	3. Inspection by EPC / EPC's Inspection Agency (IA)						
	4. Inspection by Vendor / Sub Vendor.						
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approve.						
	6. Stages of Inspection Involved						
						General:	
1	A	-	A	H	X	Inspection & Test plan	
2	A	-	R	H	X	FAT Procedure of complete Unit	
Fire Extinguisher Box							
3	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.	
4	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.	
Helicopter Rescue Kit							
5	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.	
6	W	-	W	H	X	Quantitative check.	
7	R	-	R	H	X	Statutory Authority certificate /Compliance report	
8	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.	
Life Rafts							
9	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.	
10	R	-	R	H	X	Capacity certificate from manufacturer	
11	R	-	R	H	X	Statutory Authority certificate /Compliance report	
12	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.	
Eye wash and safety shower							
13	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.	
14	W	-	W	H	X	Hydrotest test as per project specification/Data Sheets.	
15	W	-	W	H	X	Quantitative check.	
16	R	-	R	H	X	Statutory Authority certificate /Compliance report	
17	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings	

<b>Life Jacket &amp; work vest /Eye Wash Unit/Rope Ladder//Stretcher</b>						
18	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
19	R	-	R	H	X	Statutory Authority certificate /Compliance report
20	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.
<b>First Aid Kit</b>						
21	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
22	W	-	W	H	X	Quantitative check.
23	R	-	R	H	X	Statutory Authority certificate /Compliance report
<b>Portable Breathing Apparatus</b>						
24	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
25	R	-	R	H	X	Quantitative check.
26	R	-	R	H	X	Statutory Authority certificate /Compliance report
27	W	-	W	H	X	Final visual and dimensional inspection as per the approved drawings.
<b>Life Ring Buoys</b>						
28	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
29	R	-	R	H	X	Statutory Authority certificate /Compliance report
30	R	-	R	H	X	Type test certificate for light
<b>Fire Blanket</b>						
31	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
32	W	-	W	H	X	Quantitative check.
<b>Final Inspection</b>						
33	R	-	R	H	X	Manufacturer's test certificates/Compliance certificate as per project specification.
34	W	-	W	H	X	Verification of tag number.
35	Is	-	R	H	X	Docs verification & Issue of Inspection Release Note.
<b>IMIR/GIIR at Yard/Offshore</b>						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE				IRT No.	ODS/MECH/IRT/ Safety 04
							Rev No.	0
							Discipline	Mechanical
ITEM : Breathing Air Compressor Package						Inspection Category : "B"		
Activity No.	1. Inspection by ONGC / Certification Agency (CA)							
		2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
			3. Inspection by EPC/ EPC's Inspection Agency (IA)					
				4. Inspection by Vendor / Sub Vendor				
					5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval			
						6.Stage of Inspection Involved		
1	A	-	R	H	X	Inspection & Test Plan		
2	R	-	R	H	X	WPS/ PQR and Procedures for NDT, Heat Treatment, Surface Preparation & Protective Coating including NDT Operators Qualification Records		
3	A	-	R	H	X	FAT & SAT Procedures		
4	R	-	R	H	X	Statutory Body Certificates for Hazardous Area Classification and Environmental Protection for Instrumentation Items		
5	R	-	R	H	X	Material Test Certificates / Confirmations for Chemical, Physical, Corrosion Properties etc. as per applicable ONGC Specification		
6	R	-	R	H	X	Material Identification and Correlation of all Pressure Parts Including Internals		
						Breathing Air Compressor (Positive Displacement)		
7	R	-	R	H	X	Manufacturer's Test Certificates for Major Compressor Components		
8	W	-	W	H	X	NDT of Compressor Components like Piston Rods/ Cylinders, Pistons, Liners etc.		
9	W	-	W	H	X	Hydrostatic Test for Cylinders		
10	W	-	W	H	X	Balancing of Flywheel		
11	W	-	W	H	X	Surface Finish Check-Piston Rods, Cylinders, Liners, Including Hardness Check (As applicable)		
12	W	-	W	H	X	Mechanical Run Test of Compressor, Drivers and Gear Units including Integral Auxiliary System Package		
13	W	-	W	H	X	Performance Test of Compressor		
14	W	-	W	H	X	Strip Down Test after Mechanical Run Test (As applicable)		
15	RW	-	RW	H	X	Protective Coating Inspection (Final DFT & Visual Check)		
						Pressure Vessels / Coolers (Inter / After Coolers, Separators, Air Receiver)		
16	R	-	R	H	X	WPS/ PQR & Repair Procedure (As applicable)		

17	R	-	R	H	X	Material Identification for Pressure Parts Viz. Plates, Pipes, Flanges, Fittings, Dish Ends, Filter Elements, Heater, Fasteners etc. & Review of Test Certificates
18	RW	-	RW	H	X	Stage Inspection Viz. Shell/ Dish Set up, Root/ Back Chip D.P. Nozzle Set up, Dimensional Check/ DP Check of Dish Ends, Tube Sheet Inspection, Piping Assembly (As applicable)
19	R/W	-	R/W	H	X	Weld Visual, NDT and Heat Treatment Records & Charts (As applicable)
20	W	-	W	H	X	Hydrostatic Test for Pressure Containing Parts
21	W	-	W	H	X	Pneumatic Test for RF Pads (As applicable)
22	W	-	W	H	X	ASME Code Stamping (As applicable)
23	W	-	W	H	X	Final Visual and Dimensional Check
24	RW	-	RW	H	X	Surface preparation & Protective Coating
						<b>Connecting Piping and Valves for Skid and Manifold for Filling Station</b>
25	R	-	R	H	X	Material Identification, Review of Test Certificates & Records
26	R	-	R	H	X	NDE Requirements (As applicable)
27	W	-	W	H	X	Hydrostatic Testing
28	W	-	W	H	X	Final Visual and Dimensional Check
29	RW	-	RW	H	X	Surface preparation & Protective Coating Check
						<b>Instrumentation Items</b>
30	R	-	R	H	X	Certificate of Conformity for Specified IP/ NEMA Enclosure Class of Panel
31	R/W	-	R/W	H	X	Routine/ Type Test/ Acceptance Test/ Special Test Certificate for Motors, Shutdown & Safety Valves, Cables/ Continuity (As applicable) and Functional Test of Panels
32	R/W	-	R/W	H	X	Calibration/ Functional/ Manufacturers Test Certificate for Gauges, Transmitters, Switches etc. (As applicable). Instruments as per approved Instrument data sheets. Control panel functional test & Logic tests for the equipment package during FAT
33	R	-	R	H	X	Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Junction Boxes etc. (As applicable)
34	R	-	R	H	X	Statutory Body Certificates for Hazardous Class for Transmitters, Switches, Junction Boxes etc. (As applicable)
						<b>Structural Skid</b>
35	R	-	R	H	X	Review of MTCs for All Structural Items
36	R	-	R	H	X	WPS & PQR
37	R	-	R	H	X	Non Destructive Testing (As applicable)
38	W		W	H	X	Final Visual and Dimensional Check
						<b>Complete Skid Assembly</b>
39	W	-	W	H	X	Verify / Check all Components including Piping as per P&ID

40	W	-	W	H	X	Final Visual and Dimensional Check of Complete Assembly
42	W	-	W	H	X	FAT-System Functional Test Including Functional Test of Instrumentation & Control and Hard Stamping on Skid for Identification
43	RW	-	Rw	H	X	Surface preparation & Protective Coating Check (Final Paint DFT & Visual Check)
44	Is	-	R	H	X	Final Documentation Review and Issue of Inspection Release Note
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
25	W	W		H	X	SAT/Performance Test of Package in field (offshore platform) by the vendor.
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.	Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)			INSPECTION REQUIREMENT TABLE		IRT No.		ODS/MECH/IRT/ Safety 08		
							Rev No.		0		
							Discipline		Mechanical		
Item: Survival Craft							Inspection Category : B				
ACTIVITY	1. Inspection by ONGC / Certification Agency CA.										
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)										
	3. Inspection by EPC / EPC's Inspection Agency (IA)										
	4. Inspection by Vendor / Sub vendor										
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval.										
	No	6. STAGES OF INSPECTION INVOLVED.									
1	A	....	R	H	X	Approval of QA Plan / Inspection and test plan (ITP) of vendor					
2	A	-	R	H	X	FAT Procedure of complete Unit					
						Davits					
3	R/W	....	W	W	X	Check final visual and dimensional					
4	R	....	R	R	X	WPS, PQR as per ONGC Spec. (wherever required)					
5	R/W	....	W	W	X	Static load test and over load test at 1.33 times safe working load, followed by NDT of critical components for damage check					
6	R/W	....	W	W	X	Descend and hoisting speed check under full load					
7	R/W	....	W	W	X	Rope wire - material and safe load test certificate					
8	R/W	....	W	W	X	Rope wire lubrication, inspection for kinking, cut, broken or crushing of strand, etc.					
9	R/W	....	W	W	X	Hoisting limit switches setting and function test					
10	R/W	....	W	W	X	Centrifugal break check- to stop over speeding during lowering					
11	R/W	....	W	W	X	Gear box inspection for cleanliness and any damage					
12	R/W	....	W	W	X	Manual cranking for boat hoisting - electrical failure					
13	R/W	....	W	W	X	Length of wire rope (Two turns on drum when lowered to maximum height)					
						Survival Craft					
14	W	....	W	W	X	Functional tests					
15	W	....	W	W	X	Deluge / Water spray- wet film check and area covered by spray					
16	W	....	W	W	X	Compressed air discharge system check					
18	W	....	W	W	X	Sealing at windows during full working of sprinklers					




**LEGENDS & NOTES : Explained Separately**

FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
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	Offshore Design Section Engineering Services (ISO – 9001:2008)					INSPECTION REQUIREMENT TABLE					IRT No.	ODS/MECH/IRT/ Safety 09
											Rev No.	0
											Discipline	Mechanical
ITEM : Clean Agent System											INSPECTION CATEGORY : "B"	
Activity	1. Inspection by ONGC / Certification Agency (CA).											
	2. Inspection by ONGC / Third Party Inspection Agency (TPI).											
	3. Inspection by EPC / EPC's Inspection Agency (IA)											
	4. Inspection by Vendor / Sub Vendor.											
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval											
	6. Stages of Inspection Involved											
General												
1	A	-	A	H	X	Quality Control Plan.						
2	A	-	R	H	X	FAT Procedure of complete Unit						
3	R	-	R	H	X	Review of material test certificates/compliance certificate for all major Bought Items like Valves, Pressure Gauges, Fire/Heat Detection/Sensing Device, Weighing Scale, Pressure Switches, and Actuators.						
4	R	-	R	H	X	Statutory body certificates for Hazardous area classification and Environmental protection for Instrumentation items (as applicable).						
5	R	-	R	H	X	Review of NDT Procedures, Painting and WPS, PQR and WPQT.						
Testing & Inspection												
Cylinders												
6	RW	-	RW	H	X	Hydro & Pneumatic test of cylinders (as applicable)						
7	W	-	W	H	X	Check final visual & dimensions of cylinders						
8	RW	-	RW	H	X	Surface preparation and protective coating as per ONGC spec 2005						
9	R	-	R	H	X	Verify certification of cylinders.						
Control Panel												
10	Rw	-	W	H	X	Visual/dimensional check, functional check. Control panel functional test & Logic tests for the equipment package during FAT						
11	R	-	R	H	X	Verify test certificates, certificates for specified enclosure class. Certificate of Conformity for IP/ NEMA Enclosure Class for Transmitters, Switches, Junction Boxes etc., (As applicable). Calibration certificates for instruments. Instruments as per approved Instrument data sheets.						
Skid structure fabrication and assembly												
12	W	-	W	H	X	Check visual and dimensional of skid structure assembly.						

13	RW	-	Rw	H	X	Surface preparation and protective coating as per ONGC spec 2005
<b>Cylinder cabinet</b>						
14	W	-	W	H	X	Check visual & dimensional
<b>Final Inspection</b>						
15	W	-	W	H	X	Check interconnecting piping and component as per ONGC spec 2004A.
16	W	-	W	H	X	Check Visual and dimensional of whole skid assembly
17	W	-	W	H	X	Surface preparation and protective coating (Final DFT)as per ONGC spec 2005
18	W	-	W	H	X	Performance Test
<b>Final Documentation</b>						
19	R	-	R	H	X	Final Documentation shall include manufacturer TC's for all bought out items, raw material and stage inspection report as per the approved ITP.
20	Is		R	H	X	Issue of Inspection release Note
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
ODS/SOF/004A		ODS/SOP/023		01		00
						REV. DATE:
						08.03.2016

		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/MECH/IRT/ Safety 10
							Rev No.	0
							Discipline	Mechanical
Item : H2S Capsule/ Safe Shelter					Inspection Category : "B"			
Activity No.	1. Inspection by ONGC / Certification Agency (CA)							
	2. Inspection by ONGC / Third Party Inspection (TPI)							
	3. Inspection by Contractor / Contractor's Inspection Agency (IA)							
	4. Inspection by Vendor/ Sub Vendor							
	5. Certificates/compliance/Data/Information to be submitted by vendor for Review/ Approval							
	6. Stage of Inspection Involved							
						General		
1	-	-	W	H	-	Pre-inspection Meeting/Expediting		
2	A	-	R	H	X	QA Plan/ Inspection & Test Plan		
3	R	-	R	H	X	Material Test Certificates, Corrosion Test Reports, Hazardous Area Classification and IP Certificates for E&I Items, Test Certificates of Bought out Items, Test Records and Compliance to other PS Requirements		
4	R	-	R	H	X	NDT Procedures, Heat Treatment Procedure, Surface Preparation and Protective Coating Procedure, WPS & PQR (As applicable)		
5	A	-	R	H	X	FAT Procedure, Hydrostatic & Pneumatic Test Procedure		
6	R	-	R	H	X	Type Test certificates/ performance certificates as applicable		
						Diesel Engine (if required for power in well platform)		
7	W	-	W	H	X	Visual, Dimensional & Alignment Check		
8	W	-	W	H	X	Hydrostatic Test for all Components - Cooling Water, Jacket, Cylinder Block, Radiator, etc.		
9	W	-	W	H	X	Performance Test		
10	W	-	W	H	X	Load Test		
11	W	-	W	H	X	Check for Emergency Shut Down		
12	W	-	W	H	X	Noise & Vibration Level Check		
						Instrumentation and Control Panel		
13	W	-	W	H	X	Final Visual, Dimensional Check		
14	R	-	R	H	X	Material Test Certificate, Records, Type Test Reports		
15	W	-	W	H	X	Check Individual Components, Calibration Check, Functional Check and Operational Check		
						Complete Assembly		

16	R	-	R	H	X	Check/verify of items/equipment, review all applicable documents i.e. material test certificates, conformance/compliance certificates, test reports etc. for major brought out components/items
17	R	-	R	H	X	Check certificate of approval by Mercantile Marine Department, Gov. of India or equivalent statutory authority
18	W	-	W	H	X	Final Visual, Dimensional Check
19	R	-	R	H	X	NDE (RT, UT, MPI, DPI) as applicable
20	W	-	W	H	X	FAT
21	W	-	W	H	X	Noise & Vibration Tests
22	RW	-	Rw	H	X	Protective Coating (Final DFT and Visual Check)
23	RW	-	W	H	X	Preservation, Packing and preparation for shipping
24	Is	-	W	H	X	Final Documentation Review and Issue of Inspection Release Note (IRN)
IMIR/GIIR at Yard/Offshore						
23	W	W	-		X	Verification of items as per IRN
24	W	W			X	IMIR/GIIR on the basis of IRN
<b>*Refer Applicable Electrical IRT for Electrical Equipments/Items</b>						
<b>LEGENDS &amp; NOTES : Explained Separately</b>						
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.
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						REV. DATE:
						08.03.2016



**Offshore Design Section  
Engineering Services  
ISO – 9001:2008**

**LIST OF  
IRTs ( INSPECTION  
REQUIREMENT TABLE) &  
APPROVAL**

<b>Date</b>	<b>18/04/2015</b>
<b>Discipline</b>	<b>PIPING</b>
<b>Page: 1 OF 2</b>	

<b>Sl. No.</b>	<b>Item Description</b>	<b>IRT No.</b>	<b>Inspection Category</b>	<b>Rev. No.</b>	<b>Rev. Date</b>
1	Shut Down Valves	ODS/PPG/IRT/01	A	00	08.03.2016
2	Ball /Gate/Globe/Check/DBB Valves CS Nace & Non Nace (2" & Above)	ODS/PPG/IRT/02	B	00	08.03.2016
3	Ball /Gate/Globe/Check/DBB Valves DSS &SS (Nace & Non Nace)	ODS/PPG/IRT/03	B	00	08.03.2016
4	Choke Valves	ODS/PPG/IRT/04	B	00	08.03.2016
5	Bronze Valves	ODS/PPG/IRT/05	B	00	08.03.2016
6	Ball/Gate/Globe/Check/Needle Valve Cs Non-Nace (Below 2")	ODS/PPG/IRT/06	C	00	08.03.2016
7	Scraper Tee	ODS/PPG/IRT/07	B	00	08.03.2016
8	Hinge Closure	ODS/PPG/IRT/08	B	00	08.03.2016
9	Corrosion Coupon & Retrieval Kit	ODS/PPG/IRT/09	C	00	08.03.2016
10	Pig Indicator	ODS/PPG/IRT/10	C	00	08.03.2016
11	Fire Water Foam Hose Reel /Wash Down Hose Reel	ODS/PPG/IRT/11	C	00	08.03.2016
12	Strainers	ODS/PPG/IRT/12	C	00	08.03.2016
13	Spray Nozzles	ODS/PPG/IRT/13	C	00	08.03.2016
14	Continuous Drainer	ODS/PPG/IRT/14	C	00	08.03.2016
15	5 D Bends	ODS/PPG/IRT/15	B	00	08.03.2016
16	Hose And Hose Connection	ODS/PPG/IRT/16	C	00	08.03.2016
17	Sample Bomb	ODS/PPG/IRT/17	C	00	08.03.2016
18	Multi-Port Valves	ODS/PPG/IRT/18	A	00	08.03.2016


FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
ODS/SOF/047A	ODS/SOP/023	01	00	08.03.2016

	<b>Offshore Design Section Engineering Services ISO – 9001:2008</b>	<b>LIST OF IRTs ( INSPECTION REQUIREMENT TABLE) &amp; APPROVAL</b>	<b>Date</b>	<b>18/04/2015</b>
			<b>Discipline</b>	<b>PIPING</b>
			<b>Page: 2 OF 2</b>	

Sl. No.	Item Description	IRT No.	Inspection Category	Rev. No.	Rev. Date
19	Flame Arrester	ODS/PPG/IRT/19	C	00	08.03.2016
20	Inline-Separator	ODS/PPG/IRT/20	C	00	08.03.2016
21	CPVC Valves	ODS/PPG/IRT/21	C	00	08.03.2016
22	Pipes, Fittings, Flanges (Galvanized/ Non-Galvanized/ Seamless/ Welded/ Forged) CS/SS/DSS Nace & Non-Nace	ODS/PPG/IRT/22	BULK	00	08.03.2016
23	CPVC Pipes, Fittings, Flanges	ODS/PPG/IRT/23	BULK	00	08.03.2016
24	Cu-Ni Pipes, Fittings, Flanges	ODS/PPG/IRT/24	BULK	00	08.03.2016
25	Titanium Pipes, Fittings, Flanges	ODS/PPG/IRT/25	BULK	00	08.03.2016

Prepared / Revised By	Reviewed By	Approved By


FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/01
						Rev. No.	0
						Discipline	PIPING
						Page	1
ITEM : SHUTDOWN VALVES (DSS,CS-NACE,SS-NACE, NAB)						INSPECTION CATEGORY :A	
ACTIVITY	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3.Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test, NACE MR-0175) as per ONGC Spec 2004A Rev 8(As Applicable)	
3	R	-	R	H	X	Impact Test/report if required.	
4	R	-	R	H	X	Fugitive Emission test certificate (Type test)- As Applicable	
5	R	-	R	H	X	API Monogram & Fire safe type test	
						Inspection & Testing – For Witness/Random Witness	
6	Rw	-	W	H	X	Visual and Dimensional, Tag No. verification.	
7	Rw	-	Rw	H	X	NDE of Valve body as applicable 100% RT Flim/UT and Hardness Test of body,bonnet and trims - if applicable.	
8	Rw		W	H	X	Seat Leakage Test Hydrostatically and Pneumatically.	
9	Rw		W	H	X	Hydrostatic Test of Shell Test (As Applicable).	
10	Rw	-	W	H	X	Valve and Actuator Assembly - Valve operation torque test /functional test as per FS 2004A .	
11	R		R	R	X	Type Test Report for Actuator	
12	Rw	-	W	H	X	Fugitive Emission test (Production test)(As applicable)	
13	Rw		Rw	H	X	Impact Test if required	
14	Rw		Rw	H	X	Surface Preparation and coating as per FS. 2005 & 2004A	
						IRN For Issue by CA/TPI/Contractor IA	
15	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
16	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
17	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
18	R	R		H	X	Material Despatch Report Review& verification of IRN	
19	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/02
						Rev. No.	0
						Discipline	PIPING
						Page	1
ITEM : Ball Gate/Globe/Check/DBB Valve CS Nace & Non Nace (2" & above)						INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3.Inspection EPC/EPC's Inspection by Contractor /TPIA						
		4. Inspection by Vendor/ Sub Vendor					
			5. Certificates / Data to be Submitted by Vendor for Review/ Approval				
					Stage of Inspection Involved		
					General & Documents-For Review/Approval/Information		
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test, NACE MR-0175) as per ONGC Spec 2004A Rev 8(As Applicable)	
3	R	-	R	H	X	Impact Test report if required.	
4	R	-	R	H	X	Fugitive Emission test certificate (Type test)- As Applicable	
5	R	-	R	H	X	API Monogram & Fire safe type test report/cert (For Ball Valves)	
						Inspection & Testing – For Witness/Random Witness	
6	Rw	-	W	H	X	Visual and Dimensional, Tag No. verification.	
7	RW	-	Rw	H	X	NDE of Valve body as applicable, 100% RT Flim/UT and Hardness Test of body,bonnet and trims – if applicable.	
8	Rw		Rw	H	X	Seat Leakage Test Hydrostatically and Pneumatically.	
9	Rw		Rw	H	X	Hydrostatic Test of Shell & Back Seat Test (As Applicable).	
10	Rw	-	Rw	H	X	Valve operation torque test /functional test as per FS 2004A .	
11	RW		Rw	H	X	Fugitive Emission test (Production test)(As applicable)	
12	Rw		Rw	H	X	Impact Test if required	
13	RW		Rw	H		Surface Preparation and coating as as per FS. 2005 & 2004A	
						IRN For Issue by CA/TPI/Contractor IA	
14	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
15	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
16	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
17	R	R	R	H	X	Material Despatch Report Review& verification of IRN	
18	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No. ODS/SOF/004A		Ref. PROCEDURE No. ODS/SOP/023		ISSUE No. 01		REV. No. 00	
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/03
						Rev. No.	0
						Discipline	PIPING
						Page	1
ITEM : Ball /Gate/Globe/Check Valves DSS,SS (NACE & NON NACE)						INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3.Inspection EPC/EPC's Inspection by Contractor /TPIA						
		4. Inspection by Vendor/ Sub Vendor					
		5. Certificates / Data to be Submitted by Vendor for Review/ Approval					
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test, NACE MR-0175) as per ONGC Spec 2004A Rev 8(As Applicable)	
3	R	-	R	H	X	Impact Test report if required.	
4	R	-	R	H	X	Fugitive Emission test certificate (Type test)- As Applicable	
5	R	-	R	H	X	API Monogram & Fire safe type test report/cert (For Ball Valves)	
						Inspection & Testing – For Witness/Random Witness	
6	Rw	-	W	H	X	Visual and Dimensional, Tag No. verification.	
7	Rw	-	Rw	H	X	NDE of Valve body as applicable, 100% RT Flim/UT and Hardness Test of body,bonnet and trims - if applicable.	
8	Rw		Rw	H	X	Seat Leakage Test Hydrostatically and Pneumatically.	
9	Rw		Rw	H	X	Hydrostatic Test of Shell & Back Seat Test (As Applicable).	
10	Rw	-	Rw	H	X	Valve operation torque test /functional test as per FS 2004A .	
11	Rw		Rw	H	X	Fugitive Emission test (Production test)(As applicable)	
12	Rw		Rw	H	X	Impact Test if required.	
13	Rw		Rw	H		Surface Preparation and coating as as per FS. 2005 & 2004A	
						IRN For Issue by CA/TPI/Contractor IA	
14	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
15	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
16	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
17	R	R		H	X	Material Despatch Report Review& verification of IRN	
18	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	
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		Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/04
						Rev. No.	0
						Discipline	PIPING
						Page	1
ITEM: CHOKE VALVES						INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3.Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Quality Plan	
2	R	-	R	H	X	Material Identification	
3	R		R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test) as per ONGC Spec 2004A Rev 8(As Applicable)	
						Inspection & Testing – For Witness/Random Witness	
4	Rw	-	W	H	X	Visual and Dimension Check	
5	Rw		Rw	H	X	Seat Leakage Test Hydrostatically and Pneumatically.	
6	Rw		Rw	H	X	Hydrostatic Test of Shell & Back Seat Test (As Applicable).	
7	Rw	-	Rw	H	X	Valve operation torque test (Unseating and Normal Operation) /functional test as per FS2004D	
8	Rw	-	Rw	H	X	NDE of Valve body as applicable, 100% RT Flim/UT and Hardness Test of body, bonnet and trims - if applicable	
9	Rw		Rw		X	Surface Preparation & Protective Coating asper FS 2005	
						IRN For Issue by CA/TPI/Contractor IA	
10	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
11	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
12	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
13	R	R		H	X	Material Despatch Report Review& verification of IRN	
14	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	
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						08.03.2016	

	Offshore Design Section Engineering Services (ISO – 9001:2008)		INSPECTION REQUIREMENT TABLE			IRT No.	ODS/PPG/IRT/05
						Rev. No.	0
						Discipline	PIPING
						Page	1
ITEM : Bronze Valves						INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
	Stage of Inspection Involved						
General & Documents-For Review/Approval/Information							
1	A	-	R	H	X	Inspection & Test Plan.	
2	A	-	R	H	X	Submission of Hydrotest procedure, painting procedure etc.(As applicable)	
3	R	-	R	H	X	Material Test Certificates & Verification of Traceability records and NDT records.(As ONGC FS2004A Rev.8)	
Inspection & Testing – For Witness/Random Witness							
4	Rw	-	Rw	H	X	NDE of Valve body as applicable, 100% RT Flim/UT and Hardness Test of body,bonnet and trims - if applicable.	
5	Rw	-	Rw	H	X	Hydrostatic Test of Shell & Back Seat (As Applicable), , Hydro test and Pneumatic tests on seats	
6	Rw	-	W	H	X	Visual and Dimensional.	
7	Rw	-	Rw	H	X	Functional / operation torque As applicable.	
8	Rw	-	Rw	H	X	Surface preparation and Protective coating as per ONGC spec 2005	
IRN For Issue by CA/TPI/Contractor IA							
9	R		H	H	X	Review of Documents and Check for Completeness against PS/PO.	
10	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
11	IS		R	H	X	Issue of Release Note	
IMIR/GIIR at Yard/Offshore							
12	R	R		H	X	Material Despatch Report Review& verification of IRN	
13	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No. ODS/SOF/004A		Ref. PROCEDURE No. ODS/SOP/023		ISSUE No. 01		REV. No. 00	
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		Offshore Design Section Engineering Services (ISO – 9001:2008)				INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/06
								Rev. No.	0
								Discipline	PIPING
								Page	1
ITEM : Gate/Globe/Check/Ball/Needle Valve CS NACE & NON-NACE(BELOW 2’’)								INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)								
	2. Inspection by ONGC / Third Party Inspection								
	3.Inspection EPC/EPC’s Inspection by Contractor /TPIA								
		4. Inspection by Vendor/ Sub Vendor							
			5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved			
						General & Documents-For Review/Approval/Information			
1	A	-	R	H	X	Inspection & Test Plan.			
2	R	-	R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test, NACE MR-0175) as per ONGC Spec 2004A Rev 8(As Applicable)			
3	R	-	R	H	X	Impact Test if required.			
4	R	-	R	H	X	Fugitive Emission test certificate (Type test)- As Applicable			
5	R	-	R	H	X	API Monogram & Fire safe type test report/cert (For Ball Valves)			
						Inspection & Testing – For Witness/Random Witness			
6	-	-	W	H	X	Visual and Dimensional, Tag No. verification.			
7	-	-	Rw	H	X	NDE of Valve body as applicable, 100% RT Flim/UT and Hardness Test of body,bonnet and trims - if applicable.			
8	-		Rw	H	X	Seat Leakage Test Hydrostatically and Pneumatically.			
9	-		Rw	H	X	Hydrostatic Test of Shell & Back Seat Test (As Applicable).			
10	-	-	Rw	H	X	Valve operation torque test /functional test as per FS 2004A .			
11	-		Rw	H	X	Fugitive Emission test (Production test)(As applicable)			
12	-		Rw	H		Surface Preparation and coating as as per FS. 2005 & 2004A			
						IRN For Issue by CA/TPI/Contractor IA			
13			R	H	X	Review of Documents and Check for Completeness against PS/PO.			
14			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.			
15			IS	H	X	Issue of Release Note			
						IMIR/GIIR at Yard/Offshore			
16	R	R		H	X	Material Despatch Report Review& verification of IRN			
17	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR			
LEGENDS & NOTES : Explained Separately									
FORMAT No.		Ref. PROCEDURE No.			ISSUE No.		REV. No.		REV. DATE:
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							Rev. No.	0
							Discipline	PIPING
							Page	1
ITEM : SCRAPPER TEE							INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA							
	4. Inspection by Vendor/ Sub Vendor							
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval							
						Stage of Inspection Involved		
						General & Documents-For Review/Approval/Information		
1	A	-	R	H	X	Inspection & Test Plan.		
2	R	-	R	H	X	Material Identification, Material test certificates		
3	R		A	H	X	WPS/PQR/WPQ,PWHT records & Procedure as applicable (In case of any new PQR and WPQR, it should be qualified under witness of TPI)		
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC FS 2004D Rev. 6		
						Inspection & Testing		
6	Rw	-	W	H	X	Inspection Marking and Tagging		
7	R	-	R	H	X	Compliance to Purchase/ONGC Technical Specification & Approved drawings		
8	Rw	-	W	H	X	Visual and Dimension Check		
9	Rw		Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)		
10	Rw		Rw	H	X	Hydro-test		
11	Rw		Rw	H	X	Painting (As Applicable)		
						IRN For Issue by CA/TPI/Contractor IA		
12	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.		
13	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.		
14	IS		R	H	X	Issue of Release Note		
						IMIR/GIIR at Yard/Offshore		
15	R	R		H	X	Material Despatch Report Review& verification of IRN		
16	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR		
LEGENDS & NOTES : Explained Separately								
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.		REV. DATE:
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		Offshore Design Section Engineering Services (ISO – 9001:2008)				INSPECTION REQUIREMENT TABLE		IRT No.	ODS/PPG/IRT/08
								Rev. No.	0
								Discipline	PIPING
								Page	1
ITEM : HINGE CLOSURE								INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)								
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)								
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA								
	4. Inspection by Vendor/ Sub Vendor								
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval								
	Stage of Inspection Involved								
						General & Documents-For Review/Approval/Information			
1	A	-	R	H	X	Inspection & Test Plan.			
2	R	-	R	H	X	Material Identification, Material test certificates & Design Certification By ASME approved TPI as per ONGC FS 2004D Rev 6			
3	R		R	H	X	WPS/PQR/WPQ,PWHT records & Procedure as applicable (In case of any new PQR and WPQR, it should be qualified under witness of TPI)			
4	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification			
						Inspection & Testing			
5	Rw	-	W	H	X	Inspection Marking and Tagging			
6	R	-	R	H	X	Compliance to Purchase/ONGC Technical Specification & Approved drawings			
7	Rw	-	W	H	X	Visual and Dimension Check			
8	Rw		Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)			
9	Rw		Rw	H	X	Hydro test			
10	Rw		Rw	H	X	Painting (As Applicable)			
						IRN For Issue by CA/TPI/Contractor IA			
11	R		H	H	X	Review of Documents and Check for Completeness against PS/PO.			
12	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.			
13	IS		R	H	X	Issue of Release Note			
						IMIR/GIIR at Yard/Offshore			
14	R	R		H	X	Material Despatch Report Review& verification of IRN			
15	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR			
LEGENDS & NOTES : Explained Separately									
FORMAT No.		Ref. PROCEDURE No.			ISSUE No.		REV. No.		
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ITEM : Corrosion Coupon & Retrieval KIT						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	3.Inspection by ONGC / Third Party Inspection Agency (TPI)						
	4. Inspection by Vendor/ Sub Vendor						
	5.Certificates/Data to be Submitted by Vendor for Review/Approval						
	Stage of Inspection Involved						
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R		R	H	X	Material Test Certificates & Compliance Certificates as per ONGC FS2004A Rev. 8	
3	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification	
4						Inspection & Testing	
5		-	W	H	X	Material Identification ,Inspection Marking and Tagging	
6		-	R	H	X	Compliance to Purchase/ONGC Technical Specification & Approved drawings.	
7		-	W	H	X	Visual and Dimension Check	
8			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
9			Rw	H	X	Hydrostatic & leak Test	
10			Rw	H	X	Painting	
						IRN For Issue by CA/TPI/Contractor IA	
11			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
12			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
13			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
14	R	R		H	X	Material Despatch Report Review& verification of IRN	
15	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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						Discipline	PIPING
						Page	1
ITEM : PIG INDICATOR						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Material test certificates & records. WPS/PQR/WPQ, Fire safe certification	
3	R		R	H	X	Weather Proof, Explosion Proof certificates from authorised agency as per ONGC FS 2004D,Rev 6	
4	R	-	R	H	X	Compliance with PS & Approved drawings.	
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification	
						Inspection & Testing – For Witness/Random Witness	
6		-	W	H	X	Material Identification ,Inspection Marking and Tagging	
7		-	Rw	H	X	Visual and Dimension Check	
8			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
9			Rw	H	X	Painting (As Applicable)	
						IRN For Issue by CA/TPI/Contractor IA	
10			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
11			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
12			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
13	R	R		H	X	Material Despatch Report Review& verification of IRN	
14	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
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						08.03.2016	



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						Discipline	PIPING
						Page	1
ITEM : FWHR						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC’s Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R		R	H	X	Material Test Certificates & Compliance Certificates & UL / US coast Guard / FM Certification of FWHR as per ONGC FS 2004D Rev. 6	
3	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification	
						Inspection & Testing – For Witness/Random Witness	
4		-	W	H	X	Material Identification ,Inspection Marking and Tagging	
5		-	R	H	X	Compliance to Purchase/ONGC Technical Specification & Approved drawings.	
6		-	Rw	H	X	Visual and Dimension Check	
7			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
8			Rw	H	X	Hydrostatic & leak Test	
9			Rw	H	X	Painting	
						IRN For Issue by CA/TPI/Contractor IA	
10			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
11			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
12			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
13	R	R		H	X	Material Despatch Report Review& verification of IRN	
14	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
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						Page	1
ITEM : STRAINERS						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3. Inspection by EPC/EPC’s Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates/Data to be Submitted by Vendor for Review/ Approval						
	Stage of Inspection Involved						
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Quality Control Plan	
2	R	-	R	H	X	Review of Material test certificates and records as per ONGC FS 2004D Rev. 6	
3	R	-	A	H	X	WPS/PQR/WPQ for all welding. (In case of any new PQR and WPQR, it should be qualified under witness of TPI)	
						Inspection & Testing – For Witness/Random Witness	
4			W			Material Identification	
5			Rw	H	X	NDT(As applicable)	
6			Rw	H	X	Hydrostatic Test for strainers.	
7		-	W	H	X	Visual/Dimensional Check.	
8		-	Rw	H	X	Protection coating for strainers.	
						IRN For Issue by CA/TPI/Contractor IA	
9			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
10			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
11			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
12	R	R		H	X	Material Despatch Report Review& verification of IRN	
13	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
FORMAT No.		Ref. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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ITEM : Spray Nozzles						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
	Stage of Inspection Involved						
General & Documents-For Review/Approval/Information							
1	A	-	R	H	X	Inspection & Test Plan.	
2	R		R	H	X	Material Test Certificates & Certificates of Approval from Authorities as per ONGC FS 2004D Rev. 6	
3	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification	
Inspection & Testing							
4			W	H	X	Material Identification	
5		-	Rw	H	X	Inspection Marking and Tagging	
6		-	R	H	X	Compliance to Purchase/ONGC Technical Specification & Approved drawings.	
7		-	W	H	X	Visual and Dimension Check	
8			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
9			Rw	H	X	Hydrostatic Test	
10			Rw	H	X	Painting (As Applicable)	
IRN For Issue by CA/TPI/Contractor IA							
12			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
13			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
14			IS	H	X	Issue of Release Note	
IMIR/GIIR at Yard/Offshore							
15	R	R		H	X	Material Despatch Report Review& verification of IRN	
16	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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						Page	1
ITEM : Continuous Drainer						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
		4. Inspection by Vendor/ Sub Vendor					
		5. Certificates / Data to be Submitted by Vendor for Review/ Approval					
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Quality Plan & Applicable QA/QC Procedure	
2	R		R	H	X	Material Test Certificates & Compliance Certificates as per ONGC FS 2004D Rev. 6	
3	R	-	R	H	X	WPS,.	
						Inspection & Testing – For Witness/Random Witness	
4			W	H	X	Visual and Dimensional Check	
5		-	Rw	H	X	NDE as applicable	
6			Rw	H	X	Hydro testing	
7			Rw	H	X	Surface Preparation and Coating	
						IRN For Issue by CA/TPI/Contractor IA	
8			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
9			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
10			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
11	R	R		H	X	Material Despatch Report Review& verification of IRN	
12	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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ITEM : 5 D Bends						INSPECTION CATEGORY :B	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Material test certificates & NACE MR -0175 Compliance	
3	R		R	H	X	Manufacturing Procedure, Heat treatment procedure, Bending Procedure for 5D bends NDT procedures, NDT Technicians certificates & Testing procedures inline as per ONGC FS 2004D Rev. 6	
4	R	-	R	H	X	Compliance with PS & Approved drawings.	
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC specification	
						Inspection & Testing	
6	Rw	-	W	H	X	Material Identification, Inspection Marking and Tagging	
7	R	-	R	H	X	Compliance to Purchase/ONGC Technical Specification, Chemical analysis, Corrosion tests & Mechanical Tests as per ONGC FS 2004D Rev. 6	
8	Rw	-	W	H	X	Visual and Dimension Check	
9	Rw		Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
10	W		W	H	X	Hydro test	
11	Rw		RW	H	X	Painting (As Applicable)	
						IRN For Issue by CA/TPI/Contractor IA	
12	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
13	Rw		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
14	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
15	R	R		H	X	Material Despatch Report Review& verification of IRN	
16	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
FORMAT No.		REF. PROCEDURE No.		ISSUE No.		REV. No.	REV. DATE:
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ITEM : HOSE AND HOSE CONNECTION						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	3.Inspection by ONGC / Third Party Inspection Agency (TPI)						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R		R	H	X	Material Test Certificates & Compliance Certificates	
3	R	-	R	H	X	Compliance with PS & Approved drawings.	
4	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC FS2004D Rev. 6	
						Inspection & Testing – For Witness/Random Witness	
5		-	W	H	X	Material Identification ,Inspection Marking and Tagging	
6		-	R	H	X	Compliance to Purchase/ONGC Technical Specification	
7		-	W	H	X	Visual and Dimension Check	
8			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)	
9			RW	H	X	Hydrostatic & leak Test	
10			RW	H	X	Painting	
						IRN For Issue by CA/TPI/Contractor IA	
11			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
12			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
13			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
14	R	R		H	X	Material Despatch Report Review& verification of IRN	
15	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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ITEM : Sample Bomb						INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3. Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
	Stage of Inspection Involved						
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Quality Control Plan	
2	R	-	R	H	X	Material identification Report & test certificates.	
3	R	-	R	H	X	Compliance to piping class and sample tag No.	
4	R		R			WPS,PQR and WPQ	
5	R	-	R	H	X	Fabrication drawing.	
						Inspection & Testing – For Witness/Random Witness	
6			W			Material identification	
7			RW	H	X	NDT as applicable	
8		-	W	H	X	Hydro test (as applicable)	
9		-	W	H	X	Pneumatic test for Seat leak of needle valve (as applicable)	
10			Rw	H		Surface Preparation and coating inspection (as applicable)	
						IRN For Issue by CA/TPI/Contractor IA	
11			R	H	X	Review of Documents and Check for Completeness against PS/PO.	
12			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
13			IS	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
14	R	R		H	X	Material Despatch Report Review& verification of IRN	
15	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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ITEM : MULTI PORT VALVES						INSPECTION CATEGORY :A	
ACTIVITY	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection						
	3.Inspection by EPC/EPC's Inspection by Contractor /TPIA						
	4. Inspection by Vendor/ Sub Vendor						
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval						
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-	R	H	X	Inspection & Test Plan.	
2	R	-	R	H	X	Review of Material Test Certificates (Forming, Heat Treatment, Chemical and Mechanical Properties, Corrosion Test, NACE MR-0175) as per ONGC Spec 2004A Rev 8(As Applicable)	
3	R	-	R	H	X	Impact Test Report if required.	
4	R	-	R	H	X	Fugitive Emission test certificate (Type test)- As Applicable	
5	R	-	R	H	X	API Monogram & Fire safe type test Report/Cert.	
						Inspection & Testing – For Witness/Random Witness	
6	Rw	-	W	H	X	Visual and Dimensional, Tag No. verification.	
7	Rw	-	Rw	H	X	NDE of Valve body as applicable 100% RT Flim/UT and Hardness Test of body,bonnet and trims - if applicable.	
8	Rw		W	H	X	Seat Leakage Test Hydrostatically and Pneumatically.	
9	Rw		W	H	X	Hydrostatic Test of Shell Test (As Applicable).	
10	Rw	-	W	H	X	Valve and Actuator Assembly - Valve operation torque test /functional test as per FS 2004A.	
11	R		R	H	X	PMI ( <b>Positive Material Identification</b> ) test Report for alloy Steel material	
12	Rw	-	W	H	X	Fugitive Emission test (Production test)(As applicable)	
13	W		W	H	X	Impact Test if required.	
14	Rw		Rw	H	X	Surface Preparation and coating as per FS. 2005 & 2004A	
						IRN For Issue by CA/TPI/Contractor IA	
15	R		R	H	X	Review of Documents and Check for Completeness against PS/PO.	
16	R		Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
17	IS		R	H	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
18	R	R		H	X	Material Despatch Report Review& verification of IRN	
19	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained Separately							
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ITEM : Flame Arrester								INSPECTION CATEGORY :C				
Activity	1. Inspection by ONGC / Certification Agency.(CA)											
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)											
	3. Inspection EPC/EPC's Inspection by Contractor /TPIA											
		4. Inspection by Vendor/ Sub Vendor										
			5. Certificates / Data to be Submitted by Vendor for Review/ Approval									
				Stage of Inspection Involved								
						General & Documents-For Review/Approval/Information						
1	A	-	R	H	X	Inspection & Test Plan.						
2	R	-	R	H	X	Material Identification Report						
3	R		R	H	X	Material Test Certificates & Certificates of Approval from Authorities as per Specification						
4	R	-	R	H	X	Compliance with PS & Approved drawings.						
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC Specification						
						Inspection & Testing						
6		-	W	H	X	Material Identification ,Inspection Marking and Tagging						
7		-	R	H	X	Compliance to Purchase/ONGC Technical Specification						
8		-	W	H	X	Final Visual and Dimension Check						
9			W	H	X	NDE requirements and Records (RT/UT/MPI/DPT- as applicable)						
10			RW	H	X	Hydrostatic Test						
11			RW	H	X	Painting (As Applicable)						
						IRN For Issue by CA/TPI/Contractor IA						
14			R	H	X	Review of Documents and Check for Completeness against PS/PO.						
15			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.						
16			IS	H	X	Issue of Release Note						
						IMIR/GIIR at Yard/Offshore						
17	R	R		H	X	Material Despatch Report Review& verification of IRN						
18	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR						
LEGENDS & NOTES : Explained separately												
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ITEM : Inline Separator								INSPECTION CATEGORY :C		
Activity	1. Inspection by ONGC / Certification Agency.(CA)									
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)									
	3. Inspection EPC/EPC's Inspection by Contractor /TPIA									
	4. Inspection by Vendor/ Sub Vendor									
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval									
	Stage of Inspection Involved									
							General & Documents-For Review/Approval/Information			
1	A	-	R	H	X	Inspection & Test Plan.				
2	R.	-	R	H	X	Material Identification Report				
3	R		R	H	X	Material Test Certificates & Certificates of Approval from Authorities as per Specification 2004F Rev. 0				
4	R	-	R	H	X	Compliance with PS & Approved drawings.				
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC Specification				
						Inspection & Testing				
6		-	RW	H	X	Material Identification ,Inspection Marking and Tagging				
7		-	R	H	X	Compliance to Purchase/ONGC Technical Specification				
8		-	W	H	X	Final Visual and Dimension Check				
9			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT-as applicable)				
10			RW	H	X	Hydrostatic Test				
11			RW	H	X	Painting (As Applicable)				
						IRN For Issue by CA/TPI/Contractor IA				
14			R	H	X	Review of Documents and Check for Completeness against PS/PO.				
15			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.				
16			IS	H	X	Issue of Release Note				
						IMIR/GIIR at Yard/Offshore				
17	R	R		H	X	Material Despatch Report Review& verification of IRN				
18	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR				
LEGENDS & NOTES : Explained separately										
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								Rev. No.	0
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								Page	1
ITEM : CPCV Valves								INSPECTION CATEGORY :C	
Activity	1. Inspection by ONGC / Certification Agency.(CA)								
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)								
	3. Inspection EPC/EPC's Inspection by Contractor /TPIA								
	4. Inspection by Vendor/ Sub Vendor								
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval								
	Stage of Inspection Involved								
						General & Documents-For Review/Approval/Information			
1	A	-	R	H	X	Inspection & Test Plan.			
2	R	-	R	H	X	Material Identification Report			
3	R		R	H	X	Material Test Certificates & Certificates of Approval from Authorities as per Specification 2004A Rev.8			
4	R	-	R	H	X	Compliance with PS & Approved drawings.			
5	R	-	R	H	X	Manufacturer's test certificates in compliance to ONGC Specification			
						Inspection & Testing			
6		-	W	H	X	Material Identification ,Inspection Marking and Tagging			
7		-	R	H	X	Compliance to Purchase/ONGC Technical Specification			
8		-	W	H	X	Final Visual and Dimension Check			
9			Rw	H	X	NDE requirements and Records (RT/UT/MPI/DPT- as applicable)			
10			RW	H	X	Hydrostatic Test			
11			RW	H	X	Painting (As Applicable)			
						IRN For Issue by CA/TPI/Contractor IA			
14			R	H	X	Review of Documents and Check for Completeness against PS/PO.			
15			Rw	H	X	Protective coating, Preservation, End Preparation, Handling and Storage.			
16			IS	H	X	Issue of Release Note			
						IMIR/GIIR at Yard/Offshore			
17	R	R		H	X	Material Despatch Report Review& verification of IRN			
18	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR			
LEGENDS & NOTES : Explained separately									
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ITEM : Pipes, Fittings, Flanges (Galvanised/Non-Galvanised/ Seamless/ Welded/Forged) CS/SS NACE & Non-NACE						INSPECTION CATEGORY :BULK	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3.Inspection by Contractor / Contractor's Inspection Agency (CIA)						
		4. Inspection by Vendor/ Sub Vendor					
		5. Certificates / Data to be Submitted by Vendor for Review/ Approval					
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-		H	X	Inspection and Test Plan	
2	R	-		H	X	Submission of Manufacturing Procedures, Hydro test procedure, painting procedure etc.(As applicable)	
3	R			H	X	Material Test Certificates	
						Inspection & Testing By QA/TPI of Vendor	
4		-		R/ W	X	Material Test Certificates & Verification of Traceability records and NDT records.( As applicable).	
5		-		W	X	Hydro test	
6		-		W	X	Final Visual and Dimensional & Stamping check	
7		-		W	X	Surface preparation and Protective coating/Hot Dip Galvanizing as applicable (Visual and Final DFT check) as per ONGC spec 2005	
						IRN For Issue by QA/TPI of Vendor	
9				R	X	Review of Documents and Check for Completeness against PS/PO.	
10				Rw	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
11				IS	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
12	R	R		H	X	Material Despatch Report Review& verification of IRN	
13	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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								Page		1		
ITEM : CPVC Pipes, Fittings, Flanges								INSPECTION CATEGORY:BULK				
Activity	1. Inspection by ONGC / Certification Agency.(CA)											
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)											
	3.Inspection by Contractor / Contractor's Inspection Agency (CIA)											
	4. Inspection by Vendor/ Sub Vendor											
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval											
	Stage of Inspection Involved											
						General & Documents-For Review/Approval/Information						
1	A	-		H	X	Inspection and Test Plan						
2	R	-		H	X	Submission of Manufacturing Procedures , Hydro test procedure, painting procedure etc.(As applicable)						
3	R			H	X	Material Test Certificates						
						Inspection & Testing By QA/TPI of Vendor						
4		-		R/ W	X	Material Test Certificates & Verification of Traceability records and NDT records.(As applicable).						
5		-		W	X	Hydro test						
6		-		W	X	Visual and Dimensional & Stamping check						
7		-		Rw	X	Surface preparation and Protective coating/Hot Dip Galvanizing as applicable (Visual and Final DFTcheck) as per ONGC spec 2005						
						IRN For Issue by QA/TPI of Vendor						
8				R	X	Review of Documents and Check for Completeness against PS/PO.						
9				Rw	X	Protective coating, Preservation, End Preparation, Handling and Storage.						
10				IS	X	Issue of Release Note						
						IMIR/GIIR at Yard/Offshore						
11	R	R		H	X	Material Despatch Report Review& verification of IRN						
12	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR						
LEGENDS & NOTES : Explained separately												
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						Page	1
ITEM : Cu-Ni Pipes, Fittings, Flanges						INSPECTION CATEGORY :BULK	
Activity	1. Inspection by ONGC / Certification Agency.(CA)						
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)						
	3.Inspection by Contractor / Contractor's Inspection Agency (CIA)						
		4. Inspection by Vendor/ Sub Vendor					
		5. Certificates/Data to be Submitted by Vendor for Review/Approval					
						Stage of Inspection Involved	
						General & Documents-For Review/Approval/Information	
1	A	-		H	X	Inspection and Test Plan	
2	R	-		H	X	Submission of Manufacturing procedure , Hydro-test procedure, painting procedure etc.(As applicable)	
3	R			H		Material Test Certificates	
						Inspection & Testing by QA/TPI of Vendor	
4		-		R/W	X	Material Test Certificates & Verification of Traceability records and NDT records.(As applicable).	
5		-		W	X	Hydro test	
6		-		W	X	Visual and Dimensional & Stamping check	
7		-		Rw	X	Surface preparation and Protective coating/Hot Dip Galvanizing as applicable (Visual and Final DFT check) as per ONGC spec 2005	
						IRN For Issue by QA/TPI of Vendor	
8				R	X	Review of Documents and Check for Completeness against PS/PO.	
9				Rw	X	Protective coating, Preservation, End Preparation, Handling and Storage.	
10				IS	X	Issue of Release Note	
						IMIR/GIIR at Yard/Offshore	
11	R	R		H	X	Material Despatch Report Review& verification of IRN	
12	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR	
LEGENDS & NOTES : Explained separately							
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							Rev. No.	0
							Discipline	PIPING
							Page	1
ITEM : Titanium Pipes, Fittings, Flanges							INSPECTION CATEGORY :BULK	
Activity	1. Inspection by ONGC / Certification Agency.(CA)							
	2. Inspection by ONGC / Third Party Inspection Agency (TPI)							
	3.Inspection by Contractor / Contractor's Inspection Agency (CIA)							
	4. Inspection by Vendor/ Sub Vendor							
	5. Certificates / Data to be Submitted by Vendor for Review/ Approval							
						Stage of Inspection Involved		
						General & Documents-For Review/Approval/Information		
1	A	-	R	H	X	Inspection and Test Plan		
2	R	-	R	H	X	Submission of Manufacturing Procedures, Hydro test procedure, painting procedure etc.(As applicable), Material Test Certificates		
						Inspection & Testing by QA/TPI of Vendor		
3		-		R	X	Material Test Certificates & Verification of Traceability records and NDT records.(As applicable).as per ONGC FS2004A Rev 8		
4		-		W	X	Hydro test		
5		-		W	X	Visual and Dimensional & Stamping check		
8		-		Rw	X	Surface preparation and Protective coating/Hot Dip Galvanizing as applicable (Visual and Final DFT check) as per ONGC spec 2005		
						IRN For Issue by QA/TPI of Vendor		
9				R	X	Review of Documents and Check for Completeness against PS/PO.		
10				Rw	X	Protective coating, Preservation, End Preparation, Handling and Storage.		
11				IS	X	Issue of Release Note		
						IMIR/GIIR at Yard/Offshore		
12	R	R		H	X	Material Despatch Report Review& verification of IRN		
13	W	W	-	H	X	Verification of item at yard & issue of IMIR/GIIR		
LEGENDS & NOTES : Explained separately								
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