

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	
COMPANY DOC. No.:	1060-2501-CA220-MR-MRQ-002	DISCIPLINE: MR	REV. 0
CONTRACTOR DOC. No.:	25001-1060-CA220-ME-MRQ-001	DOC. CLASS: 1	Page 1 of 13
DOCUMENT TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)		

MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)

1060-2501-CA220-MR-MRQ-002

Train 1 – (CA221-KC-050) / (221U050)

Train 2 – (CA222-KC-050) / (222U050)

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0	19-May-26	ISSUED FOR USE	IYYS	CHEJ	KRIS
REV.	DATE	REVISION DESCRIPTION	PREPARED	CHECKED	APPROVED

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REVISION HISTORY

REV.	DATE	REVISION DESCRIPTION
A	09-MAR-26	ISSUED FOR REVIEW
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NOTES:

- Revisions are denoted as follows:
 - By a vertical line in the right-hand margin against the revised text.
 - By a triangle symbol for drawing, the revision number being denoted within the symbol.
Revision symbols are positioned adjacent to revision.
 - In excel document revision is identified by colour change. e.g., blue text.
- Prepared = Prepared by Discipline Engineer
- Checked = Checked by Specialist/Lead
- Approved = Approval by Project Manager / Project Director

HOLDS:

S.NO	HOLD	REV	DESCRIPTION
	No HOLD		

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1.0 INTRODUCTION

Abu Dhabi National Oil Company P.J.S.C (“ADNOC”) intend to establish a green field integrated chlor-alkali, ethylene di chloride, vinyl chloride monomer, and polyvinyl chloride facility in the Ta’ziz Industrial Chemical Zone, which is located in the Ruwais Industrial Complex in the Western Region of the Emirate of Abu Dhabi (“Facilities”).

ADNOC is one of the world’s leading energy and petrochemicals group operating across the entire hydrocarbon value chain through a network of fully integrated businesses. ADNOC is principally active in the exploration, production, storage, refining, and distribution of oil and gas, as well as in the development of petrochemical products. With 14 specialist subsidiary and joint venture companies, ADNOC is a primary catalyst for the UAE’s growth and diversification.

TA’ZIZ is jointly controlled by ADNOC and Abu Dhabi Developmental Holding Company PJSC.

Facility capacities:

- Chlor-Alkali CA (690 KTA Chlorine at CA battery limit), EDC (945 KTA), VCM (615 KTA) and PVC (500 KTA).
- Out of 945KTA (EDC), 443.6 KTA to be exported and remaining 501.4 KTA of EDC will be utilized to produce 615 KTA VCM.
- Out of 615 KTA (VCM), 115 KTA to be exported and remaining 500 KTA of VCM will be utilized to produce 500 KTA of PVC
- Requisite Off plot facilities for the above-mentioned process plants.

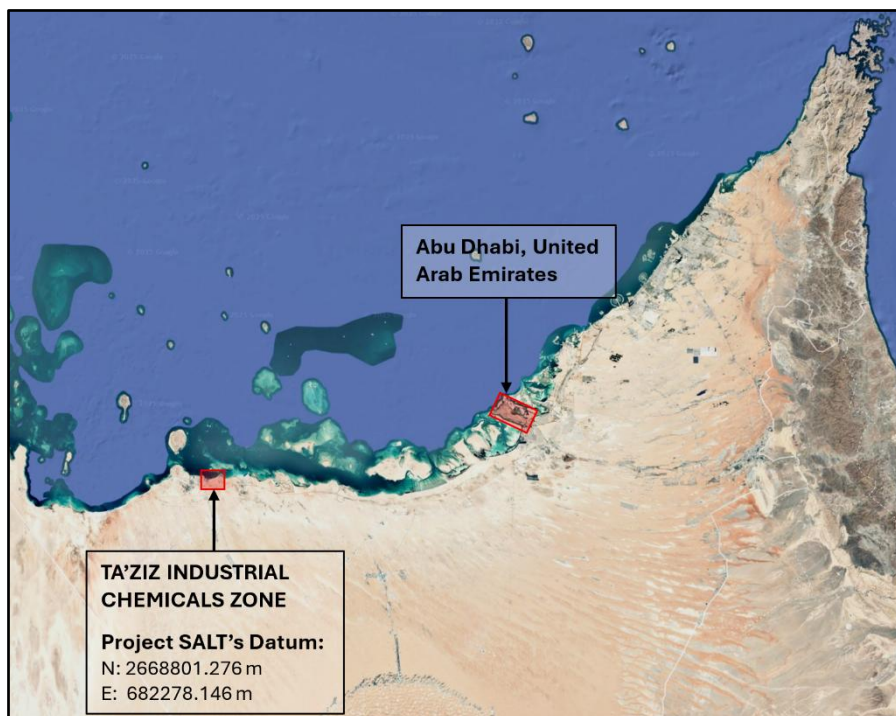


FIGURE 1-1: LOCATION OVERVIEW & BIRD VIEW FOR THE PLANT

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1.1 PROJECT BRIEF AND CAPACITIES

1.1.1 BRIEF AND CAPACITIES

PROJECT SALT to produce 945 KTA Ethylene Di-Chloride (EDC) of which 443.6 KTA to be exported and remaining 501.4 KTA of EDC will be utilized to produce 615 KTA VCM. Out of 615 KTA VCM, 115 KTA to be exported remaining 500 KTA of VCM will be utilized to produce 500 KTA PVC.

#No	Plant	Capacity (KTA)
1	CA	690
2	EDC	945
3	VCM	615
4	PVC	500

TABLE 1-1: CAPACITIES

1.1.2 MAJOR SCOPE

CA PLANT

Chlor-Alkali plant will manufacture 690 KTA Chlorine which is feedstock to EDC Plant.

Chlor-Alkali plant will produce commercial co-products 796.5 KTA Caustic lye (50+/-1%) and Hydrogen.

100% of Chlorine product will be used in the Ethylene Dichloride plant in the same complex.

Co-product Caustic lye will be transported to bulk storage tanks (not part of the PROJECT SALT scope)

Co-product Hydrogen will be supplied through pipelines for Ammonia plant and other process use.

By-product Sodium Hypochlorite will be disposed off within ISBL and additionally there shall be provision for filling and dispatch from storage tank.

Systems which are part of CA plant include, but not limited to.

- Raw salt saturator and raw pumping system
- The brine preparation and transfer from port area to CA plant
- Primary and Secondary Brine Treatment
- Anolyte dichlorination
- Sulphate removal unit
- Membrane cell electrolysis system
- Chlorine gas cooling, drying and Cl₂ compressor system
- Waste gas dechlorination system
- Catholyte system
- Caustic evaporation package
- Hydrogen treatment and compressor system
- 32% HCl Synthesis system with storage facility
- 98% H₂SO₄ regeneration system
- Associated utility system
- Plant buildings like cell house, PIBs, substation, analyser room and other buildings required for the plant.

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EDC-VCM PLANT

The capacity of EDC and VCM plants will be 945 KTA and 615 KTA respectively. Chlorine and Ethylene will be used to produce EDC. 443.6 KTA EDC will be exported and the remaining 501.4KTA EDC will be used to produce 615 KTA VCM of which 500 KTA will be used as feedstock for downstream PVC plant and remaining 115 KTA VCM will be exported.

Systems that are part of EDC/VCM plants include, but not limited to:

- EDC Process unit: Includes Direct Chlorination reactors (train configuration), EDC Purification system
- VCM Process unit: Includes the Oxy-Chlorination reactors (train configuration), EDC cracking system (train configuration), VCM purification system, EDC Purification system
- Common systems:
 - Incineration system
 - Refrigeration system
 - Chilled water system
 - Wastewater stripping system
 - Effluent treatment system (primary and secondary)
 - Intermediate storage system for both EDC and VCM plant only day storage requirement

PVC PLANT

The capacity of the Poly Vinyl Chloride plant will be 500 KTA.

PVC product will be stored at PVC warehouse. PVC product for sale will be dispatched either through roadways or seaways.

VCM will be supplied from the VCM plant.

Systems that are part of PVC plant include, but are not limited to:

- Polymerization
- Slurry stripping system,
- VCM Handling area (including recycle VCM and Fresh VCM)
- Waste water stripping
- PVC drying system
- Cat-chem day storage and associated refrigeration system
- PVC conveying system and silos
- PVC bagging system
- Wastewater handling and treatment system (primary treatment) and disposal up to plant B/L
- Refrigeration package and chilled water system

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OFF-PLOT FACILITIES

PROJECT SALT will have Off-plot facilities within its ISBL, including infrastructure common to the entire complex. Utilities will be supplied at the complex's Battery Limit (B/L) by a third party. Distribution from the B/L to each process unit's B/L is included in the Off-plot scope.

Power will be supplied to the main receiving station (within PROJECT SALT complex). Distribution to individual unit substations is part of Off-plot scope.

Project SALT units, including CA, EDC/VCM, PVC plants, and Off-plot facilities, will have interfacing connections with other TA'ZIZ stakeholders such as feedstock suppliers, off-takers, utilities providers, effluent handlers, solid waste disposal services providers, etc.

Off-plot facilities include, but are not limited to:

- Utility distribution, effluent handling (up to secondary treatment) within PROJECT SALT complex: from PROJECT SALT B/L to the process unit B/L.
- Product dispatch (scope limited to Battery limit) and feedstock receipt from PROJECT SALT BL to internal distribution to required process unit e.g., Ethylene, Caustic, EDC, VCM, PVC, Hydrogen etc.
- PVC Warehouse for intermediate storage of PVC products
- Circulating cooling water system (cooling water network within PROJECT SALT complex)
- Centrally engineered system like plant control system (ICSS) with ESD system, custody transfer metering, F&G and associated systems
- Support facilities, plant, and non-plant buildings e.g., central control room, maintenance and repair stores, labs, warehouse, workshop, cat-chem storage building etc
- Receipt and distribution of power within PROJECT SALT complex (substations and distribution network to each plant substation)
- Solid waste handling (hazardous and non-hazardous)
- Electrical systems such as receiving GIS (220kV/), consumption level power distribution, rectifier- transformers, sub-stations etc.
- Utilities such as ASU (For N₂ and O₂ generation), HVAC system, etc.
- Other infrastructure – roads, drains, boundary walls, weighbridge
- PVC plant Catalyst (initiator) refrigerated bulk storage

1.2 DEFINITIONS & ABBREVIATIONS

1.2.1 DEFINITIONS

COMPANY	ADNOC (Abu Dhabi National Oil Company P.J.S.C)
CONSULTANT(S)	Consultant appointed by COMPANY rendering services for the PROJECT/PROGRAM including PROJECT Management Consultant (PMC).
CONTRACTOR	CC7 Global Engineering Solutions LLC
DOCUMENT CONTROL	The single point group assigned responsible for distribution and tracking of Project documentation.
FACILITIES	The physical and permanent works and any improvements to them to be designed engineered, procured, constructed, erected, installed and / or

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	completed by the CONTRACTOR pursuant to the AGREEMENT and, where applicable, in accordance with the PROCESS.
LICENSE AGREEMENT	The agreement (if any) between the COMPANY and a LICENSOR pursuant to which, among other things, the LICENSOR grants licenses to the COMPANY relating to the LICENSED PROCESS.
LICENSED PROCESS	The proprietary process being licensed by the LICENSOR to the COMPANY or one of its AFFILIATES for the PROJECT, which may be granted pursuant to a LICENSE AGREEMENT.
LICENSOR(S)	Any and all persons, firms, partnerships, companies or a combination thereof directly or indirectly granting COMPANY any right or License to use INTELLECTUAL PROPERTY for the design, engineering, construction, operation and/or maintenance of INSTALLATION or SYSTEMS.
PROJECT	Detailed Engineering, Procurement, Construction, Commissioning, Start-up and Test-Run WORKS and SERVICES that are to be performed by CONTRACTOR.
SHALL	Denotes mandatory action or requirement
SHOULD	Denotes an action or requirement which is not mandatory, but which is strongly recommended to comply with
SPECIFICATIONS	The specifications, drawings and procedures referenced in the AGREEMENT or implied therein, and any modifications or additions thereto as may from time to time are approved in writing by COMPANYAs an example, when the execution strategy Changes from one subcontractor to another, existing scope, budgets and schedule are transferred to the new participant. Internal Transfers are always net zero value.
SUBCONTRACTOR(S)	Any persons, firms, companies or partnerships (not being an employee of CONTRACTOR) to whom execution of any part of the SERVICES is subcontracted by the CONTRACTOR for the performance of SERVICES.
THIRD PARTY AGENCY (TPA / TPI)	Any agency or agencies appointed or nominated by COMPANY or CONTRACTOR to certify the project or parts thereof by reference to the standards given in all relevant designs, specifications or procedural documents.
VENDOR(S)	Any and all suppliers of materials and equipment in connection with the PROJECT other than FEED CONTRACTOR, CONSULTANTS, EPC CONTRACTORS, SUBCONTRACTORS, CONTRACTORS, and LICENSORS.
WORKS	Any works and services to be performed under the AGREEMENT, as further described in the SCOPE OF WORK, and which includes provision of the WORKS DOCUMENTATION and any other deliverables specified in the AGREEMENT.
WORKS DOCUMENTATION	Any and all specifications, drawings, design, procedures, processes, data, process technology, representations, statements or documents, whether in computer readable or other written form, that the CONTRACTOR is required to create, develop and / or provide under the AGREEMENT.

TABLE 1-2: DEFINITIONS

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1.2.2 ABBREVIATIONS

Abbreviation	Description
ADNOC	Abu Dhabi National Oil Company
AISC	American Institute of Steel Construction
ANSI	American national standards institute
APH	Air Preheater
API	American Petroleum Institute
BEDD	Basic Engineering Design Data
BMS	Burner management system
CFD	Computational Fluid Dynamics
CI / CS / LAS	Cast Iron / Carbon Steel / Low Alloy Steel
PCS	Process Control System
ESD	Emergency Shutdown System
EPCM	Engineering, Procurement and Construction Management
FAT	Factory Acceptance Test
FD / ID	Forced draught / Induced draught
HHV	Higher Heating Value
ISBL	Inside Battery Limit
LANDING	Project LANDING for Logistics, Jetty and Tankage, Pipelines for feedstock and product from/ to derivative units and port
JB	Junction Box
LCP	Local Control Panel
LHV	Lower Heating Value
MCMS	Machine Condition Monitoring System
MR	Material Requisition
OEM	Original Equipment Manufacturer
P&ID	Piping and Instrumentation Diagram
PLC	Programmable logic controller
PMI	Positive material Identification
PWHT	Post weld heat treatment
QTY.	Quantity or Numbers.
SS	Stainless steel
TDP	TAZIZ Derivative Park

TABLE 1-3: ABBREVIATIONS

1.3 REFERENCES

Vendor to refer the applicable Documents Codes and Standards in Attachment-2 of this MR.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		
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1.4 ORDER OF PRECEDENCE

The requirements of the standards and publications referenced in this specification shall be applied in the following order of precedence:

1. UAE Statutory Legislation requirements
2. ADNOC HSE Standards
3. Equipment Datasheets and drawings
4. Project Specifications and standard drawings
5. COMPANY Specifications
6. National/International Standards

The above applies only in case of conflict between in requirements to the extent that both requirements cannot co-exist. Any such conflict between the requirements of the above documents shall be brought to the COMPANY's attention for resolution, prior to award.

2.0 PURPOSE OF DOCUMENT

The purpose of this Material Requisition (MR) is to outline requirements for the design, engineering, procurement of materials and auxiliary equipment, manufacturing, fabrication, and erection of the Chlorine Gas Compressor, including all associated auxiliary equipment.

3.0 VENDOR RESPONSIBILITY

3.1 GENERAL

VENDOR shall be responsible for all the design and reliability of the scope of supply as whole.

VENDOR is deemed to be skilled in this type of equipment and shall be ultimately responsible for required performance equipment operation and all aspects of the equipment supplied.

VENDOR shall coordinate, expedite and solve any issues with SUB-VENDORS.

3.2 LANGUAGE REQUIREMENTS

All documents shall be legible and shall be submitted in English language unless otherwise requested or specified by project specific attachments to the Material Requisition.

3.3 APPLICABLE PROJECT SPECIFICATIONS, CODES & STANDARDS

Refer Attachment 2- Applicable Project Specifications, Codes & Standards.

3.4 EXCEPTIONS, DEVIATIONS AND CLARIFICATIONS

VENDOR shall make all possible efforts to comply strictly with the requirements of this requisition. If VENDOR has a justified reason to deviate from this Material Requisition, VENDOR shall submit a list of Exceptions/Deviations with VENDOR's proposal describing details of deviation using the format in

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ATTACHMENT 3 (Exceptions, Deviations & Clarifications Form) in a separate section of VENDOR proposal (native file shall be provided also to be used during the technical bid evaluation phase). Deviations which can be withdrawn with additional cost and time shall not be considered and treated as withdrawn.

Even in case VENDOR has no Exception/Deviation, VENDOR shall provide the Exceptions, Deviations and Clarifications form clearly mentioning “NO EXCEPTIONS/DEVIATIONS TO MATERIAL REQUISITION (number and revision) AND THE DOCUMENTS THEREIN MENTIONED”.

Exceptions/Deviations are subject to CONTRACTOR/COMPANY approval.

Failure to provide the Exceptions, Deviations & Clarifications form, VENDOR may be disqualified from the bid. Where applicable, the Exceptions/Deviations shall be addressed with “commercial impact” and commercial impact (cost / delivery) shall be stated in the commercial bid.

For any clarification VENDOR need to raise to CONTRACTOR, VENDOR shall use the form for Exceptions, Deviations & Clarifications ATTACHMENT 3 and submit them together with the Exceptions and Deviations in a separate section of VENDOR proposal (with native file).

3.5 UNIT RESPONSIBILITY

Unit Responsibility shall be with the driven equipment manufacturer in case of equipment supplier and packager in case of package; who shall also be SPRV (Single Point Responsibility Vendor) for the complete equipment unit including driver, driven equipment and all other associated auxiliary system, instrumentation and controls, etc. All Rotating Equipment drivers shall be procured from the respective driven equipment manufacturers, complete with all associated auxiliary systems. Package Vendor shall co-ordinate the design of their package to ensure functionality of the complete process, utility, electrical and control systems into which it is integrated.

Equipment shall be assembled on a minimum number of single point lift units, for efficient and cost-effective transportation and installation. The design shall be suited for transportation with a minimum number of shipped loose items.

4.0 DETAILED SCOPE OF SUPPLY & SERVICES

Scope of Supply and Scope of Services shall be in accordance with Attachment-1: Scope of Supply and Services.

5.0 VENDOR DOCUMENTATION REQUIREMENTS

The Documentation Drawings and data requirements shall be in accordance with Attachment-4 - Vendor Document Requirement list.

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6.0 QUALITY ASSURANCE

VENDOR shall submit QA / QC program to EPC contractor for review and approval prior to award of contract.

Post award, VENDOR shall submit to EPC contractor a copy of Inspection and Test Plans for review and approval in line with COMPANY specifications.

- 1060-2501-ST000-QA-SPE-001- Addendum to (1060-QA-SPE-001) Specification for QA/QC Requirements
- 1060-2501-ST000-QA-SPE-003- Addendum to (1060-QA-SPE-003) Specification for Procurement, Inspection and Certification requirements
- 1060-2501-ST000-QA-SPE-002 - Addendum to (1060-QA-SPE-002) Specification for Criticality Rating

6.1 CRITICALITY RATING

Criticality rating for Chlorine Gas Compressors is “1 (One)”. VENDOR to include testing and inspection requirement for Chlorine Gas Compressors as per PROJECT SALT standard “Addendum to (1060-QA-SPE-002) Specification for Criticality Rating 1060-2501-ST000-QA-SPE-002”.

6.2 MATERIAL CERTIFICATION

VENDOR shall assess and submit the material certification in accordance with “Material certification Requirements” of PROJECT SALT “Addendum to Specification for Procurement Inspection and Certification Requirements 1060-2501-ST000-QA-SPE-003” and Attachment 6 – Supplier Quality Requirement form.

MATERIAL TRACEABILITY AND CERTIFICATION:

For CR/IC-1, where the EN 10204 Type 3.2 certification is required. The Material Certificate type as noted below table shall apply unless otherwise stated in the Equipment/Product Material Datasheet or Specification. Material Test Certificates provided by the VENDOR shall conform to ISO 10474 / BS EN 10204 Type 3.1, 3.2, 2.1, 2.2, as applicable.

Package/Equipment Component	Material Certificate Type
All pressure-retaining parts and the items which comes under the process/service.	3.2
Non-Pressure Parts and External attachment, Internals, Baseplate, Fasteners & Gasket	3.1
Structural	2.2

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Package/Equipment Component	Material Certificate Type
Control Valves	3.2 / 3.1
FRP Tank	3.2
Electrical & Instrumentation items	3.1
Miscellaneous other items	2.1

TABLE 6-1: MATERIAL TEST CERTIFICATE TABLE

Note: In case of any conflict between the Specification, documents, or datasheet, the most stringent certification requirement shall prevail. Any deviation shall be subject to Company approval.

7.0 INSPECTION AND CERTIFICATION

- Inspection and testing requirements have been detailed out in data sheets & specifications.
 - Vendor shall refer to Document No. 1060-2501-ST000-QA-SPE-003, Specification for Procurement, Inspection and Certification Requirements, which defines the typical Inspection and Test Plan (ITP) and intervention requirements applicable to each item
 - In accordance with the Project requirements, the Vendor shall prepare and submit a detailed Inspection and Test Plan (ITP) for Contractor and Company review and approval.
 - Inspection shall be carried out in line with inspection class mentioned under " table 8-1: "minimum inspection requirements " of the specification for criticality rating document 1060-2501-ST000-QA-SPE-002

8.0 ATTACHMENTS

- Attachment-1: Scope of Supply and Services
- Attachment-2: Applicable Project Specifications, Codes & Standards
- Attachment-3: Exceptions, Deviations, Clarifications Form
- Attachment-4: Vendor Document Requirement List
- Attachment-5: Utility Consumption and Electrical Load List Format
- Attachment-6: Supplier Quality Requirement Form
- Attachment-7: Technical Offer completeness Checklist
- Attachment-8: Technical Query Format
- Attachment-9: SPIR Format
- Attachment -10 - Format for Experience Record Proforma for Chlorine Compression Unit
- Attachment -11 - Lubrication Schedule – Format
- Attachment –12 - Power Loading and Penalty for Chlorine Gas Compressor
- Attachment–13 – Electrical Block Diagram
- Attachment 14 - Instrument Package Type C-Typical Arrangement Block Diagram

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102					 	
		ATTACHMENT 1 - SCOPE OF SUPPLY AND SERVICES						
COMPANY PROJECT No. :		1060-2501					DATE :	19-May-2026
CONTRACTOR PROJECT No.:		25002					REV. No.	0
PROJECT:		PROJECT SALT					VENDOR :	
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002					OFFER REF.:	
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)					OFFER DATE:	
Rev.	SNo.	ITEM DESCRIPTION	Qty.	By Vendor	By CONT.	Vendor Confirmation	Remarks	
	A	SCOPE OF SUPPLY FOR TRAIN 1 AND TRAIN 2						
		MAIN ITEM / PACKAGE SKID						
	1	CA221-KC-050 / 221U050 CHLORINE COMPRESSION UNIT – TRAIN 1	1 No.	X			Centrifugal Compressor (API 617, 8th Edition, Chapter -1&2) Compressor (Driven by an Electric Motor) along with Auxiliaries and instrumentation & Controls Main Drive motor -Fixed speed MV Main Motor	
	2	CA222-KC-050 / 222U050 CHLORINE COMPRESSION UNIT – TRAIN 2	1 No.	X			Centrifugal Compressor (API 617, 8th Edition, Chapter -1&2) Compressor (Driven by an Electric Motor) along with Auxiliaries and instrumentation & Controls Main Drive motor - Fixed speed MV Main Motor	
Note: All the items /services listed below are applicable for both the compressor trains individually and shall be considered by vendor in their scope accordingly								
	3	Compressors		X			Compressors shall be in compliance with Addendum To Specification For Axial & Centrifugal Compressor And Expander-Compressor (Amendments / Supplements To API-617, 8TH ED.) 1060-2501-ST000-MR-SPE-004 and shall also comply with the requirements specified in design basis, equipment data sheets and specifications listed in attachment-2 of this requisition.	
	3.1	Centrifugal Compressor (with variable inlet guide vanes) as per API 617 8th Edition Chapt 1 & 2 with all related auxiliaries as per Project Data Sheets, P&IDs and Project Specifications attached with the MR.	-	X			Casing Split: Horizontal	
	3.2	Self-Acting Dry Gas Seal and Seal Gas System : a) Dry Gas Seal (Dual Tandem Dry Gas Seal with Intermediate Labyrinth) b) Dry Gas Seal System (separate skid) with all related instruments duly mounted/assembled on rack/panel c) Interconnecting piping (SS316L) between Dry Gas seal system and Dry Gas seal with necessary supports	-	X			a) API 614 5th edition, Chapter 4, Dry Gas Seal and Seal system Mechanical datasheet (Part of compressor mechanical datasheet) and project specifications b) Dry Gas Seal shall be bi-directional and cartridge type. The DGS shall be interchangeable between DE and NDE side. c) Interconnecting piping between Dry Gas seal system and Dry gas seal shall be as per project piping specification	
	3.3	Compressor capacity control with Variable Inlet Guide vane (IGV). IGV assembly with positioner & Capacity Controller. Buffering for IGV cavity & Monitoring for leakage control etc.	-	X			As per Datasheet & applicable Project Specifications.	
	3.4	Temporary & Permanent Suction Strainer with Spool piece & PDIT across strainer	-	X			Pressure drop across suction strainer shall not exceed 0.03 bar	
	3.5	Check valve at Compressor Discharge : Ball lift type PTFE lined.	-	X			For each stage discharge (Loose supply)	
0	3.6	Discharge PSV			X		In contractor scope, Engineering input (if required) by vendor	
	3.7	Dedicated Anti-surge Controller system - a) The Anti-Surge Controller b) All Surge Protection Instruments : Suction Side (TT & PT), from Discharge side (PT, FT and TT) and indicator required for complete anti-surge loop c) Anti-surge valve (for Each stage)	-	X			a) For each stage (as applicable) b) Dedicated Anti-Surge Control System shall be as per Project Specification & Addendum to (1060-IC-SPE-005) for Machinery Instrument System - 1060-2501-ST000-IC-SPE-005 c) Complete system Design, Engineering, installation and testing by vendor	
0	3.8	Hot/Cold gas bypass valve & Piping along with anti-surge control valve	-	X			if required / recommended as an outcome of dynamic simulation in Vendor Scope with Inputs From Contractor	
	3.9	Compressor Casing Drains with Valve and flange connection manifolded up to single connection to the edge of the skid	-	X				
0	3.10	Noise Hood (if applicable) (incl.2 doors , 2 fans - 2 x 100%)	-	X			Provision for installation of F&G System and Fire Extinguishers inside the Noise Hood shall be considered in the Vendor scope. F&G system & Fire Extinguishers are in Contractor scope. Vendor to advise if any additional F&G and Fire Fighting requirement within vendor supplied package	
	4	Fixed Speed HV Main Motor	-	X			Refer Electrical Specification attached with MR	
	5	Gearbox	-	X			Double Helical, parallel shaft, speed increasing type with fixed gear ratio suitably designed for the specified duty conditions. In compliance with API 613 5th Ed and technical requirements specified in the Addendum (1060-MR-SPE-010) to Specification for Special Purpose Gearbox (Amendments / Supplements to API-613, 5th Ed.) - 1060-2501-ST000-MR-SPE-010	
	6	Couplings and Guards	-	X			Non-Lubricated, Metallic Flexible Spacer, Hydraulically fitted keyless type Special Purpose Coupling (As per API 671 4th Ed). Non-Sparking (Brass/Aluminium Alloy/ Copper Alloys) type Coupling Guard for each Coupling. Coupling guard shall be provided with oil drain line, which shall be connected to lube oil return line and provided with sight glass. Refer Mechanical Data Sheet for details. Coupling alignment device with dial gauges, coupling removing device shall also be supplied.	
	7	Common Baseplate	-	X				
	7.1	Fabricated Steel Base Plate: Common for Compressor, Gearbox and Main Electrical Driver with levelling pads, stainless steel shims and foundation bolts with plates.	-	X			If common baseplate is not feasible due to transportation, separate baseplate for compressor and Main Driver can be offered. However, the same shall be designed to be integrated (i.e. bolted / dowelled) at site.	
	7.2	Baseplate to have Drip rim with drain holes	-	X				
	8	Lube Oil System	-	X			As per Chapter 1 & 2 of API 614, 5th Edition , technical requirements specified in the Addendum to (1060-MR-SPE-009) Specification for Lubrication, Shaft Sealing & Oil-Control Systems and Auxiliaries (Amendments / Supplements to API-614, 5th Ed.) - 1060-2501-ST000-MR-SPE-009 , Lube Oil Datasheets, Project Specifications attached with the MR	
	8.1	A combined forced feed lubrication system for compressor, gearbox and electric motor	-	X			Separate Lube Oil Console to be mounted at grade level.	
	8.2	Lube Oil Console complete with the following	-	X				
	8.2.1	Stainless Steel Oil reservoir shall be with - Level Transmitter - Electric heater with integrated thermostat - Level Gauge with block valve - Reservoir drain shall have double isolation valves - Temperature Indicator - Oil Vapour Extraction / Mist Eliminator Fan with drive motor (1W+1S) Loose supply - Flame arrestor (Loose supply) - Two separate nozzles with isolation valve shall be provided on oil reservoir for on line cleaning of oil - Pressure safety valve (For under pressure (vacuum) and over pressure protection)	-	X				
	8.2.2	Electric motor driven main oil pump with safety / relief valve	-	X			Horizontal, screw pumps shall be supplied. Pumps shall be designed as per Project Specification No Addendum to Specification for Positive Displacement Pump (Rotary) (Amendments / Supplements to API-676, 3rd Edition) - 1060-2501-ST000-MR-SPE-018	

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		ATTACHMENT 1 - SCOPE OF SUPPLY AND SERVICES						
COMPANY PROJECT No. :		1060-2501					DATE :	19-May-2026
CONTRACTOR PROJECT No.:		25002					REV. No.	0
PROJECT:		PROJECT SALT					VENDOR :	
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002					OFFER REF.:	
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)					OFFER DATE:	
Rev.	SNo.	ITEM DESCRIPTION	Qty.	By Vendor	By CONT.	Vendor Confirmation	Remarks	
	8.2.3	Electric motor driven standby oil pump with safety / relief valve	-	X			Horizontal, screw pumps shall be supplied. Pumps shall be designed as per Project Specification No Addendum to Specification for Positive Displacement Pump (Rotary) (Amendments / Supplements to API-676, 3rd Edition) - 1060-2501-ST000-MR-SPE-018	
	8.2.4	Electric motor driven emergency oil pump (if required) with safety / relief valve including separate single filte	-	X			Refer Clause 4.1.19 of Addendum to Specification for Lubrication, Shaft Sealing & Oil-Control Systems and Auxiliaries (Amendments / Supplements to API-614, 5th Ed.) (Doc No. 1060-2501-ST000-MR-SPE-009)	
	8.2.5	Twin oil cooler	-	X			As per TEMA C and project specifications as listed in attachment-2 of this MR	
	8.2.6	Twin oil filters with PDIT	-	X			As per ASME Sec VII, Div. 1 and project specifcations as listed in Attachment-2 of this MR	
	8.2.7	Continuous Flow Transfer Valves for independent for Lube oil Coolers and Lube oil Filters	-	X			2 Nos of 2 way 3 ported	
	8.2.8	Temperature Control valve and pressure control valves	-	X				
	8.2.9	Accumulator	-	X				
	8.2.10	All instruments & control duly mounted	-	X				
	8.2.11	Skid mounted Local Gauge Board with all instruments mounted on it	-	X				
	8.2.12	All stainless steel interconnecting, pre-fabricated piping duly installed	-	X				
	8.3	All stainless stell (min SS316L) supply & return piping with pipe supports between LO console & Compressor / Gearbox/ Main motor driver	-	X			Scope of supply of interconnecting piping between following shall be included: A) Rundown tank to lube oil system / Compressor skid B) Oil reservoir to lube oil mist eliminator till safe location	
	8.4	Necessary Instrumentation & Controls for complete package	-	X				
	8.5	Lube oil Rundown tank (sized for equipment coast down) OR minimum 3 minutes whichever is higher along with all necessary piping, instrumentation and controls	-	X				
	8.6	Baseframe for oil unit with levelling pads and stainless steel shims & foundation bolts	-	X				
	8.7	Ladder with Handrails for lube oil reservoir, non-skid decking, oversized flanged vent, siphon breaker & handrails on top	-	X			As per Chapter 1 & 2 of API 614, 5th Edition and Lube Oil Datasheets, Project Specifications attached with the MR.	
	8.8	Portable trolley mounted lube oil purifier complete with driver, flexible hose piping (10 m each at suction & discharge), hose storage wheel, valves, motor cable of approximately 20m length, plug & socket to suit the area classification	-	X			1 Nos for Train 1 & Train 2 - Sized for purifying of complete quantity of reservoir lube oil in 12 hrs	
	8.9	Portable trolley mounted emptying / filling oil pumps for Lube Oil Reservoir complete with driver, flexible hose piping (10 m each at suction& discharge), hose storage wheel, valves, motor cable of approximately 20 m length, plug & socket to suit the area classification.	-	X				
0	8.10	Fire Fighting System for Lube Oil Skid	-	-	X		Vendor to advise if any Fire Fighting requirement with vendor supplied Lube Skid	
0	9	Intercoolers, Aftercoolers and Knock-out vessel for the Dry gas seal system	-	X			For each stage, as applicable As per TEMA R and project specifications listed in Attachment-2 of this MR. Knock-out vessel shall be as per ASME Sec VIII, Div. 1 and Project specifcation as listed in Attachment-2 of this MR	
	10	Piping	-	X				
	10.1	Process gas piping of upstream and downstream of compressor Including final discharge non-return valve and isolation valve, interconnecting piping of intercooler, aftercooler, Anti-surge valve piping	-	X			As per Attachment 2- Applicable Documents, Codes and Standards of Material Requisition for Chlorine Gas Compressor	
	10.2	Complete interconnecting piping (SS316 L) within and between various skids (i.e. Main equipment skids and various auxiliary skids such as lube oil console, dry gas seal system etc.)	-	X			All Interconnecting piping's between compressor skid and various auxiliaries (Lube oil system, Dry gas seal system etc.) skids shall be as per project piping specification.	
	10.3	All Utility piping (i.e. instrument Air, N2, and cooling water etc.) including fitting and supports within the package battery limit as detailed in this Material Requisition	-	X			Manifolded headers for all utilities within the boundary of the Battery Limit . The CONTRACTOR will supply only one point of connection for each utility (instrument air, water, nitrogen etc.).	
	10.4	All nozzles at terminal points shall be terminated at the skid edge /Battery Limits with valve & flange, with ANSI standard flanges, for all connections	-	X				
	10.5	Heat Tracing of seal gas piping (if applicable)	-	X				
	10.6	Drain & Vent piping within package battery limit with isolation valve and blind flange to the skids edge.	-	X				
	10.7	Matching companion Flanges with gaskets, Nuts & Bolts etc. at all terminating point requiring CONTRACTOR interface connection for all Non-Standard Flanges.	-	X				
	10.8	Complete (Primary, secondary etc.) supports for the piping within vendor scope of supply	-	X				
	10.9	For all lines (loose supplied piping) coming in vendor's scope of supply: a) Engineering isometrics b). Small bore 1 1/2" and below Piping line wise MTO along with fabrication isometric (interconnecting piping between skid) c) Prefabricated supports for all piping in vendor scope of supply. d) Information for all small bore 1 1/2" and below auxiliary piping line list along with test medium, test pressure, painting system, insulation requirement, NDT requirements for site erection during detail engg.	-	X			Pipe length for site adjustment and all fabricated spools properly marked up for easy identification at site shall be as per specification 1060-2501-ST000-PG-SPE-029 SPECIFICATION FOR FABRICATION, HANDLING AND INSTALLATION OF PROCESS AND UTILITY PIPING.	
	10.10	For all secondary support, vendor to provide below details during detail engg with editable copy. a) Support location drawing b) Detailed fabrication drawing of secondary support along with steel MTO. c) Complete bill of material for secondary support. d) Painting MTO for secondary support.	-	X				
	10.11	Stress analysis for entire piping network within vendors package battery limit.	-	X				
	10.12	Insulation B.O.Q. for all items like Equipment, piping, etc.	-	X			Procurement and installation/application of insulation will be by CONTRACTOR based on the details furnished by vendor.	
	11	ELECTRICAL						
	11.1	HV Switchgear / LV Switchgear will be provided by the Contractor.	-		X			
	11.2	The Vendor shall supply HV and LV motors complete with all required accessories as per project specifications listed in Attachment-2 of this MR.	-	X				
	11.3	All Electric Motors shall be supplied supplied with canopies and oversized Terminal Boxes suitable for Aluminium Cable connections.	-	X				
0	11.4	Anti-condensation heaters shall be provided for HV (6.6kV& 11kV) motors and HV motor terminal boxes. LV motors more than 37kW rating shall have anticondensation heater for winding.	-	X			in accordance with the Technical Specification. 1060-2501-ST000-EL-SPE-009.	
	11.5	High-voltage motors with an input voltage of 6.6 kV or higher shall be equipped with HFCT partial discharge sensors in accordance with Technical Specification 1060-2501-ST000-EL-SPE-009.	-	X				

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COMPANY PROJECT No. :		1060-2501					DATE :	19-May-2026
CONTRACTOR PROJECT No.:		25002					REV. No.	0
PROJECT:		PROJECT SALT					VENDOR :	
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002					OFFER REF.:	
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Rev.	SNo.	ITEM DESCRIPTION	Qty.	By Vendor	By CONT.	Vendor Confirmation	Remarks	
	11.6	Bulk Materials (Cable Glands, Lugs, Earthing materials) as required (within package Battery Limit) shall be provided as per 1060-2501-ST000-EL-SPE-022.	-	X				
	11.7	Each motor shall be provided with a Local Control Station (LCS) having IP66 protection and a protective canopy in accordance with Technical Specification 1060-2501-ST000-EL-SPE-018.	-	X				
	11.8	Local control panels supplied on skid as part of the main package shall be suitable for Indoor/outdoor installation,	-	X				
0	11.9	GRP/FRP cable tray for safe area & HDG/ stainless steel for hazardous areas (as applicable) along with supports (within package Battery Limit) .	-	X				
	11.10	Earthing Cable/Strip/Tape/Hardware installation within Package Battery Limit.	-	X				
	11.11	HV/LV cables (power and control) (from Contractor's switchgear to main/auxiliary motors).	-		X			
	11.12	LV cables (power and control) (within battery limit - from Local Control Panel to LCS, motors, on-motor consumers, etc.).	-	X				
	11.13	VFDs if the same are required as per Package vendor requiriements	-	X				
	12	INSTRUMENTATION						
	12.1	All necessary field instruments (i.e. Gauges, Transmitters, control valves, safety valves, on-off valve(s) required for compressor and auxiliary skids, junction boxes, wiring/cables upto junction boxes, local gauge board, cable trays, cable tray supports etc.	-	X			For minimum required instruments, refer Mechanical Data Sheet & project specifications as listed in Attachment-2 of this MR	
	12.2	Programmable Logic Control (PLC) located Local control room of Chlorine gas compressor area and Local Control Panel near the compressor with all instruments like indicators, push buttons, etc.	-	X			The Vendor shall standardize the PLC make and model in coordination with the EPC Contractor, in accordance with the standardization requirements specified in the Project Specification - Addendum to (1060-IC-SPE-004) Specification for programmable logic controller (PLC) -1060-2501-ST000-IC-SPE-004	
	12.3	Machine Monitoring System	-	X			Machine monitoring system shall be provided meeting the minimum requirements as per API 670 and the Addendum to (1060-IC-SPE-005) Specification for Machinery Instrument System (Doc no. 1060-2501-ST000-IC-SPE-005)	
	12.4	Machine monitoring Instrumentation for Compressor, Gearbox, Main Drive Motor	-	X			Refer to Addendum to (1060-MR-DEG-002) Guidelines for Online Condition Monitoring of Rotating Equipment - 1060-2501-ST000-MR-DEG-002 (Note: Number of sensors shall be determined by Supplier for meeting voting logic requirements based on the criticality, SIL study and as specified in the Project Specification Addendum for SPECIFICATION FOR MACHINERY INSTRUMENT SYSTEM Doc. No. 1060-2501-ST000-IC-SPE-005)	
	12.5	Anti Surge Control System	-	X			Refer Mechanical Data Sheets of Chlorine Compressor and COMPANY Specification 1060-2501-ST000- MR-SPE-004.	
	12.6	All instrument cabling from instrument to Junction box (For Non-Skid type)	-	X				
	12.7	Multipair cabling from Skid Mounted Junction box to Vendor supplied PLC control panel and MMS cabinet.	-		X			
	12.8	Multipair Cable between Vendor supplied PLC control panel and MMS cabinet & Local Panel	-		X			
	12.9	Local Control Panel for Compresor Package	-	X				
	12.10	Serial communication of Vendor supplied PLC control panel and MMS cabinet with Main Plant PCS/ESD - through Redundant MODBUS protocol through TCP/IP	-		X			
	12.11	All instrument on pressure part- engineering and supply by Supplier	-	X				
0	12.12	Cable tray along with cable tray support for electrical and instrument cable (MOC -GRP/FRP)	-	X				
	12.13	Commissioning spares for all vendor supplied instrumentation items and add-on items	-	X				
	12.14	Mandatory spares for all vendor supplied instrumentation items and add-on items	-	X				
	12.15	List of spares for 2 years' operation & maintenance - Dully filled in and completed SPIR FORM in accordance with Attachment - IX under electronic spread sheet format to be a part of document Index.	-	X				
	12.16	SPI Data update	-	X			Vendor shall fill SPI data based on CONTRACTOR supplied files (Instrument List, I/O List, Datasheets, JB Wiring, and Loop Wiring) and submit the files in standard formats	
	13	SPARE PARTS AND SPECIAL TOOLS AND TACKLES						
	13.1	Insurance Spares as listed below shall be quoted linewise , as a minimum, in addition to vendor recommendation (if any) over and above below list		X				
	13.1.1	compressor rotor set, already balanced	1 Set	X				
	13.1.2	Mechanical running test for compressor spare rotor set	1 Set	X				
	13.1.3	Container for compressor rotor set (Nitrogen purged metal container)	1 Set	X			with N2 cylinder, pressure gauge, safety devices and alarm to indicate loss of N2 pressure	
	13.1.4	Gearbox rotor set	1 Set	X				
	13.1.5	Mechanical running test for gearbox spare rotor set	1 Set	X				
	13.1.6	Container for gearbox rotor set (Nitrogen purged metal container)	1 Set	X			with N2 cylinder, pressure gauge, safety devices and alarm to indicate loss of N2 pressure	
	13.1.7	Couplings (HS and LS)	1 Set	X				
	13.1.8	Bearings for compressor, gearbox and main electric motor driver	1 Set	X				
	13.1.9	DE and NDE dry gas seals	1 Set	X				
	13.1.10	Complete lube oil pump with motor	1 Set	X				
		Electrical Spares for Main Motor		X				
	13.1.11	Main Terminal Box	1 Set	X				
	13.1.12	Power Terminal Plate	1 Set	X				
	13.1.13	Aux. Terminal Box	1 Set	X				
	13.1.14	Gaskets For All Terminal Box	2 No.Per Terminal Box	X				
	13.1.15	Fan	1 No.	X				
	13.1.16	Fan Cover	1 No.	X				
	13.1.17	End Shield	2 No's	X				
	13.1.18	For static equipment, Insurance spares shall be: A) Gasket: 200% of installed gasket B) studs with nuts & washers: 10% of the installed spares studs with nuts / washers (Minimum 4 studs / type)	1 set	X				
	13.2	Erection and Commissioning spares for complete package as recommended by vendor (list to be submitted with offer)		X			Refer Note 1	
0	13.3	2 years normal operating spare parts recommended by Vendor including all Mechanical, Electrical and instrumentation items (Itemwise separate quote to be submitted with offer), minimum base scope shall be as below list along with vendor recommendation (if any) in addition to below list		X			Two year spares shall be ordered by the CONTRACTOR separate	
	13.3.1	Gaskets/O-rings for compressor casing joint	1 Set					
	13.3.2	Oil splash ring seals for bearing housings	1 Set					
	13.3.3	Oil seal rings for journal bearings	1 Set					
	13.3.4	O-rings for dry-gas-seals	1 Set					

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COMPANY PROJECT No. :		1060-2501						DATE :	19-May-2026
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	13.3.5	Llaminated coal for eddy current deloader	1 Set						
	13.3.6	Seal strips and caulking wires for all stationary labyrinth seals	1 Set						
	13.3.7	Seal strips and caulking wires for all rotating labyrinth seals	1 Set						
	13.4	Special tools & Tackles for Compressor, Gearbox, Main Driver, other auxiliaries required, (if any) for transportation, erection, site assembly and maintenance of each equipment of the package as recommended by respective equipment manufactures including hydraulic assembly /Disassembly device for coupling (List to be submitted with offer)	-	X			Refer Note 2		
0	13.5	Third Party Certified Spreader bars / Slings / shackles / frame / lifting beam for transportation / erection of complete package	-	X			If applicable		
	13.6	Torque wrenches / Hydraulic bolt tensioner	-	X			If applicable		
	14	MISCELLANEOUS							
	14.1	Baseplate / Levelling Plate / Mounting Plate, Sole Plate for compressor, Gearbox and Driver, Vertical and horizontal alignment with levelling screws	-	X					
	14.2	Levelling bolts, Chock blocks, Liners & Shim plates	-	X			For all console/skids and any miscellaneous supports, Equipment supplied by vendor		
	14.3	Lifting lugs, tailing lugs and earthing lugs as required	-	X					
	14.4	All operating platforms, ladders for normal operation and maintenance of the compressor package.	-	X					
	14.5	Suction and discharge compensators	-	X					
	14.6	Engraved Nameplates including brackets . Marking identification for all parts of package unit	-	X					
	14.7	Torsional analysis of complete train	-	X					
	14.8	Lateral analysis for complete train.	-	X					
	14.9	Dynamic Simulation for Compressor Package, Phase map analysis, vent study etc. and equipment design calculation (i.e pressure vessel calculation, heat exchanger thermal calculation etc) and its Report	-	X					
	14.10	Stability Analysis for Compressor Package	-	X					
	14.11	Review and Approval of CONTRACTOR's piping drawing for Consistency Check	-	X					
	14.12	Detail engineering of interconnecting piping in vendor's scope including preparation of piping plans, piping isometrics	-	X					
	14.13	Chemical cleaning, pickling and passivation etc. as applicable	-	X					
	14.14	All civil works, compressor house building	-		X		Civil works will be done by CONTRACTOR based on the engineering details provided by Vendor		
	14.15	Painting	-	X			Addendum To (1060-MC-SPE-007) Specification for Painting and Coating - 1060-2501-ST000-MC-SPE-007		
	14.15.1	Surface Preparation & Shop Primer Painting	-	X					
	14.15.2	Intermediate + Finish Coat at Shop	-	X					
	14.15.3	Painting of Bought-out Items	-	X					
	14.15.4	Supply of Touch-up Paint for Site application	-	X					
	14.15.5	Hot dip galvanizing for all grating etc.	-	X					
	14.16	Lubricant, chemicals, and consumables etc. required for testing, trial runs, flushing, pre-commissioning and commissioning and also the initial fill to maximum capacity	-	X			Equivalent ADNOC grades shall be mentioned in the Lubrication Schedule.		
	14.17	Transportation to site for all items supplied by vendor	-	X			Optional cost to be provided		
0	14.18	Extra filter element for Shipment	-	X			As per Mechanical Datasheets		
	B	SCOPE OF SERVICES FOR TRAIN 1 AND TRAIN 2							
	1	Mechanical Design of entire unit to the extent of the Vendor's Supply as per MR Applicable documents, Datasheets and Specifications	-	X					
0	2	Perfomance and Mechanical Guarantees	-	X			As per Compressor Datasheet		
	3	Detail Engineering including Process, Mechanical, Civil, Piping, Instrumentation and Electrical design with defined battery limit scope.	-	X					
	4	Material and Equipment Procurement	-	X					
	5	Manufacturing and Assembly	-	X					
	6	External Insulation Engineering and Installation at site	-	X					
	7	Nozzle loads for process inlet and outlet connections for all Compressors (Supplier to confirm ~1.85 times of API-617 loads for process outlet nozzles & process inlet Nozzles)	-	X					
	8	Piping and Instrumentation Diagrams (P&ID) in Smartplant (SPID) set up	-	X					
	8	Stress Analysis for Piping, Supports, Platforms etc..	-	X					
	9	Review of CONTRACTOR's foundation layout plan	-	X					
	10	3D Modelling using S3D- Latest Version (V14.00.05.0438) (Complete compressor assembly) Including all auxiliaries and all interconnecting piping	-	X			3D model shall be submitted at 30%, 60% and 90% stages. Comments by DEC / EPC Contractor shall be incorporated without cost / schedule implications. 3D Model developed by VENDOR shall be intelligent with all line attributes duly filled. Details related to database range; standard project naming convention shall be provided by EPC Contractor to VENDOR. This 3D model shall be transferred to EPC Contractor for inclusion in the main plant 3D model.		
	11	Foundation Load (static & dynamic) Data & drawings for Design of Foundation Anchor Bolt/ Structural Setting Bolt for all items in package including supports.	-	X					
	12	HAZOP and SIL Participation by the Vendor and Implementation of Hazop / SIL Study requirement without cost and schedule Impact	-	X			Vendor shall quote separate mandays for participation along with all expenses towards the same. Vendor to incorporate the Safety studies comments without any cost and schedule implication.		
	13	Electrical Load List, Electrical Layout,Cable list with Termination details, Subvendor documents & Bill of Quantity for Bulk Materials	-	X					
	14	IO Database, Logic Diagram, Complete Loop Narrative etc. in CONTRACTOR supplied format	-	X					
	15	Document Submission (After Award of Order) as per Attachment - 4 Vendor document Requirement List	-	X					
	16	Documentation for local government certifications and approvals	-	X					
	17	All sub-vendor coordination	-	X					
	18	Spare Part List (Mandatory, Start-up & Commissioning and 2 Years Operation)	-	X					
	19	Compliance statement clearly indicating and following of all COMPANY HSE Standards and requirements specified in Company Specifications for Chlorine Gas Compressors Packages	-	X			Within Chlorine Compressors Battery Limit.		
	20	Erection of Unit(s)	-		X		Erection of unit(s) under CONTRACTOR scope with Supervision from VENDOR		
	21	Commissioning of Unit(s)	-		X		Commissioning of Unit(s) under CONTRACTOR scope with Supervision from VENDOR		
	22	Installation, Pre-commissioning and Commissioning	-		X		Installation, Pre-Commissioning and Commissioning of Unit(s) under CONTRACTOR scope with Supervision from VENDOR		
	23	Instrument Process Data Sheet (in required project format) for Instruments engineering by Supplier	-	X					
	24	Participation in Post Award Meetings –	-	X			Refer Note-5		
	24.1	(a)Participation in Kick Off Meeting	-						
0	24.2	b)Participation in 3D model (30%, 60%, 90%) review meeting	-						
	24.3	(d)Participation in HAZOP & SIL Study, other HSEIA studies as applicable	-						
	24.4	(e) Participation in Design Review Meetings / Progress Review Meetings etc. as necessary	-						

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102					 	
		ATTACHMENT 1 - SCOPE OF SUPPLY AND SERVICES						
COMPANY PROJECT No. :		1060-2501					DATE :	19-May-2026
CONTRACTOR PROJECT No.:		25002					REV. No.	0
PROJECT:		PROJECT SALT					VENDOR :	
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002					OFFER REF.:	
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)					OFFER DATE:	
Rev.	SNo.	ITEM DESCRIPTION	Qty.	By Vendor	By CONT.	Vendor Confirmation	Remarks	
	24.5	(f)Participation in Pre Inspection Meetings in presence of COMPANY/DEC/EPC/CONTRACTOR/TPIA	-					
0	25	INSPECTION AND TESTING AND MATERIAL TEST CERTIFICATION		X			Refer Note- 6. Also, refer compressor mechanical datasheet and other project specifications attached with MR.	
	25.1	Quality	-	X			Inspection, Quality Management System (QMS) / Quality Control (QC) activities.	
	25.2	Pre-inspection meetings	-	X			Pre-Inspection meeting at VENDOR’s office as applicable per Inspection Class	
	25.3	Statutory certification	-	X			Statutory approvals and certification (as applicable) from authorized agencies for all equipment, motors, instruments & accessories in the package	
	25.4	Major Shop inspection and testing	-	X			Conduct the FAT in shop	
	25.5	Stage wise inspection as per approved ITP	-	X			ITP for supply Items & Fabrication shall be submitted for EPC contractor's Review.	
	25.6	Mechanical Run Test of Compressor with main & spare rotor at compressor manufacturers works	-	X				
	25.7	Performance test of main rotor (as per ASME PTC-10 Type 2) at Compressor manufacturers works for one compressor unit	-	X				
	25.8	Mechanical run test of gear box including spare gear rotor set at gear box manufacturer's works	-	X				
	25.9	Functional test of assembled Lube oil unit at Manufacturer's shop	-	X				
	25.10	Shop Inspection and Testing for Main Drive Motor in accordance with Electrical specification attached with this Requisition	-	X				
	25.11	For Instrument items, testing shall be as per - Addendum to Specification for procurement inspection and Certification Requirements (1060-2501-ST000-QA-SPE-003)	-	X				
	25.12	Functional / simulation test of Control panel at control panel manufacturer's works	-	X				
	25.13	Shop Inspection and Testing for HV Main Drive Motor in accordance with Electrical specification attached with MR	-	X				
	25.14	For instrument items, testing shall be as per specifications	-	X				
	25.15	Hydro testing of all pressure parts at shop	-	X				
	25.16	Appointment of Third Party Inspection Agency	-	X				
	25.16.01	Other shop inspection and testing for all other items under vendor scope of supply.	-	X			Also, refer Inspection and Test Plans as per specifications	
	25.16.02	Performance test at site (Site Acceptance Test)	-	X			Site acceptance test (VENDOR Supervision)	
	25.16.03	Appointment of Third Party Inspection Agency (TPIA) for witness of shop inspection activity	-	X				
	25.17	IFAT		X				
	25.18	Factory Acceptance Test (FAT)		X				
	26	TRAINING TO CLIENT PERSONNEL					Refer Note 3	
	26.1	Training at site for operations and maintenance personnel of Client for 5 working days (per diem rate to be furnished)	-	X				
	26.2	Training for electrical items as per specification	-	X				
	26.3	Training for instrument items like Package PLC / MMS/Antisurge(as applicable)	-	X				
	27	SITE SUPERVISION DURING ERECTION, COMMISSIONING AND TESTING		X				
	27.1	Site Erection, commissioning, testing and trial run Supervision of Erection, Commissioning, Start-up and site testing (Per diem rate)	-	X			Refer Note 4	
	28	VENDOR DRAWINGS AND DOCUMENTS						
	28.1	All drawings, documents and data required as per data sheet, specifications, reference code & standards and Vendor document requirement list as specified in this Requisition. Refer Attachment - IV attached with this MR	-	X				
	28.2	Statutory approvals and certification (as applicable) from authorized agencies for all equipment, Motor, instruments & accessories in the package	-	X			All statutory certifications shall be provided	
	28.3	Additional items (including mechanical, electrical and instrumentation and controls) based on the recommendation of HAZOP /SIL study.	-	X				
	28.4	Additional items (including mechanical, electrical and instrumentation and controls) not specified in this Requisition but recommended by vendor for safe, reliable, smooth and efficient operation of complete compressor package (Vendor to include list of such items in his proposal)	-	X				
	29	Deleted	-					
	30	PTR or REFERENCE LIST AND CLIENT's FEEDBACK REPORT	-	X			To be provided along with technical proposal.Filled in Attachment-10 (Format for experience record performa) shall be provided alongwith bid.	
	31	Deleted						
	32	Bidder to propose a Delivery and Manufacturing schedule and submit the same along with their technical proposal. Bidder shall abide by this Delivery Schedule post-order.	-	X			To be provided along with technical proposal.	
	33	TRANSPORTATION & HANDLING	-				Transportation Limitation will be informed by CONTRACTOR to Supplier	
	33.1	Internal Protection and Preservation for Transportation	-	X				
	33.2	Export packing and Preparation for all items in VENDOR's scope suitable for seaworthy transport (taking into consideration of multiple handling) and outdoor storage for duration of minimum 18 months.	-	X				
	33.3	Temporary Blind Flanges with Nuts, Bolts, and Gaskets	-	X				
	33.4	Transportation from Supplier shop to site	-	X				
	33.5	Shipping & Transportation	-	X				
	34	CONSTRUCTION & SITE WORK	-					
	34.1	Residual Fabrication & Assembly at Site based on Chlorine gas compressor supplier shipping schedule	-		X			
	34.2	Instrument and Electrical installation work at site for loose supplied items	-		X			
	34.3	Interconnecting Piping erection at site	-		X		Support and guidance only	
	34.4	Inspection and Testing at Site	-		X		As applicable	
	34.5	Hydro testing at site	-		X		In presence of CONTRACTOR	

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102				
		ATTACHMENT 2 - APPLICABLE PROJECT SPECIFICATIONS, CODES & STANDARDS				
COMPANY PROJECT No. :		1060-2501		DATE:	19-May-26	
CONTRACTOR PROJECT No.:		25002		REV. No:	0	
PROJECT:		PROJECT SALT				
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002				
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSOR (API 617 COMPRESSORS)				
Equipment / material specified in this requisition shall be supplied in strict accordance with the following attachments and other documents referenced therein except where noted otherwise. Any conflicts shall be brought to the attention of the Purchaser for formal resolution.						
Rev	ITEM	DOCUMENT TITLE	DOCUMENT NUMBER	REV.	FORMAT	ISSUE DESCRIPTION
	A	MECHANICAL - ROTATING				
0	1	Mechanical Data Sheet for Chlorine Compression Unit (CA221-KC-050) / (221U050)	1060-2501-CA221-MR-DST-001	0	PDF	IFD
0	2	Mechanical Data Sheet for Chlorine Compression Unit (CA222-KC-050) / (221U050)	1060-2501-CA222-MR-DST-001	0	PDF	IFD
	3	Scope of Supply & Services for Chlorine Compression unit	Attachment - 1	-	PDF	-
	4	Exceptions, Deviations, Clarifications Form	Attachment - 3	-	PDF	-
	5	Vendor Document Requirement List	Attachment - 4	-	PDF	-
	6	Utility Consumption and Electrical Load List Format	Attachment - 5	-	PDF	-
	7	Supplier Quality Requirement Form (SQRF)	Attachment - 6	-	PDF	-
	8	Technical Offer Completeness checklist for Chlorine Compression Unit	Attachment - 7	-	PDF	-
	9	Technical Query Format	Attachment - 8	-	PDF	-
	10	SPIR Format	Attachment - 9	-	PDF	-
	11	Format for Experience Record Proforma for Chlorine Compression Unit	Attachment - 10	-	PDF	-
	12	Lubrication Schedule - Format	Attachment - 11	-	PDF	-
	13	Power Loading and Penalty Criteria	Attachment - 12	-	PDF	-
0	14	Electrical Block Diagram	Attachment - 13	-	PDF	-
0	15	Instrumentation and Control Architecture and Block Diagram	Attachment - 14	-	PDF	-
0	15	Addendum to (1060-MR-SPE-004) Specification For Axial & Centrifugal Compressor and Expander-Compressor (Amendments / Supplements to API-617, 8th Ed.)	1060-2501-ST000-MR-SPE-004	1	PDF	IFD
	16	Addendum to (1060-MR-DEG-001) Guideline for Rotating Equipment Selection	1060-2501-ST000-MR-DEG-001	0	PDF	IFD
	17	Addendum to (1060-MR-DEG-002) Guidelines for Online Condition Monitoring of Rotating Equipment	1060-2501-ST000-MR-DEG-002	0	PDF	IFD
	18	Addendum to (1060-MR-SPE-009) Specification for Lubrication, Shaft Sealing & Oil-Control Systems and Auxiliaries (AMENDMENTS / SUPPLEMENTS TO API-614, 5TH ED.)	1060-2501-ST000-MR-SPE-009	0	PDF	IFD
	19	Addendum to (1060-ME-SPE-018) Specification for Positive Displacement pump (Rotary)(AMENDMENTS / SUPPLEMENTS TO API-676, 3RD ED.)	1060-2501-ST000-MR-SPE-0018	0	PDF	IFD
	20	Addendum to (1060-MR-SPE-020) Specification for Packaged Equipment	1060-2501-ST000-MR-SPE-011	0	PDF	IFD
	21	Addendum to (1060-MR-SPE-003) Specification for Shaft Sealing Sealing System for Centrifugal and Rotary Pump (AMENDMENT / SUPPLEMENT TO API-682, 4TH ED.)	1060-2501-ST000-MR-SPE-003	0	PDF	IFD
	22	Addendum to (1060-MR-SPE-010) Specification for Special Purpose Gearbox (AMENDMENTS / SUPPLEMENTS TO API-613, 5TH ED.)	1060-2501-ST000-MR-SPE-010	0	PDF	IFD
	23	Spare Parts ordering guideline	1060-PR-GDL-002	1	PDF	IFU
	B	PROCESS				
	1	Process Design Basis - CA Plant	1060-2501-CA000-PS-BOD-001	0	PDF	IFD
	2	Addendum to (1060-EM-BOD-001) Basic Engineering Design Data	1060-2501-ST000-EM-BOD-001	0	PDF	IFD
	3	Addendum to (1060-PS-DEG-001) Process Design Criteria	1060-2501-ST000-PS-DEG-001	0	PDF	IFD
	4	Addendum to (1060-PS-PHL-003) Overpressure Protection Philosophy	1060-2501-ST000-PS-PHL-003	0	PDF	IFD
	5	Addendum to (1060-PS-PHL-001) Isolation, Vent & Drain Philosophy	1060-2501-ST000-PS-PHL-001	0	PDF	IFD
	6	Addendum to (1060-PS-PHL-002) Flare and Blowdown Philosophy	1060-2501-ST000-PS-PHL-002	0	PDF	IFD
	7	Sparing Philosophy	1060-2501-ST000-PS-PHL-004	A	PDF	IFR
	8	Addendum to (1060-PS-DEG-005) P&ID and PFD Development Guideline	1060-2501-ST000-PS-DEG-005	0	PDF	IFR
0	9	Legend Symbols, Abbreviations and General Notes	1060-2501-ST000-PS-PID-001	B	PDF	IFH
0	10	P&ID - Chlorine compression Unit - Train 1	1060-2501-CA221-PS-PID-001	B	PDF	IFH
0	11	P&ID - Chlorine Compression Unit - Train 2	1060-2501-CA222-PS-PID-001	A	PDF	IFH
0	12	Process Flow Diagram Chlorine Compression	1060-2501-CA221-PS-PFD-001	B	PDF	IFA
	C	STATIC				

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102				
		ATTACHMENT 2 - APPLICABLE PROJECT SPECIFICATIONS, CODES & STANDARDS				
COMPANY PROJECT No. :		1060-2501		DATE:		19-May-26
CONTRACTOR PROJECT No.:		25002		REV. No:		0
PROJECT:		PROJECT SALT				
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002				
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSOR (API 617 COMPRESSORS)				
Equipment / material specified in this requisition shall be supplied in strict accordance with the following attachments and other documents referenced therein except where noted otherwise. Any conflicts shall be brought to the attention of the Purchaser for formal resolution.						
Rev	ITEM	DOCUMENT TITLE	DOCUMENT NUMBER	REV.	FORMAT	ISSUE DESCRIPTION
	1	Mechanical Static Design Basis	1060-2501-ST000-EM-BOD-001	0	PDF	IFD
	2	Addendum (1060-MS-SPE-002) to Specification for Unfired Pressure Vessel	1060-2501-ST000-MS-SPE-002	0	PDF	IFD
	3	Addendum (1060-MS-SPE-003) Specification for Design and Fabrication of Shell & Tube Heat Exchanger	1060-2501-ST000-MS-SPE-003	0	PDF	IFU
	4	Addendum to (1060-MS-SPE-010) Specification for Tube to Tubesheet Joint Requirements (Expanded and/or Welded) For Suppliers	1060-2501-ST000-MS-SPE-010	0	PDF	IFU
	5	Addendum to (1060-MS-SPE-009) Standard Nozzle Loads	1060-2501-ST000-MS-STD-009	0	PDF	IFU
0	6	Standard Drawings For Static Equipment	1060-2501-ST000-MS-STD-001	0	PDF	IFU
	7	Addendum to (1060-MC-SPE-007) Specification for Painting & Coating	1060-2501-ST000-MC-SPE-007	0	PDF	IFD
	8	Addendum to (1060-MC-DEG-001) Material Selection Guideline	1060-2501-ST000-MC-DEG-001	0	PDF	IFD
	9	Addendum to (1060-MC-SPE-012) Requirements for Materials in Severe Service	1060-2501-ST000-MC-SPE-012	0	PDF	IFD
	D	ELECTRICAL				
0	1	Addendum to (1060-EL-BOD-001) Electrical Design Basis	1060-2501-ST000-EL-BOD-001	0	PDF	IFU
	2	Addendum to (1060-EL-SPE-009) Specification for Mv and LV Induction Motor	1060-2501-ST000-EL-SPE-009	0	PDF	IFU
	3	Addendum to (1060-EL-SPE-011) Specification for MV and LV power, control and earthing cable	1060-2501-ST000-EL-SPE-011	0	PDF	IFU
	4	Addendum to (1060-EL-SPE-019) Specification for Electrical Items on Packaged Equipment	1060-2501-ST000-EL-SPE-018	0	PDF	IFU
	5	Addendum to (1060-EL-SPE-021) Specification of Electrical Heat Tracing	1060-2501-ST000-EL-SPE-020	0	PDF	IFU
	6	Addendum to (1060-EL-SPE-020) Specification for Electrical Control and Monitoring System	1060-2501-ST000-EL-SPE-019	0	PDF	IFU
	7	Addendum to (1060-EL-SPE-023) Specification for Electrical Bulk Materials	1060-2501-ST000-EL-SPE-022	0	PDF	IFU
	8	Addendum to (1060-EL-SPE-024) Specification for Field Commissioning of Electrical Installation and Equipment	1060-2501-ST000-EL-SPE-023	0	PDF	IFU
	9	Addendum to (1060-EL-SPE-022) Specification for Electric Heaters	1060-2501-ST000-EL-SPE-021	0	PDF	IFU
	9	INSTRUMENTATION				
	1	Addendum to (1060-IC-BOD-001) Instrumentation Design Basis	1060-2501-ST000-IC-BOD-001	0	PDF	IFU
	2	Addendum to (1060-IC-SPE-006) Specification for Instrumentation packaged system	1060-2501-ST000-IC-SPE-006	0	PDF	IFU
	3	Addendum to (1060-IC-SPE-001) Specification for Process Control System	1060-2501-ST000-IC-SPE-001	0	PDF	IFU
	4	Addendum to (1060-IC-SPE-002) Specification for Emergency Shutdown System	1060-2501-ST000-IC-SPE-002	0	PDF	IFU
	5	Addendum to (1060-IC-SPE-003) Specification for Fire & Gas System	1060-2501-ST000-IC-SPE-003	0	PDF	IFU
	6	Addendum to (1060-IC-SPE-004) Specification for programmable logic controller (PLC)	1060-2501-ST000-IC-SPE-004	0	PDF	IFU
	7	Addendum to (1060-IC-SPE-013) Specification for control valves	1060-2501-ST000-IC-SPE-013	0	PDF	IFU
	8	Addendum to (1060-IC-SPE-014) Specification For On/Off Valves (ESD / EDP/ Isolation / MOV)	1060-2501-ST000-IC-SPE-014	0	PDF	IFU
	9	Addendum to (1060-IC-SPE-005) Specification For Machinery Instrument System	1060-2501-ST000-IC-SPE-005	0	PDF	IFU
	10	Addendum to (1060-IC-SPE-025) Specification for Instrument and Thermocouple Cable	1060-2501-ST000-IC-SPE-025	0	PDF	IFU
	11	Addendum to (1060-IC-SPE-022) Specification For Fire & Gas Detectors and Related Devices	1060-2501-ST000-IC-SPE-022	0	PDF	IFU
	12	Addendum to (1060-IC-SPE-021) Specification for Instrument Installation	1060-2501-ST000-IC-SPE-021	0	PDF	IFU
	13	Addendum to (1060-IC-PRO-001) to Smart Plant Implementation Procedure	1060-2501-ST000-IC-PRO-001	A	PDF	IFR
0	14	Addendum to (1060-IC-PHL-001) Integrated Control and Safety System (ICSS) Philosophy	1060-2501-ST000-IC-PHL-001	0	PDF	IFU
	15	Addendum to (1060-IC-SPE-015) Specification for Safety Relief devices	1060-2501-ST000-IC-SPE-015	0	PDF	IFU
	16	Instrumentation Spare Philosophy	1060-2501-ST000-IC-PHL-005	A	PDF	IFR
	17	Addendum to (1060-IC-SPE-009) Specification for Alarm Management System	1060-2501-ST000-IC-SPE-009	0	PDF	IFU
	18	Addendum to (1060-IC-SPE-007) Specification for Asset Management System	1060-2501-ST000-IC-SPE-007	0	PDF	IFU
	19	Addendum to (1060-IC-SPE-010) Specification for Operational Cyber Security	1060-2501-ST000-IC-SPE-010	0	PDF	IFU
	F	PIPING				
	1	Addendum to (1060-PG-BOD-001) Piping Design Basis	1060-2501-ST000-PG-BOD-001	B	PDF	IFA
	2	Piping material Specification	1060-2501-ST000-PG-SPE-002	B	PDF	IFA
0	3	Addendum to (1060-PG-SPE-008) Specification for Insulation	1060-2501-ST000-PG-SPE-004	0	PDF	IFU
	4	Addendum to (1060-PG-SPE-013) Specification for Bolt Torquing / Tensioning for Flanged Connections	1060-2501-ST000-PG-SPE-005	A	PDF	IFR
0	5	Addendum to (1060-PG-SP-004) Specification for Piping Flexibility Analysis	1060-2501-ST000-PG-SPE-006	0	PDF	IFU
0	6	Addendum to (1060-PG-SPE-012) Specification for Metallic Expansion Joints	1060-2501-ST000-PG-SPE-008	0	PDF	IFU
	7	Addendum to (1060-PG-SPE-006) Specification for Pipe Support	1060-2501-ST000-PG-SPE-010	A	PDF	IFR
0	8	Specification for Brackets and Reinforcing Plates on Equipment and Tanks	1060-2501-ST000-PG-SPE-011	C	PDF	IFA

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102				
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COMPANY PROJECT No. :		1060-2501		DATE:	19-May-26	
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Rev	ITEM	DOCUMENT TITLE	DOCUMENT NUMBER	REV.	FORMAT	ISSUE DESCRIPTION
0	9	Specification for Variable and Constant Spring Supports	1060-2501-ST000-PG-SPE-012	0	PDF	IFU
0	10	Specification for Execution of Special Supports	1060-2501-ST000-PG-SPE-013	B	PDF	IFA
0	11	Addendum to (1060-PG-SPE-009) Specification for Piping Tie-Ins and Hot Tappings	1060-2501-ST000-PG-SPE-021	B	PDF	IFA
0	12	Addendum to (1060-PG-SPE-003) Specification for Manual Piping and Pipeline Valves	1060-2501-ST000-PG-SPE-022	0	PDF	IFU
0	14	Addendum to (1060-PG-SPE-027) Specification for Metallic Pipe, Fittings and Flanges	1060-2501-ST000-PG-SPE-023	0	PDF	IFU
0	15	Addendum to (1060-PG-SPE-005) Specification For Gaskets and Fasteners	1060-2501-ST000-PG-SPE-024	0	PDF	IFU
0	16	Addendum to (1060-PG-SPE-021) Specification for High Density Polyethylene (HDPE) for Pipeline and Piping systems	1060-2501-ST000-PG-SPE-025	0	PDF	IFU
0	17	Addendum to (1060-PG-SPE-023) Specification for Pressure Testing of Process and Utility Piping	1060-2501-ST000-PG-SPE-026	B	PDF	IFA
0	18	Addendum to (1060-PG-SPE-026) Specification for Interlocking System	1060-2501-ST000-PG-SPE-027	B	PDF	IFA
	19	Overall Plot Plan	1060-2501-CA000-PG-DPP-001	B	PDF	IFA
	G	CIVIL				
0	1	Addendum to (1060-CS-BOD-001) Structural Engineering Design Basis	1060-2501-ST000-CS-BOD-001	B	PDF	IFA
	2	Addendum to (1060-CS-SPE-007) Specification for Anchor Bolt & Grouting	1060-2501-ST000-CS-SPE-016	0	PDF	IFU
	3	Addendum to (1060-CS-SPE-010) Specification for Structural Steel Supply, Fabrication & Erection	1060-2501-ST000-CS-SPE-018	0	PDF	IFU
0	4	Steel Works General Notes, Abbreviations & Symbols	1060-2501-ST000-CS-DRG-032	C	PDF	IFA
0	5	Standard Stair & Typical Details	1060-2501-ST000-CS-DRG-034	0	PDF	IFC
0	6	Standard Ladder & Cage Typical Details	1060-2501-ST000-CS-DRG-035	0	PDF	IFC
0	7	Standard Grating Typical Details	1060-2501-ST000-CS-DRG-043	0	PDF	IFC
0	8	Standard Anchor Bolt Details	1060-2501-ST000-CS-DRG-004	0	PDF	IFC
	9	Concrete Works General Notes	1060-2501-ST000-CS-DRG-001	0	PDF	IFC
0	10	Standard Handrail Typical Details	1060-2501-ST000-CS-DRG-042	0	PDF	IFC
	H	HSE				
	1	Addendum to (1060-HS-PHL-002) HSE PHILOSOPHY	1060-2501-ST000-HS-PHL-002	0	PDF	IFU
	2	Hazard and operability study (HAZOP)	HSE-RM-ST04	1	PDF	August 2019
	3	Safety Integrity Levels (SIL)	HSE-RM-ST05	1	PDF	August 2019
	4	Pollution Prevention and Control Standard	HSE-EN-ST02	1	PDF	January 2020
	5	Addendum to (1060-HS-SPE-004) Specification for Human Factors	1060-2501-ST000-HS-SPE-004	A	PDF	IFR
	6	Addendum to (1060-HS-DEG-002) Layout Spacing & Equipment Distance Guidelines	1060-2501-ST000-HS-DEG-002	B	PDF	IFA
	I	QA/QC				
	1	Addendum to (1060-QA-SPE-001) Specification for QA/QC Requirements	1060-2501-ST000-QA-SPE-001	0	PDF	IFU
	2	Addendum to (1060-QA-SPE-002) Specification for Criticality Rating	1060-2501-ST000-QA-SPE-002	0	PDF	IFU
	3	Addendum to (1060-QA-SPE-003) Specification for procurement inspection and Certification Requirements	1060-2501-ST000-QA-SPE-003	0	PDF	IFU
	4	Addendum to (1060-QA-SPE-005) Specification For Welding and Non-Destructive Examination	1060-2501-ST000-QA-SPE-005	0	PDF	IFU
	5	Addendum to (1060-QA-SPE-006) Specification For Preservation and Export Packing	1060-2501-ST000-QA-SPE-006	0	PDF	IFU
	6	Addendum to (1060-QA-SPE-004) Specification for Traceability of Shop and Field Piping Material	1060-2501-ST000-QA-SPE-004	0	PDF	IFU
	7	Addendum to (1060-QA-SPE-007) Specification for Metallic materials - Prevention of brittle fracture	1060-2501-ST000-QA-SPE-007	0	PDF	IFU
	8	Addendum to (1060-QA-GDL-001) Guideline for Positive Material Identification (PMI) of Equipment and Piping	1060-2501-ST000-QA-GDL-001	0	PDF	IFU
	J	MISCELLANEOUS				
	1	Addendum to (1060-EM-GDL-004) 3D Model Review Procedure	1060-2501-ST000-EM-GDL-004	A	PDF	IFR
0	2	Addendum to (1060-PM-PRO-002) Document Numbering Procedure	1060-2501-ST000-PM-PRO-002	B	PDF	IFA
	3	Addendum to (1060-EM-PRO-004) Tagging and Line Numbering Procedure	1060-2501-ST000-EM-PRO-004	B	PDF	IFR
	4	COMPANY Approved Vendor list	-	-	.xlsx	16-Dec-25

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102				
		ATTACHMENT 2 - APPLICABLE PROJECT SPECIFICATIONS, CODES & STANDARDS				
COMPANY PROJECT No. :		1060-2501		DATE:	19-May-26	
CONTRACTOR PROJECT No.:		25002		REV. No:	0	
PROJECT:		PROJECT SALT				
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002				
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSOR (API 617 COMPRESSORS)				
Equipment / material specified in this requisition shall be supplied in strict accordance with the following attachments and other documents referenced therein except where noted otherwise. Any conflicts shall be brought to the attention of the Purchaser for formal resolution.						
Rev	ITEM	DOCUMENT TITLE	DOCUMENT NUMBER	REV.	FORMAT	ISSUE DESCRIPTION
0	K	APPLICABLE CODES & STANDARDS				
0	1	Centrifugal Compressors for Petroleum, Chemical, and Gas Industry Services	API 617	-	-	8th Edition
0	2	Lubrication, Shaft-Sealing, and Control-Oil system for Special Purpose Applications	API 614	-	-	5th Edition
0	3	Special Purpose Gear Units for Petroleum, Chemical, and Gas Industry Services	API 613	-	-	5th Edition
0	4	Machinery Protection Systems	API 670	-	-	5th Edition
0	5	Special Purpose Couplings for Refinery Service	API 671	-	-	4th Edition
0	6	Positive Displacement Pumps - Rotary	API 676	-	-	3rd Edition
0	7	Pipe Flanges and Flanged Fittings NPS ½ Through NPS 24 Metric/Inch Standard	ASME B16.5	-	-	-
0	8	Large Diameter Steel Flanges NPS 26 Through NPS 50 Metric/Inch Standard	ASME B16.47	-	-	-
0	9	Process Piping	ASME B31.3	-	-	-
0	10	Rules for Construction for Pressure vessels	ASME-Section VIII, Div.1	-	-	-
0	11	Standards of the tubular heat exchanger manufacturers association	TEMA, CLASS C & R	-	-	-
0	12	Power test Codes for Compressors and Exhausters	ASME-PTC 10	-	-	-
0	13	Turbocompressors - Performance test Code	ISO 5389	-	-	-
0	14	Mechanical vibration -Evaluation of machine vibration by measurement on rotating parts	ISO 7919	-	-	-
0	15	Mechanical vibration-Evaluation of machine vibration by measurement on non-	ISO 10816 - 1/3	-	-	-
0	16	Measurement of fluid flow by means of pressure differential devices	DIN EN ISO 5167-1	-	-	-
0	17	Measurement airborne noise emitted by machines, requirements for 3 accuracy classes	DIN 45635	-	-	-
0	18	American National Standard Acoustics – Determination of sound power levels of noise sources – Guidelines for the use of basic standards	ANSI / ASA S.12.50	-	-	-
0	19	Acoustics - Determination Of Sound Power Levels Using Sound Pressure	ISO 3744	-	-	-
0	20	Acoustics - Determination Of Sound Power Levels Using Sound Intensity	ISO 9614	-	-	-
0	21	Acceptance and Performance Tests on Turbo and Displacement Compressors	VDI 2045	-	-	-
0	22	Mechanical vibration — Rotor balancing	ISO 21940-11	-	-	-

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102					
		ATTACHMENT 3 - EXCEPTIONS, DEVIATIONS AND CLARIFICATIONS FORM					
COMPANY PROJECT No. :		1060-2501				DATE:	19-May-26
CONTRACTOR PROJECT No.:		25002				REV. No:	0
PROJECT:		PROJECT SALT					
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002					
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)					
VENDOR to fill the form with any exception/deviation/clarification to the Material Requisition and applicable documents and submit to CONTRACTOR in native along with VENDOR's proposal.							
ITEM TYPE	CONTRACTOR RESPONSE		COMPANY APPROVAL		STATUS		
Exception	CONTRACTOR to input one of the following reason and add an explanation, if necessary		COMPANY to input one of the following reason and add an explanation, if necessary		OPEN		
Deviation	A - ACCEPTED		A – COMPANY agrees and accepts CONTRACTOR Response		CLOSED		
Clarification	B - ACCEPTED WITH COMMENTS		B – COMPANY agrees and accepts CONTRACTOR Response with comments				
	R - REJECTED		R - REJECTED				
ITEM	ITEM TYPE	Clause / Para No.	DOCUMENT REQUIREMENT	EXCEPTION / DEVIATION DESCRIPTION	CONTRACTOR RESPONSE	COMPANY APPROVAL	STATUS
1							
2							
3							
4							
5							

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102			 				
		ATTACHMENT 4 - VENDOR DOCUMENT REQUIREMENT LIST							
COMPANY PROJECT No. :		1060-2501			DATE:	19-May-26			
CONTRACTOR PROJECT No.:		25002			REV.No.:	0			
PROJECT:		PROJECT SALT							
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002							
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)							
ITEM No.	DOCUMENT TITLE	NOTES	With Bid	Post Order			Final Docs	IOM	MRB
				No. of weeks	Category	Key Doc.	Required		
			1	2	3	4	5	6	7
A - CONTROL DOCUMENT									
1	VENDOR DOCUMENT LIST (VDL)		Y	2	A		Y		
2	EXCEPTIONS TO CODES AND SPECIFICATIONS		Y						
3	CUSTOMER REFERENCE LIST		Y						
4	SUB-VENDORS LIST / SUB-CONTRACTORS LIST		Y	4	A				
5	SUB-ORDER SCHEDULE / COPIES			6	I				
6	CERTIFICATE OF ORIGIN			D	I				
7	VENDOR'S OVERALL SCHEDULE (ENGINEERING, PROCUREMENT & FABRICATION / PRODUCTION / DELIVERY)		Y	2	I				
8	MONTHLY PROGRESS REPORT				I				
9	VENDOR PROFILE/CATALOGUE OF PRODUCT		Y						
10	VENDOR'S PROJECT ORGANIZATION CHART		Y						
11	SAFETY POLICY RECORDS (HSE)		Y						
12	PROJECT EXECUTION PLAN			2	I				
13	VENDOR CONCESSION REQUEST								
14	SITE ERECTION SCHEDULE		Y	14					
15	TECHNICAL OFFER COMPLETENESS CHECKLIST AS PER ATTACHMENT-7 (SIGNED AND STAMPED)		Y						
16	ALL ATTACHMENTS OF 1060-2501-CA220-MR-MRQ-002 - MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS) (SIGNED AND STAMPED)		Y						
17	INSPECTION AND TEST PLANS (SIGNED AND STAMPED)		Y						
	MISCELLANEOUS	NOTE 3							
B - GENERAL ARRANGEMENTS/ DRAWINGS									
1	GENERAL ARRANGEMENTS DRAWINGS INDICATING ELEVATION, LAYOUT WITH NOT TO EXCEED DIMENSIONS, TIE IN LOCATIONS		Y	6	A	Y	Y	Y	
2	DETAIL / FABRICATION / EXPLODED VIEW CROSS SECTIONAL DRAWINGS INCLUDING PART LIST		Y	6	A		Y	Y	
3	MOTOR & GENERATOR GA DRAWINGS, TERMINAL BOX DETAILS			6	A	Y	Y		
4	PANEL, CABINET, SWITCH BOARD LAYOUTS (For package)			10	A		Y		
5	ELECTRICAL LAYOUTS			10	A		Y		
6	INSTRUMENT LAYOUTS			10	A		Y		
7	PLOT PLANS FOR PACKAGES (WITH LOCATING DIMENSIONS FOR ALL EQUIPMENT / SKID)		Y	4	A	Y	Y	Y	
8	EQUIPMENT SKID PIPING			8	I		Y		
9	ISOMETRIC DRAWINGS			8	I		Y		
10	NAME PLATE DRAWINGS			18	A		Y		Y
11	INSULATION/LINING/FIREPROOFING /REFRACTORY DETAILS			18	A		Y		Y
12	LIFTING BEAM / FRAME / SLING DRAWINGS / LIFTING ARRANGEMENT DRAWINGS (FOR SHIPPING AND ERECTION)			8	A		Y		Y
13	CIVIL/STRUCTURAL ARRANGEMENT DRAWINGS (INCLUSIVE OF MATCH MARKING DETAILS FOR IDENTIFICATION OF PARTS AND ASSEMBLY)			8	A		Y		
14	3D-MODEL OF PACKAGE / EQUIPMENT (S3D VERSION 14 UPDATE 5)			8	A		Y		
15	PROCESS/ PNEUMATIC/HYDRAULIC SCHEMATIC & HOOKUP DRAWINGS			8	A		Y	Y	
16	CONTROL SYSTEM ARCHITECTURE DRAWING			4	A		Y		
17	I/O POINT ASSIGNMENT DRAWING			4	A		Y	Y	
18	SPECIAL INSTRUMENT INSTALLATION DRAWING			8	A		Y	Y	
19	INSTRUMENT EARTHING/GROUNDING DRAWING			8	A		Y	Y	
20	POWER DISTRIBUTION DRAWINGS			8	A				
21	DETAIL DRAWINGS FOR STRUCTURAL STEEL, LADDERS AND PLATFORMS, STAIRCASE			6	A		Y		
22	FOUNDATION LOAD DATA GA			6		Y		Y	
23	ASSEMBLY DRAWING OF COMPRESSOR PACKAGE			6	A		Y		
	MISCELLANEOUS	Note 3							
C - SYSTEM DIAGRAMS & SCHEMATICS									
1	PROCESS DESCRIPTION			8	A		Y		
2	PF/D/UFD AND HEAT MASS BALANCE			8	A	Y	Y		
3	PIPING & INSTRUMENTATION DIAGRAM (P&ID)		Y	4	A	Y	Y	Y	
4	CONTROL & SAFETY NARRATIVE (INCLUDING ANTI-SURGE WRITE UP)			4	A	Y	Y	Y	
5	OPERATING AND CONTROL PHILOSOPHY, BLOCK DIAGRAM			12	A	Y	Y	Y	
6	TERMINATION DRAWING			8	A		Y	Y	
7	ELECTRICAL SINGLE LINE DIAGRAM			8	A		Y	Y	
8	INSTRUMENT LOGIC DIAGRAM, CAUSE & EFFECT DIAGRAM			8	A	Y	Y	Y	
9	ELECTRICAL LOGIC,SCHEMATICS AND WIRING DIAGRAM			8	A		Y	Y	
10	CABLE BLOCK / INTERCONNECTION DIAGRAMS			8	A		Y	Y	
11	LOOP DRAWINGS/ DIAGRAMS			8	A		Y	Y	
12	VISUAL DISPLAY UNIT (VDU) GRAPHICS			8	A		Y	Y	
13	INTERNAL WIRING DIAGRAM (CONNECTION DIAGRAMS)			8	A		Y	Y	
14	FUNCTIONAL LOGIC DIAGRAM			12	A		Y		
15	CONTROL SCHEME/ DIAGRAM			12	A		Y		
16	MOTOR CONTROL PHILISOPHY			12	A		Y		
	MISCELLANEOUS	Note 3							
D - DATA SHEETS/ SPECIFICATIONS									
1	EQUIPMENT DATA SHEETS (INCLUDING RELIABILITY DATA)		Y	4	A	Y	Y		Y

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CONTRACTOR PROJECT No.:		25002		REV.No.:	0				
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MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002							
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)							
ITEM No.	DOCUMENT TITLE	NOTES	With Bid	Post Order			Final Docs	IOM	MRB
				No. of weeks	Category	Key Doc.	Required		
			1	2	3	4	5	6	7
2	VALVE DATA SHEETS			6	A		Y		
3	INSTRUMENT DATA SHEETS			6	A		Y		
4	MOTOR DATA SHEETS		Y	4	A	Y	Y		
5	ELECTRICAL EQUIPMENT DATA SHEETS (FOR PACKAGE)			4	A		Y		
6	SAFETY (COSHH) DATA SHEETS (MSDS)								
7	MATERIAL DATA SHEETS FOR EXTERNAL/INTERNAL COATING MATERIAL								
8	CABLE TECHNICAL DATASHEETS (ELECTRICAL/INSTRUMENT/TELECOM)			12	A		Y		
9	FUNCTIONAL DESIGN SPECIFICATION			8	A		Y		
10	AUXILIARY DATASHEETS (DRY GAS SEAL & SEAL SYSTEM,GEAR-BOX, COUPLING, SEPARATOR, LUBE OIL SYSTEM, INTERCOOLERS,AFTERCOOLER, STAGE -KNOCKOUT DRUMS ETC.)			8	A	Y	Y		
	MISCELLANEOUS	Note 3							
E - SCHEDULES/ LISTING									
1	EQUIPMENT LIST (MULTI-DISCIPLINE)		Y	4	A		Y	Y	
2	ELECTRICAL LOAD LIST(IN CC7 FORMAT)			8	A		Y	Y	
3	UTILITIES SCHEDULE (POWER, AIR, WATER, LUBE OIL, Others)		Y	4	A	Y	Y	Y	
4	LUBRICATION/CHEMICAL/CATALYST SCHEDULE (FLUSHING, LUBE OIL, GREASE, OPERATING FLUID)			16	A		Y	Y	
5	INPUT/OUTPUT LIST, ALARM AND TRIP SCHEDULE			4	A	Y	Y		
6	INSTRUMENT SCHEDULE/ INDEX		Y	4	A	Y	Y		
7	PIPING LINE LIST (INCLUDING CRITICAL LINES IDENTIFICATION)			12	A		Y		
8	BILL OF MATERIALS (INCLUDING SPECIAL ITEMS LIST)			16	I		Y		
9	ELECTRIC HEAT TRACING CIRCUIT SCHEDULE			12	A		Y		
10	CABLE SCHEDULE			8	A		Y		
11	SCHEDULE OF PSVs			8	A		Y		
12	CERTIFIED EQUIPMENT LIST FOR HAZARDOUS AREA			8	A		Y		
13	BILL OF QUANTITY FOR BULK MATERIAL TO BE SUPPLIED			12	A		Y		
	MISCELLANEOUS	Note 3							
F - CALCULATIONS & ANALYSIS									
1	PROCESS / UTILITY CALCULATIONS			8	A		Y		
2	MECHANICAL CALCULATION / ANALYSIS / STUDIES		Y	8	A	Y	Y		
3	STRUCTURAL STEEL DESIGN CALCULATIONS			8	A	Y	Y		
4	FINITE ELEMENT ANALYSIS / CALCUATION (incl. Fatigue analysis)								
5	NOZZLE LOADS AND MOMENTS			6	A	Y	Y		
6	EXTERNALLY APPLIED LOADINGS CALCULATIONS			6	A	Y	Y		
7	HEAT / POWER / SYSTEM LOADING CALCULATIONS								
8	HYDRAULIC CALCULATIONS/ ANALYSIS / THERMOSYPHON LOOP CALCULATION			6	A		Y		
9	THERMAL DESIGN CALCULATIONS, THERMAL EFFICIENCY			8	A		Y		
10	DESIGN CALCULATIONS, SIZING CALCULATIONS FOR VARIOUS EQUIPMENT, APPLICATION CHECKS FOR THE ELECTRICAL MOTORS AS REQUIRED			12	A		Y		
11	INSTRUMENT SIZING CALCULATIONS (ORIFICE, CONTROL VALVE,PSV,ACTUATORS ETC.)			10	A		Y		
12	DYNAMIC ANALYSIS			8	A				
13	STABILITY ANALYSIS			8	A				
14	ANTI-SURGE VALVE SIZING			12	A		Y		
15	ACOUSTIC ENCLOSURE VENTILATION SYSTEM CALCULATIONS			12	A				
16	PIPING STRESS ANALYSIS/ CALCULATIONS (INCLUDING CAESAR-II NATIVE FILES)			12	A		Y		
17	DESIGN CALCULATIONS, SIZING CALCULATIONS FOR VARIOUS EQUIPMENT, APPLICATION CHECKS			24	A		Y		
18	OVERALL UNCERTAINTY CALCULATIONS								
19	SCAN TIME / DATA TRANSFER TIME CALCULATIONS								
20	FAST LOOP FLOW								
21	DEWPOINT & BUBBLE POINT CALCULATION								
22	ACTUATOR TORQUE TABLE								
23	VERIFICATION OF PRESSURE RATING OF TUBE								
24	STRAINER AREA CALCULATION								
25	NON SLAM CHECK VALVE FLOW AND PRESSUE DROP CALCULATION								
26	WEIGHT (EMPTY / ERECTION)		Y	6	A		Y		
27	FOUNDATION LOAD CALCULATIONS		Y	6	A		Y		
28	WIND LOAD CALCULATIONS		Y	6	A		Y		
29	CALIBRATION CURVES CALLIBRATION PROCEDURE			12	A		Y		
30	PHASE MAP ANALYSIS			12	A		Y		
31	VENT STUUDY			12	A		Y		
	MISCELLANEOUS (Creep, WRC analysis for Pads etc...)	NOTE 3							
G - PERFORMANCE DATA									
1	DATA REQUIRED FOR MOTOR STARTING STUDY								
2	PERFORMANCE CURVES			6	A		Y	Y	
3	ELECTRICAL EQUIPMENT/MOTOR/GERNERATOR PERFORMANCE CURVES along with Torque speed curves, Current vs time curve, Thermal withstand curve			6	A		Y	Y	
4	COMPUTER SYSTEM DOCUMENTATION/ MANUAL								
5	SIL RELATED DATA			6	A		Y		
6	PERFORMANCE TEST PROCEDURE			6	A	Y	Y		
H - WELDING/MATERIAL ENGINEERING DATA / MANUFACTURING & TEST PROCEDURES									

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			1	2	3	4	5	6	7
1	WELD MAP FOR NDE PLAN			12	A	Y	Y		Y
2	WELD BOOK (WPS-PQR REGISTER + WELD MAP + WPS & SUPPORTING PQR)			12	A	Y	Y		Y
3	NON-DESTRUCTIVE EXAMINATIONS PROCEDURES (NDE) INCLUDING VT, PT, MT, ET, RT, UT MANUAL & MECHANISED			12	A		Y		Y
4	HARDNESS TEST PROCEDURE			12	A		Y		Y
5	CHARPY IMPACT TEST PROCEDURE / DWTT TEST PROCEDURE (IF APPLICABLE)			12	A		Y		Y
6	SURFACE PREPARATION & PAINTING /COATING/ GALVANIZING/FBE/ INSULATION PROCEDURE/REFRACTORY LINNING			12	A		Y		Y
7	HYDROSTATIC AND/OR PNEUMATIC TEST PROCEDURES			12	A		Y		Y
8	CORROSION TESTING PROCEDURES								
9	POSITIVE MATERIAL IDENTIFICATION (PMI) PROCEDURE			12	A		Y		Y
10	FLUSHING AND DRY OUT PROCEDURE (DRAINING & DRYING)			12	A		Y		Y
11	TRIAL ASSEMBLY PROCEDURE (FOR INTERNALS)			12	A		Y		Y
12	FACTORY ACCEPTANCE AND PERFORMANCE TEST PROCEDURE			12	A		Y		Y
13	WEIGHT CONTROL/ WEIGHING PROCEDURE								
14	HOLIDAY TESTING PROCEDURE			12	A		Y		Y
15	PICKLING & PASSIVATION PROCEDURE			12	A		Y		Y
16	DYNAMIC BALANCING PROCEDURE			12	A		Y		Y
17	FERRITE TEST PROCEDURE			12	A		Y		Y
18	SITE ACCEPTANCE TEST PROCEDURE			12	A		Y		Y
19	LEAK TEST PROCEDURE			12	A		Y		Y
20	MATERIAL CONTROL PROCEDURE			12	A		Y		Y
21	MATERIAL COLOUR CODING,MARKING,TRACEABILITY PROCEDURE			12	A		Y		Y
22	WELD CONSUMABLE HANDLING PROCEDURE			12	A		Y		Y
23	LIFTING FRAME TEST PROCEDURE			12	A		Y		Y
24	VACUUM BOX TESTING PROCEDURE								
25	MANUFACTURING PROCEDURE SPECIFICATION (INCL. QUALIFICATION, TYPE & PRODUCTION TESTS)			12	A		Y		Y
26	CRYOGENIC TEST PROCEDURE								
27	FORMING PROCEDURE (DISH, SHELL COURSE,ETC)			12	A		Y		Y
28	HEAT TREATMENT/PWHT PROCEDURE (IF APPLICABLE)			12	A		Y		Y
29	WELD OVERLAY INSPECTION/TESTING PROCEDURE			12	A		Y		Y
30	IDENTIFICATION & TRACEABILITY PROCEDURE			12	A		Y		Y
31	TAT FOR VALVES								
	MISCELLANEOUS	NOTE 3							
J - CERTIFICATION DATA & REPORTS									
1	TYPE APPROVAL CERTIFICATES								
2	MANUFACTURE CERTIFICATES, REGISTRATION & RECORDS				A				Y
3	CERTIFICATE OF COMPLIANCE	NOTE 2							Y
4	WELD OVERLAY/CLADDING TEST REPORTS	NOTE 2							Y
5	HAZARDOUS AREA CERTIFICATES FOR E & I EQUIPMENTS INCLUDING ECAS CERTIFICATES				A				Y
6	FACTORY ACCEPTANCE TEST REPORTS AND PERFORMANCE TEST RESULTS (ALL DISCIPLINES)				A				Y
7	WEIGHT REPORTS/ CERTIFICATES	NOTE 2							Y
8	BASELINE THICKNESS SCHEDULE								Y
9	DIMENSIONAL CONTROL REPORTS	NOTE 2							Y
10	MATERIAL TEST CERTIFICATES	NOTE 2			A				Y
11	WELDER & WELDING OPERATOR PERFORMANCE QUALIFICATION CERTIFICATES	NOTE 2							Y
12	NDE OPERATOR QUALIFICATIONS	NOTE 2							Y
13	PRE PRODUCTION QUALIFICATION AND TYPE/PRODUCTION TEST RESULTS	NOTE 2							Y
14	TUBE TO TUBE SHEET ROLLING/WELDING MOCK-UP TEST RESULTS								
15	HEAT TREATMENT RECORDS	NOTE 2							Y
16	NDE RECORDS (VISUAL/RT/DPI/MPI/EDDY CURRENT/UT MANUAL & MECHANISED)	NOTE 2							Y
17	MATERIAL TRACEABILITY RECORDS	NOTE 2							Y
18	CALIBRATION CERTIFICATE	NOTE 2							Y
19	ROTOR BALANCING REPORT (DYNAMIC/STATIC)				A				
20	PRESSURE TEST CERTIFICATE (Hydro / Pneumatic/Leak)	NOTE 2							Y
21	CRYOGENIC TEST REPORT								
22	PROOF LOAD CERTIFICATES (LIFTING EQUIPMENT-BEAMS FRAMES etc.)								
23	NAMEPLATE RUBBING/ PHOTO	NOTE 2							Y
24	INSPECTION/ SURVEY REPORTS (INCLUDING THIRD PARTY/ REGULATORY AUTHORITY)								
25	FUGITIVE EMISSION TESTS (PROTOTYPE & PRODUCTION)				A				
26	WELD REPAIR REPORT	NOTE 2							Y
27	ROUTINE TEST CERTIFICATES FOR ELECTRICAL EQUIPMENTS				A				
28	HARDNESS TEST REPORT	NOTE 2							Y
29	FERRITE TEST REPORT, IF APPLICABLE	NOTE 2							Y
30	CHARPY IMPACT TEST RESULTS/ DWTT TEST RESULT	NOTE 2							Y
31	OPERATIONAL TORQUE TEST RESULTS								
32	FUNCTIONAL TESTING OF INSTRUMENTS								
33	SITE ACCEPTANCE TEST REPORT								Y
34	SIL CERTIFICATES WITH SAFETY MANUAL								Y
35	NACE CERTIFICATION	NOTE 2							Y

		ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C			 				
		EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102							
		ATTACHMENT 4 - VENDOR DOCUMENT REQUIREMENT LIST							
COMPANY PROJECT No. :		1060-2501			DATE:	19-May-26			
CONTRACTOR PROJECT No.:		25002			REV.No.:	0			
PROJECT:		PROJECT SALT							
MATERIAL REQUISITION NO.:		1060-2501-CA220-MR-MRQ-002							
MATERIAL REQUISITION TITLE:		MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)							
ITEM No.	DOCUMENT TITLE	NOTES	With Bid	Post Order			Final Docs	IOM	MRB
				No. of weeks	Category	Key Doc.	Required		
				1	2	3	4		
36	CORROSION TEST REPORTS : HIC , SSC , IGC TEST REPORT								
37	MECHANICAL RUN TEST REPORT				A				
38	POSITIVE MATERIAL IDENTIFICATION (PMI) TEST REPORT	NOTE 2							Y
39	EC DECLARATION /CE MARKING/ PED CERTIFICATION								
40	PPRESERVATION RECORDS	NOTE 2							Y
41	INSPECTION RELEASE NOTE				A				
42	NON CONFORMANCE REPORT	NOTE 2							Y
43	SURFACE PREPARATION & COATING / PAINTING / GALVANIZING/ FBE /INSULATION/REFRACTORY / PICKLING & PASSIVATION INSPECTION REPORT	NOTE 2							Y
44	MATERIALS TEST CERTIFICATES FOR HVAC SYSTEM UNITS AND SUB COMPONENTS								
45	HAZARDOUS AREA E&I INSPECTION REPORT FOR EQUIPMENT/PACKAGE SKID								Y
46	DUAL USE CERTIFICATE (IF APPLICBALE)	NOTE 2							Y
	MISCELLANEOUS	NOTE 3							
K - MANUFACTURER RECORD BOOK AND OTHER MANUALS									
1	MANUFACTURING DATA INDEX / DESIGN BOOK/ EDB / MDR			20	A				Y
2	MANUFACTURING DATA / DESIGN BOOK/EDB/MDR	NOTE 4, 10		D	A				Y
3	TECHNICAL INSTALLATION OPERATING & MAINTENANCE MANUAL- INDEX			24	A		Y		
4	TECHNICAL INSTALLATION, OPERATING AND MAINTENANCE MANUAL	NOTE 11		D-8	A		Y	Y	
5	CERTIFYING AUTHORITY RELEASE NOTE								
	MISCELLANEOUS	NOTE 3							
M - SPARES AND MAINTENANCE DATA									
1	SCHEDULE OF MANUFACTURER'S COMMISSIONING SPARES		Y	8	A		Y		Y
2	SCHEDULE OF MANUFACTURER'S SPARES FOR 1 YEAR & 2 YEARS OPERATION		Y	8	A		Y		Y
3	SCHEDULE OF MANUFACTURER'S RECOMMENDED INSURANCE / CAPITAL SPARES (SPIR FORM)		Y	8	A		Y		Y
4	SPECIAL TOOLS LIST		Y	8	I		Y		Y
	MISCELLANEOUS	NOTE 3							
N - HANDLING, SHIPPING & SITE INSTALLATION									
1	PACKING MARKING & SHIPPING PROCEDURES			18	A		Y		Y
2	PACKING AND SHIPPING SCHEDULE/ LIST	NOTE 6		22	A		Y		Y
3	HAZARDOUS MATERIAL SHIPPING CERTIFICATE								
4	ERECTION, INSTALLATION, PRE-COMMISSIONING, COMMISSIONING PROCEDURES			22	A		Y		Y
5	DETAILED PRESERVATION AND STORAGE PROCEDURE			22	A		Y		Y
6	DETAILED HANDLING PROCEDURE COMPLETE WITH SPECIAL LIFTING GEAR			22	A		Y		Y
7	SHOP FABRICATION DEGREE		Y						
8	FIELD TRAIL RUN TEST PROCEDURE			12	A		Y		
	MISCELLANEOUS	NOTE 3							
S - SAFETY DOCUMENTS									
1	FIRE AND GAS DETECTION SYSTEM LAYOUT								
2	HAZARDOUS AREA LAYOUT								
3	SAFETY VALIDATION PLAN / REPORT								
4	RELIABILITY, AVAILABILITY, MAINTAINABILITY (RAM)								
5	SAFETY INTEGRITY LEVEL (SIL) CALCULATIONS (VERIFICATION)			18	A		Y	Y	
6	NOISE STUDY / DATA SHEET		Y	12	A		Y		
	MISCELLANEOUS	NOTE 3							
Q - QUALITY ASSURANCE / QUALITY CONTROL DOCUMENTS									
1	ISO 9001 CERTIFICATE		Y						
2	INSPECTION & TEST PLAN			12	A	Y	Y		Y
3	QUALITY ASSURANCE PLAN			4	A		Y		Y
4	AUDIT PLAN / SCHEDULE								
	MISCELLANEOUS - QUALITY MANUAL	NOTE 3							
Notes									
(1)	COLUMN 1 DENOTES DOCUMENTATION REQUIRED WITH BID (Y = YES). ALL DOCUMENTS ELECTRONIC SUBMISSION.								
	COLUMN 2 SUBMITTAL DATE (P) POST ORDER IN WEEKS, (D) -DELIVERY, (T)- TEST. ALL DOC. ELECTRONIC SUBMISSION.								
	COLUMN 3 SUBMISSION FOR REVIEW & APPROVAL (A) / FOR INFORMATION (I) / REVIEW AT SITE (AS) OR WORKS (AW)								
	COLUMN 4 DOCUMENTS SUBJECT TO LIQUIDATED DAMAGES AS DETAILED IN COMMERCIAL TERMS & CONDITION OF PURCHASE ORDER								
	COLUMN 5 FINAL DOCUMENT TO BE SUBMITTED. IN ADDITION TO SEARCHABLE PDF, ALL DOCUMENTS /CERTIFICATES /DRAWINGS /MANUALS SHALL BE SUBMITTED IN CD-ROM, IN COMPATIBLE NATIVE FORMAT								
	COLUMN 6 DOCUMENTATION TO BE INCLUDED IN INSTALLATION AND OPERATING MANUAL (IOM)/ FINAL DOCUMENT (Y=YES)								
	COLUMN 7 MANDATORY DOCUMENTATION TO BE INCLUDED IN MDR. (Y = YES)								
(2)	To be verified by Inspector at VENDOR's Works. Final review and acceptance will be part of the Manufacturers Data Record (MDR) Review. P.O line items and project tag number must be consistently identified with each serial number as reflected in the inspection/test reports.								
(3)	Miscellaneous Documents' is an allocation given to capture all additional necessary documentation required from VENDOR 'to fully define his Scope of Work and will be listed in VENDOR Master Document List.								
(4)	Refer Manufacturers Data Record (MDR) guidelines attached with the Purchase requisition.								
(5)	Compatible Electronic copies of Equipment Design Book, EDB, MDR and Technical Installation, Operating and Maintenance Manual to be 'submitted after final approval of hard copies.								
(6)	Hard copy and Soft copy of Packing and Shipping Schedule shall accompany shipment.								
(7)	Documents shall be submitted with Contractor Document Cover Approval/ Review Sheet. Drawings shall be submitted with 'Contractor Drawing Sheet.								
	Document Cover Sheet / Drawing will be given to VENDOR during post order engineering.								
(8)	Document shall be submitted in PDF searchable format (OCR) and in native format to the extent possible (Excel, Word, ACAD)								

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 						
	ATTACHMENT 4 - VENDOR DOCUMENT REQUIREMENT LIST								
COMPANY PROJECT No. :	1060-2501		DATE:		19-May-26				
CONTRACTOR PROJECT No.:	25002		REV.No.:		0				
PROJECT:	PROJECT SALT								
MATERIAL REQUISITION NO.:	1060-2501-CA220-MR-MRQ-002								
MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)								
ITEM No.	DOCUMENT TITLE	NOTES	With Bid	Post Order			Final Docs	IOM	MRB
				No. of weeks	Category	Key Doc.	Required		
			1	2	3	4	5	6	7
(9)	Drawings shall be in AutoCAD Format								
(10)	Final EDB, MDR shall be submitted along with shipment								
(11)	Final IOM shall be submitted before 2 weeks from shipment								
(12)	Country specific testing/statutory compliance								
(13)	Seller shall use the project's standard formats. Native files of the format will be provided after purchase order.								
(14)	Below documents shall be submitted for HAZOP / SIL study before 4 weeks, as minimum. - Control and Safety Narrative - Logic Description & Logic Diagram - Cause and Effect Chart or Diagram								
(15)	In case of Package equipment, Seller shall submit / provide the following documents for Contractor's REFERENCE within 2 months after the Purchase Order. The official submission is stated in the "Required" column. - Pre-comm, Site Complete Unit Test and Performance Test Procedure, including Lube Oil/Seal System Flushing Procedure as well as chemical cleaning and etc. - Operation and Maintenance Instruction								
(16)	There might be some additional seller prints required after purchase order, Contractor will request the seller prints by comments. So, Seller shall submit the requested seller prints at that time. Seller shall add other required seller prints / documents, if required.								
(17)	Identifies these documents are Not Applicable (NA) for this MR/PR/PO								

Document Codes for SDR

CONT. DOC. CODE	DOCUMENT TITLE	DOCUMENT DESCRIPTION
A01	Supplier document Register / Supplier master document schedule/list (SDR/SMDS/SMDL)	Listing by category and title of all VENDORS documents to be issued per VDRL Contractor's Format.
A02	Exceptions to codes and specifications	Deviations to P.O during the order execution shall be handled separately through a Deviation Request (DVR) procedure.(Deviation accepted during bidding stage will be part of P.O)
A03	Customer reference list	Reference list containing relevant key technical parameters, End user's name, Contractors name, Year of manufacturing etc. for same / similar equipments and models as that offered against the Requisition.
A04	Sub-VENDOR list	List to include proposed VENDORS of all equipment and components for packaged units.
A05	Sub-order Schedule / Copies	1. Schedule shall show all sub-orders to be placed by VENDOR. Against each entry VENDOR shall indicate anticipated award date and the latest date by which sub-order must be placed to meet the overall schedule. 2. VENDOR shall submit un-priced copies of sub-orders at the time of order placement.
A06	Certificate of origin	Certificate confirming that all goods are sourced, manufactured & tested in the country of origin.
A07	VENDOR's overall schedule (engineering, procurement & fabrication/production)	1. Schedule to be in bar chart form, showing design, manufacture, inspection, testing and delivery of all equipment, materials and components to be delivered by VENDOR and his sub-VENDORS. 2. Earliest and latest completion dates shall be entered alongside each activity with float indicated. 3. Once agreed with Contractor, the "planned" dates shall not change without prior approval by Contractor. 4. Progress to date shall be clearly shown against each activity. 5. Procurement and delivery of sub-VENDOR items. 6. Summary schedule of issue dates required for all documents in VDRL Code A01 above grouped by prime category, in bar chart format to show relationship with the Fabrication/ Production Schedule.
A08	Monthly progress report (fortnight report will be obtained if required)	Monthly progress reports as per project format: e-mail or fax report to be submitted within three working days after the last Friday in each calendar month containing the following information as a minimum: a) Narrative explaining salient features of work carried out during the month, problems encountered on both on engineering and program nature, steps being taken to overcome them, and confirmation that still the contracted delivery date(s) will be achieved. b) Running log of all commercial changes or requests made (whether or not approved by Contractor) together with status c) Running log of all design concessions / deviation requested by VENDOR. d) Updated fabrication/production schedule "front lined" to show actual progress at cut-off e) Updated sub-order schedule indicating all sub-orders to be placed by VENDOR f) Updated VENDOR Document Register showing status of all drawings to be produced against the order
A09	VENDOR profile / Catalogue of product	VENDOR to submit their profile along with the catalogue of product.
A10	Safety policy records (HSE)	VENDOR shall provide the following details: - Safety policy - Lost Time Injuries (LTI) 3 to 5 year record - Accident free man-hour in last three years - HSE plan - Number of fatality in last three years - Non-smoking plan - Non-Alcoholic plan
A11	Project Execution Plan	VENDOR shall provide the following details: - Organisation Chart - Work locations - Work execution methodology - mobilization in engineering office and site - Participation in meetings and reviews - Information flow/ data exchange
A12	VENDOR Concession Request	Concessions to Project Specifications/Codes/Standards during the order execution shall be handled separately through a Concession Request procedure.
A99	Miscellaneous	Control documents, not covered above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
B01	General Arrangements 1) Basic details in GA	1. Overall dimensions relative to unit datum. 2. Access, withdrawal and lay down requirements for maintenance, minimum height for hook (for EOT/HOT crane) to be shown. 3. Location and numbering of all piping and tubing terminations for Contractor connections. 4. A tabulation of connections (interfacing with Contractor's equipment/piping or with another skid of VENDOR), preferably located in the top right hand corner of the drawing giving: Connection Identification, Service, Size, Rating and Facing. 5. Design data, Nozzle orientation, Nozzle data and Material Data. 6. Suction line straight run, removable spool requirements for centrifugal compressors and pumps. 7. Overall Dimensions, Heat Treatment Data, Anchor Bolt Ring base Plate Details, BOM, Lifting Lugs, Trunnions, Orientation, Earthing Boss, Location of Platform, Stair ways and ladders. 8. Identification and location of all major skid components with Contractor's tag numbers added. 9. Where a package consists of more than one skid, separate drawings shall be provided for each skid. 10. Direction of rotation for drivers and driven equipment. 11. Magnitude and direction of thermal movement of all cryogenic or hot equipment. 12. Overall weights (erection, operating and test weights), weight of each shipping section and maintenance weights for major components. 13. For equipment, which is welded, skirt weld preparation is to be detailed. 14. All drainage information, including open and closed system drain connection sizes, major lube oil drain pipe slope/angle, drip pan slope, etc. 15. Spreader beam, lifting points and Centre of Gravity (CG) 16. Where appropriate, an equipment list is also to be submitted. 17. Location of local control panels, junction boxes, analyzer shelters etc. 18. Details of all CP equipment layouts.
	2) Foundation design load	1. Fixing details. Reciprocating Compressors and Engines: Magnitude, direction, phase, and point of application of unbalanced forces and couples referenced to a clearly defined axis. Such forces shall be the steady state dynamic forces (not transient or equivalent static forces) which occur during normal operation. Vibrating Solids Processing Equipment: Magnitude of short-circuit torque. Turbo generators: Vacuum pull load. Condensing Steam Turbines: Free Standing Vessels, Packaged Equipment or Boilers: 1. Moment and shear at point of support as a result of wind. 2. Earthquake forces and moments for both empty and operating conditions. 3. Motion from waves, wind, etc., according to sea state conditions, if applicable. 4. Force due to mass flow of solids. Gas Turbine Generator and Emergency Diesel Generator: Cable trench requirement in the foundation for routing the generator power & control cables. Shell and Tube exchangers: Tube bundle extraction force
	3) Acceptable nozzle loads	Drawings to indicate acceptable loads, forces and moments on flanges to which Contractor connects, together with loads during normal and maximum operating conditions - if not covered by applicable specifications. Calculations to be included. These loads should be within the limit of allowable nozzle loads attached with the requisition.
	4) Interface and connection schedule	1. Listing by number of all VENDOR termination points, including electrical and instrument cable terminations and all junction boxes cross-referenced to the relevant drawings. 2. Size, rating and specification of all piping and tubing termination points requiring Contractor connection. 3. Identification of corresponding connection point on another skid or system to which each point shall be connected. 4. Identification of fluids at each connection point including pressure and temperature conditions. 5. For each vent and drain, fluids under normal and abnormal operating conditions shall be stated, and system to which each must be connected (i.e. Contractor's vent or drain - safe, open or closed).
	5) Material selection schedule/table	Table listing, for each component of the plant, the VENDOR's material selection as a function of service conditions and chemical characteristics of the fluids in contact with it.
	6) Provision for emission monitoring from stack (probe inlet nozzle with access ladder/ platform)	Detail drawing showing specified details.
	7) Terminal point schedule	Terminal point schedule giving details of all Contractors' interfaces (Tie -in point number, Nozzle size, rating, scope of supply of counter flanges etc.). Tie-in points with- in VENDOR's
	8) Weight data sheets	VENDOR shall complete weight data sheet for each separately installed item of equipment or skid in accordance with weight data sheet and instructions.
B02	Detail drawings / fabrication drawings / Exploded view cross sectional drawings with part list	Detail drawings to indicate method of construction, plus all features, which are omitted in GA drawing but are required for clarity. Shall show detail drawings of individual assemblies, Vessel Support details, Nozzle and welding details, Internal detail drawing, Lifting Lug details, Support ring/ lug details. Cross-sectional drawings shall be produced to allow: 1. Design to be reviewed. 2. Parts to be identified for material identification. 3. Parts to be identified for spares identification. 4. Material of construction (ASME/ASTM grade).
	Mechanical Seal Detail and cross section drawing	Mechanical seal details including, as a minimum, the following information: 1. Dimensions including clearances 2. Equipment tag number and service 3. Part list, defining materials with ASTM Designation. For forced air cooling system, number of cooling fans and rating of the fan motor shall be included in the part list. 4. Identification of fluid connection points 5. All wetted parts of the seal in contact with the process fluid highlighted by a note or symbol (e.g. *) 6. API Seal Code and system description 7. Description of operation 8. Piping system indicating all components and materials 9. Cross section with Bill of materials
	Dry gas seal detail & cross section drawing	Dry gas seal details including, as a minimum, the following information:

Document Codes for SDR

		1. Dimensions including clearances 2. Equipment tag number and service 3. Part list, defining materials with ASTM Designation 4. Identification of fluid connection points 5. All wetted parts of the seal in contact with the process fluid highlighted by a note or symbol (e.g. *) 6. Seal Code system description 7. Piping system indicating all components and materials 8. Cross section with Bill of materials
B03	Motor and Generator GA drawing, Terminal Box details	1. All dimension as required per IEC 60034 2. Main Terminal Box for the power cables with details of the terminals including the stud size, the clearance from box internal, distance between the terminal and the cable gland plate / cable entry, details of the cable entries, MOC of terminal box enclosure and Ex protection & IP projection 3. Auxiliary Terminal box with all dimensional details, type and size of terminals, clearance of terminals from box internals, details of cable entries, MOC of terminal box enclosure and Ex protection & IP projection. 4. Wiring detail for all auxiliary wiring on the motor & for RTD for bearing and winding the wiring diagram shall include the set point for alarm and trip settings.
B04	Panel, cabinet, Switchboard layout (For package)	A) Panel, Cabinet, Switchboard layout drawing shall provide the following as a minimum: 1. Front of panel layout clearly showing overall size and layout, with a table of instruments showing duty/label engraving/model no. 2. Back of panel arrangement clearly showing same data as front panel including the minimum rear clearance requirement for maintenance / cooling. 3. Construction drawing showing main dimensions hinging/opening of doors, door restraints, method of locking, plinths, stiffeners, hold down details (fully dimensioned) anti-vibration methods, materials, panel finish procedure and colors. 4. Mimic/enunciator drawing where applicable. 5. Internal layout of panel showing: a. Lighting b. Cable entries and terminals / terminal strip locations for power and control including the segregation provided for terminals of different voltages / functions. c. Wiring trays d. Segregation of voltage level, IS and non-IS equipment. e. Hydraulic, pneumatic layouts (where applicable). f. Clean earth/dirty earth bars. 6. Control desk drawing shall provide the following as a minimum: a. General arrangement of the control desk along with telecom equipment (if applicable) indicating dimensions etc. b. Detail drawing indicating desk finish, drawers, filing space (if applicable) etc. c. Electrical requirements such as computer/utility sockets etc.
B05	Electrical Layout	Layout drawings showing: 1. Location and elevation of all motors, other electrical consumers etc. and Contractor free issued equipment where applicable along with. 2. Separate drawing shall be prepared to indicate the earthing cable layout from the earth bus of the package skid to earthing connection on electrical and instrument devices on the skid.
B06	Instrument Layout	A) Instrument Layout drawings showing: 1. Location and elevation of all instrument, control valves, control panels, etc. and Contractor free issued equipment where applicable along with. 2. The routing of all instrument air distribution, pneumatic tubing, signal/power supply cables, earthing cables and the location of all instrument junction boxes. 3. Fire / Gas / Smoke detection instrumentation including Manual call points. B) Instrument Cable routing drawing shall include the following as a minimum. 1. Route details for cabling from the instrument till the junction box and control room. 2. Details such as size, quantity, elevation etc. of cable tray as appropriate for the cabling network. 3. Detail such as cable trench depth, cable segregation, back-filling, cables tiles, route markers etc. for the cable trenches.
B07	Plot plans for packages (with locating dimensions for all equipment / skid)	Drawing indicating all equipment with sizes, locating dimensions, elevation, maintenance/operating space requirements, etc. For HVAC equipment plot plans including outdoor and indoor equipments. The location of the equipments includes the dimensions from the reference points like wall or grids, <u>maintenance space between the equipments for serviceability, grade level of the equipments where they located</u>
B08	Equipment skid piping	1. Drawing that shows piping arrangement and relevant isometrics (for process, drains, vent and auxiliary piping) on equipment skids. 2. Valve drawings shall be submitted for all valves included in the scope of supply.
B09	Isometric drawings	Isometric drawings shall be submitted for : 1. Piping within the scope of package VENDOR (To be erected at site by Contractor). 2. Piping not within the scope of the package VENDOR but required for interconnecting different units of the package. 3. Valve drawings shall be submitted for all valves included in the scope of supply.
B10	Name plate drawings	Drawing showing details of manufacturer's nameplate.
B11	Insulation/lining/fireproofing / Refractory details	Drawings to indicate thickness, specification and extent of application. To include anchoring and expansion joint details.
B12	Lifting beam / frame / sling drawings / lifting arrangement drawings (for shipping and erection)	1. Certified drawings showing dimensions of lifting equipment and lifting arrangements for transportation and installation. 2. Details of lifting appliances, beams supplied within VENDOR package.
B13	Civil/structural arrangement drawings (inclusive of match marking details for identification of parts and assembly)	Construction drawings showing all plans, elevations and details necessary for construction of civil and buildings, including the following: 1. Structural plans and elevations of buildings 2. Internal and external architectural plans of buildings 3. HVAC layout and air flow diagrams 4. Utility layout details 5. Electrical and Instrument layout details
B14	3D-CAD model of package / equipment.	In Contractor specified format native file.
B15	HVAC single line layout	One line representation of HVAC systems with HVAC equipments and duct/pipe layouts including the interface with the electrical/control panels defining the relationships and to include: 1. Details/reference to HVAC equipments 2. Tag numbers of all the equipments 3. Duct sizes for the supply, return and fresh air ducts 4. Pipe sizes of all the refrigeration pipes/chilled water pipes 5. Location of HVAC equipments
B16	HVAC refrigerant piping and metering devices layout	Representation of refrigerant pipes and accessories connected to AHU's and Condensing units. The layout represents 1. The size of the refrigerant pipes 2. Valves, fittings, strainer, sight glass in the pipe layout). 3. Indication of insulation material and thickness
B17	HVAC duct and instrument diagram	Representation of ducts and instruments showing the duct sizes and instruments including the interfaces with the control panels defining the relationships and to include 1. Location of all the duct accessories including dampers, diffusers, grills, louvers etc. 2. Tag numbers for all the dampers and accessories connected to the control panel. 3. Duct layout with sizes
B18	Cathodic Protection System Installation, Schematics and Layout Drawings	CP System installation drawings shall cover all the items required to complete the CP system. Complete Installation details including MTO to be provided for each item. A detailed schematic for each CP station shall be provided showing GB location, Power supplies and other associated items.
B19	Process pneumatic /Hydraulic schematic & Hookup Drawings	Process hook-up drawings shall be prepared for each tagged instrument that requires a process impulse line for sensing purposes. A Pneumatic hook-up drawing shall be prepared for each tagged instrument air transmission/control signal. Similarly, a hydraulic hook-up drawing shall be prepared for each tagged instrument that requires hydraulic transmission/control
B20	Control system architecture drawing	This document shall include the following as a minimum. 1. Detailed control system hardware, its associated network and interface equipments. 2. Detailed communication networks with package control systems, substation etc. indicating the type of link/protocol and associated equipments.
B21	I/O Point assignment Drawing	This document shall include assignment details of each field tag with control system equipment such as cabinet no., rack no., I/O card no., node no., channel no. slot no. controller no. etc. as a minimum.
B22	Special Instrument Installation Drawing	This document shall provide installation details of special instruments such as analyzers which includes, sample probe details, sample conditioning system etc.
B23	Instrument Earthing/Grounding Drawing	This document shall provide details of clean earth, intrinsic earth and dirty earth requirements for instruments, junction boxes, cable trays, control panels, etc., resistance requirements, earthing cable size, bonding requirements etc.
B24	Power Distribution Drawings	Drawing shall include the following as a minimum 1. Incoming details (Source of power) 2. Outgoing consumers 3. Ratings for the above 3. Ratings of all MCCBs and fuses 4. Termination wiring details 5. Dimensional details of panel
B25	Interposing Relay panel Drawing	Drawing shall include the wiring between incoming terminals and relay coils, relay contact and outgoing terminals with the details of wire no., terminal no. at both terminal block and relay ends, wire size, color code, signal tag/ identification no. etc.
B26	Electrical Heat Tracing Circuit Isometric	Isometric drawings shall include (as applicable) 1. Piping , vessels , Valves , Instruments , circuit map/limit etc. 2.indicate circuit number /tag
B99	Miscellaneous	Any document (Mechanical/ Electrical/ Instrument/Piping) not covered in the above, which are required by the Contractor to carry out his obligations of EPC / Requested by Company or identified by VENDOR for submission to Contractor.
C01	Process description	Process description of the package
C02	Process Flow Diagram (PFD) / Utility Flow Diagram (UFD) and heat mass balance	1. Diagrams shall be provided for all hydrocarbon and utilities systems (e.g. Steam, lube oil, seal gas, cooling water, instrument air, nitrogen, fuel gas etc.). 2. Diagrams shall be drawn using Contractor symbology, and shall indicate major control functions. 3. Each stream shall be clearly labeled with a tag number
C03	Piping & instrumentation diagram (P&ID)	P&ID shall be drawn by VENDOR using standard symbols provided on Contractor's legend sheet, for all hydrocarbon and utility systems including HVAC flow diagrams. P&ID to show at 1. Equipment and spares 2. Equipment names and numbers 3. Major items of equipment stating duties and design conditions. 4. Equipment internals and externals material of construction and corrosion allowance for equipment, consistent with data sheet. 5. Insulation and electrical / steam trace heating requirements 6. Venting, purging and draining requirements 7. Relief requirements PSV's location, tag numbers and sizes 8. PSV interlock valves and interlocking sequence

Document Codes for SDR

		9. Positive isolation requirements 10. Block and check valves, with type identified 11. Valves and actuators and solenoids. Failure mode to be stated 12. Nozzles of vessels, sizes, man ways and other inspection provisions 13. Slope of vessels 14. Levels in vessels (Normal, Alarm , trip etc.) 15. Elevations of major equipment 16. Process and utility flow lines with directional arrows 17. Continuous boxes plus references 18. Lines sizes, numbers, pipe specifications, specification breaks and product designation complying with the project specification. 19. Piping special items 20. Piping notes (e.g. Slope, No pocket) 21. Switches and instruments with tag numbers and alarm trip set points. 22. Sample points and corrosion monitoring facilities 23. Emergency shutdown valves 24. Interfaces with other PID, including Contractor's PID 25. All interface equipment, instruments, valves, etc., shall be tagged with Contractor's tag numbering system requirements. All others are to be tagged in accordance with 26. All VENDOR/Contractor scope breaks 27. Symbolology Legend as per project
C04	Control and safety narrative including Anti-Surge write up	This document shall be a detailed written description giving principles of package function and defining all aspects of the operation of the equipment supplied. 1. Simplified block logic diagram shall relate to the system by Project tag number. 2. Start-up, shut down, abnormal operating condition and special maintenance operations shall be covered. 3. Reference shall be made to P&ID and other documents submitted to the Contractor and shall include Contractor's tag numbers. 4. Input, output, permissive signals, including internal logic signals required to accomplish start-up, shut down, etc., shall be described. 5. Display of information, operator interface and access to the package control system shall be described. 6. Listing of pre-alarm and shut down alarm trip requirements (local and CCR) and the failure mode of all valves and equipment must be clearly indicated. 7. Control block diagram shall clearly show switch room equipment, control room equipment/CCR equipment and types of signal to and from, with interface information clearly defined. 8. Details of the Anti surge control system (hardware, software), system description, performance controller and anti-surge controller details with necessary curves, control settings, system calculations to substantiate anti-surge valve sizing and selection, noise data, flow meter calculations, configuration requirements and interfaces with plant ICSS etc.
C05	Operating and Control Philosophy, Block diagram	Shall be supplied for all packaged equipment and shall include the following: 1. Modes of operation 2. Basis for selection of the mode of operation 3. Operator dependent actions 4. Health and safety responsibilities 5. To show pump sizing criteria, stop/start pump quenching, pressures & capabilities- unit starting & stopping pump changeovers, etc. 6. Simplified Control block diagram related to systems etc. indicating field instrument, local room /control room equipment, substation equipment, type of signals (hardwired/soft link) to and from the Contractor's system etc. shall be clearly defined. 7. All communication equipment with type of serial links with the Contractor's control system to be clearly defined.
C06	Termination drawing	A) Instrument cable termination details shall show the following as a minimum. 1. Tag nos. of panel and junction box, where the cable needs to be terminated. 2. Terminal nos. at both the ends; source and destination (junction box and control panel end). 3. Cable number, core number with necessary core colors as appropriate. 4. Junction box gland plate drilling sizes to suit external cabling to/from the package, and all gland information. All cables indicated on these drawings must be terminated at both ends. B) Terminal block diagrams shall indicate the following as a minimum. 1. Each terminal block with terminals numbered and the cores of the connecting cable identified. 2. The core identifiers given shall be those ferruled onto the conductor and shall follow Contractor's numbering system. 3. Segregation between AC and DC signals, IS and non-IS signals must be indicated.
C07	Electrical Single Line Diagram	One line representation of electrical power distribution diagram with metering and protection details including the interface within the distribution equipment / DCS / Electrical Network System defining the relationships &to include (as appropriate): 1. Details / reference to SLD of the power source 2. Tag no's, rating details of all the distribution equipment viz. generators, switchboards transformers with interconnecting cables / bus duct details. 3. Metering, protection and control for each type of feeders connected to switchboards. 4. Details of the consumers connected to the each switchboard with type of feeder and cable details (this can be represented tabular form with type feeder shown in SLD. 5. Location of equipment shall be indicated in the SLD. 6. SLD shall be developed based on the legend sheet provided)
C08	Instrument Logic diagram, Cause & effect diagram	1. To be prepared for all sequence and interlock systems to show shutdown & control systems functions. 2. Symbols to be in accordance with ISA 5.2. 3. Diagrams are to be arranged so that the overall logic is clearly apparent. 4. Sub-system logic will be grouped together to clearly identify their association with each other and with the overall logic system. 5. Fire & Gas logic diagram shall be separately prepared in line with the details mentioned above. 6. Cause & Effect diagram shall be in accordance with ISO 10418 to indicate clearly and precisely the shut down requirements on the standard format sheet with defined convention. Individual C&E charts to be produced for each process unit. All auto start-change-over, etc. of pumps, etc. to be clearly defined with location of field devices.
C09	Electrical Logic, Schematics, Wiring diagram	This diagram shall include the details of all external connections/ devices, cross reference of the contacts / devices for easy identification / reading of the schematic drawings, detail bill of material with manufacture / type reference details for all devices used in the scheme. The scheme shall include the termination block diagram details and cross referring to the internal wiring detail.
C10	Cable block / Interconnection diagrams	Diagrams shall display, in block form, the items of electrical and instrument - equipment and the cables connecting them. The terminal block reference for each item shall be stated, along with the number and size of the conductors in the cables. Cable NOT in the VENDOR's Scope of Supply shall be clearly identified. For instrument diagrams shall display, in block form, the instruments and the cable connecting to the junction box and marshaling \ system cabinet.
C11	Loop drawings/ diagrams	The loop drawings shall be prepared for all open and closed loops configured in the plant. It shall indicate as a minimum the details of field instrument/valve, field junction box, marshaling terminals, barriers, relays, I/O cards, etc. All wiring details, termination details and interconnections from field device to system, including junction box numbers, cable numbers, cable core numbers, terminal colour coding of wires and ferruling details etc. must be clearly indicated.
C12	Visual display unit (VDU) graphics	This document indicates the details of the operator interface graphics to be configured in the system and shall include the following details as a minimum. 1. All equipment with associated instrument tag nos. & valves with interconnecting piping as appropriate based on P&IDs. 2. Colour coding of pipelines as per Contractor's agreed philosophy. 3. Static and dynamic data requirements.
C13	Internal Wiring Diagram (Connection Diagrams)	This shall indicate the following as a minimum: 1. Interconnection wiring details between marshaling cabinet terminals, relays, lamps, cards, relays, barriers, surge protectors (where applicable), etc. 2. Power distribution details for all consumers within the panel and for those instruments/equipment (located outside the panel). 3. All wiring to be colour coded/ marked with identification numbers for easy reference.
C14	Functional LOGIC Diagram	Diagrams shall include logic diagrams for all functions in the ESD and F&G systems like safeguarding, blowdown, start-up etc. including typical function blocks like voting blocks, input and output blocks etc. Logic diagrams for F&G system shall be provided separately. System generated logic diagrams may be provided.
C15	Control Scheme/ Diagram	Diagrams shall include control and logic schematics for all control functions in the DCS like simple & cascade PID control, on-off control, bias, PT-compensation blocks, start-up and stop sequences, duty/ standby logic etc. including typical function blocks like motor start/ stop, fan speed control, alarm handling etc. System generated control diagrams may be provided.
C99	Miscellaneous	System Diagrams, not covered above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
D01	Equipment data sheets (Including Reliability Data)	Where Equipment Data Sheets are issued by Contractor as part of the Requisition, they shall be completed by the VENDOR for each item identified. Where data sheets are not issued by Contractor the VENDOR is to use an approved format. In addition to the above following shall also be provided for the applications indicated. API-614 datasheet duly filled in by VENDOR. Lube oil system data sheet (API 614) Lube oil cooler data sheet Lube oil cooler fan data sheet Lube oil pump data sheet Gear box data sheet Dry gas seal data sheet LS/H5 coupline data sheet Vacuum pump datasheet Drum unloading pumps datasheet Pipeline data sheets Noise level data sheets Reliability Data Fire & Safety datasheet
		Where Equipment Data Sheets are issued by Contractor as part of the Requisition, they shall be completed by the VENDOR for each item identified. Where data sheets are not issued by Contractor the VENDOR is to use an approved format. In addition to the above following shall also be provided for the applications indicated. API-614 datasheet duly filled in by VENDOR. Lube oil cooler data sheet, duly filled in by VENDOR. Lube oil cooler fan data sheet giving details of performance, material of construction etc. duly filled in by VENDOR. Lube oil pump, duly filled in by VENDOR. Gear box data sheet API format, duly filled in by VENDOR. Gear box structural natural frequencies with mode shapes and complete gear meshing frequency of all mating gears. Dry Gas Seal data sheet API format, duly filled in by VENDOR. Quality of Dynamic balance shall also be indicated as a note in the datasheet. Coupling datasheet duly filled in by VENDOR Vacuum pump datasheet duly filled in by VENDOR Drum unloading pumps datasheet duly filled in by VENDOR Pipeline datasheet as provided in the specification Contractor will define sound power and sound pressure level limitation. VENDOR will complete and return these sheets with anticipated and, if requested, guaranteed data, for the octave mid-band frequencies corresponding to these limitations. seller shall provide reliability data (figures) as per their experience which is published for equipment suitable for particular services. Fire and safety equipment data sheet shall cover weight, name plate, material specification,, utility requirement, valve details, etc.

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D02	Valve datasheets (Including Fugitive Emission Limit)	Datasheet in Contractor's format duly filled in by VENDOR in compliance with the project specification. VENDOR to provide the following: 1. Control Valve/Actuated Valve/Relief Valve data sheet in Contractor's format OR VENDOR datasheet which includes the performance data (all operating cases), materials, end connections, response time, sizing calculations, noise calculations, utility requirements etc. 2. Anti surge valve data sheet in Contractor's format OR VENDOR datasheet which includes the performance data (all operating cases), materials, end connections, response time, sizing calculations, noise calculations, vibration limits, utility requirements etc. 3. Hot Gas Bypass valve data sheet in Contractor's format OR VENDOR datasheet which includes the performance data (all operating cases), materials, end connections, response time, sizing calculations, noise calculations, utility requirements etc. 4. Fugitive emission rate for frequently operated/automated valves
D03	Instrument data sheets	Instrument datasheets shall be prepared based on Contractor's agreed format. Where Instrument Data Sheets are issued by the Contractor as part of the Requisition, they shall be completed by the VENDOR. All instruments shall be provided and separate data sheets shall be provided for each instrument tag. Data sheets shall be given drawing numbers.
D04	Motor data sheets (Main & Auxiliary Motors)	Where typical Motor Data Sheets are issued by the Contractor as part of the Requisition, they shall be completed by the VENDOR for each tag
D05	ELECTRICAL EQUIPMENT DATA SHEETS (FOR PACKAGE)	Data sheets shall be submitted by VENDOR by filling in all the information as per Contractor's format
D06	Cathodic Protection System Material/Equipment Data Sheets	Technical data of each item as per design and specification requirements.
D07	Safety (COSH) data sheets (Material Safety Data Sheet)	Detailed data for all hazardous chemicals to be supplied / required for operation of VENDOR's Equipment.
D08	Material datasheet for external / internal coating material(FBE/3LPE/3LPP/etc.)	-
D09	Cable Technical Datasheets (Electrical/Instrument/ Telecom)	Technical data sheets/ technical specifications for all cables including system, FO, serial link & power cables between cabinets as per cable specification requirements. These datasheets/ specifications shall include details of conductor, inner & outer sheathing, armor, screen, size, color, physical, chemical and electrical properties, fire resistant/ flame retardant, applicable codes etc. as a minimum.
D10	Functional Design Specification	Functional design specification for VENDOR packaged equipment (e.g. DCS, ESD, LIMS, PAS, PLC, FBG, OTS, AMS etc.) to demonstrate VENDOR's understanding and compliance to Contractor's specifications and project requirements. Complete description of the system and its various sub-systems/components in terms of specifications, functionality, features, hardware and software specific to the project requirements shall be indicated in details. Irrespective of whether specified or not, document shall also include redundancy, loading, failure modes and recovery, references to codes and standards, equations, calculations, details of report generations, maintenance features etc.. Separate FDS documents shall be prepared for the following as a minimum: 1. FDS for DCS (FDS for LIMS, PAS & MMS) to be included where applicable) 2. FDS for ESD 3. FDS for FGS 4. FDS for OTS 5. FDS for AMS 6. FDS for Alarm Management System 7. FDS for Graphics 9. FDS for Software configuration 9. FDS for Third party interfaces 10. FDS for Plant information system and networking and security 11. FDS for SCADA System design specification
D11	Telecom Datasheets	Telecom Equipment datasheet shall be prepared based on Contractor's agreed format. Where Item Data Sheets are issued by the Contractor as part of the Requisition, they shall be completed by the VENDOR. All Items shall be covered and separate data sheets shall be provided for each Item tag. Data sheets reflect applicable reference drawing numbers.
D99	Miscellaneous	Data sheets, not covered in the above that are required by the Contractor or identified by VENDOR for submission to Contractor.
E01	Equipment list (multi-discipline)	Equipment list for all equipments covered in package to be supplied by VENDOR with brief specifications.
E02	Load / motor list	Each load (static, motor & electrical utility) shall be listed with description, nameplate rating and absorbed rating stated.
E03	Utilities schedule (power, air, water, lube oil and others)	1. Instrument air consumption. 2. Electrical instrument control and power requirements for both normal operation and upset conditions. 3. Cooling water, steam, or electric tracing requirements.
E04	Lubrication/chemical/catalyst schedule (flushing, lube oil, grease, operating fluid)	Schedule to indicate type and grade of lubricants and other consumables required for all equipment supplied in format issued by Contractor. For each entry, first fill capacities, rate of consumption plus frequency of change shall be indicated. Also indicate particle count for change of oils.
E05	Input / Output List, Alarm and trip schedule	Alarm / Trip values for all instruments in VENDOR's scope of supply shall be included in this document. Input / Output (I/O) list to be prepared for all Control and Safeguard Systems included in the Material Requisition (DCS, IPS, PLC, FBG etc.). This list, dedicated to hardware and software signals, will contain as a minimum the following information: 1. Unit code 2. Loop Name 3. Tag number (in alpha-numerical sequence) 4. Instrument Type 5. Service Description 6. PID No 7. Location (DCS / IPS / FGS) 8. Control System I/O type 9. Signal type 10. Serial Link (S/L) 11. Serial Link System I/O Type 12. Serial Interface type 13. Certification (S/NIS) 14. State 0 15. State 1 16. Volt / current 17. Loop Power (Int / Ext) 18. Line Monitored (Yes / No) 19. Control Action 20. Minimum DCS Range 21. Maximum DCS Range 22. Engineering Unit 23. Alarm 24. Barrier 25. Trend 26. Production Report 27. Station report
E06	Instrument schedule/ index	Separate I/O list shall be prepared for the DCS, IPS & FGS Field tag number. Contractor's agreed format shall be used in preparation of this document. Instrument details (tag no., instrument description, service description, location, PID no., datasheet no., hook-up drawing reference, instrument range with associated alarm and trip values, manufacturer, model number, specifications etc. for all instruments in VENDOR's scope of supply shall be included in this document as a minimum. Contractor's agreed format shall be used in preparation of this document.
E07	Piping line list	All lines in VENDOR's scope of supply. It shall include as a minimum, service, design & operating pressure / temperature, test medium and pressure, NDE requirements etc.
E08	Bit map / serial link protocol	This document shall include as a minimum. 1. Serial link interface details such as type of link, baud rate, etc. as per Contractor's agreed format. 2. I/O details such as tag nos., address, service, bit no., range for analog values, logic states for digital values etc. as per Contractor's agreed format.
E09	Bill of materials	Bill of materials (including insulation, painting and fireproofing) for bulk items (piping / instrument / electrical and mechanical) supplied loose by VENDOR / CP BOQ.
E10	Electric heat tracing circuit schedule & isometric	VENDOR shall identify extent of trace heating requirement on Contractor supplied / VENDOR P & ID, piping isometrics and prepare the design sheet for the heat tracing, circuit schedules and BOM of heat tracing materials.
E11	HVAC air distribution devices selection schedule	The air distribution devices selection schedule shall include all the selection procedures for devices such as inlet, exhaust & fresh air louvers, supply and return diffusers and grills. The schedule shall show velocity, pressure drop & sound levels through the devices.
E12	HVAC dampers (fire and control)selection schedule	Selection shall indicate the selection schedule for all fire dampers, gas dampers and modulating dampers. The fire and gas dampers selection shall adhere to international standards. The selection schedule shall indicate the velocity and pressure drop through the dampers in fully open and close conditions. The modulating damper schedule shall indicate the voltage ratings of the actuators, type of drive, method of actuation etc. in the schedule.
E13	Cathodic Protection Test Facilities Schedule	CP Test facilities schedule shall provide details of all facilities required for CP system monitoring and testing. These include crossings (road, pipeline, overhead lines, rivers) schedule and parallelism (pipelines and overhead lines) details. Schedule shall also indicate preliminary BOM (connection details, TCP, boxes, etc.)
E14	Cable schedule for Instrumentation & Electrical cables within the package	All electrical, instrument and telecom cables shall be listed (in separate contractor supplied template document), both internal to VENDOR's package, interconnecting cables (loose supply if any by VENDOR) between package and external equipment and identification of Contractor installed cables between components of VENDOR's package, listing: 1. Cable size and type 2. Cable number as per project cable tagging philosophy (where VENDOR wants to retain the tags as per their internal standards, it can be indicated in cable schedule along with project tag no.) 3. Gland size and type 4. To/from location 5. Interconnection diagram cross-reference 6. Cable length in meters (interconnecting cables only) 7. Voltage grade 8. Specification 9. Source and destination termination description 10. Where applicable terminal lug sizes also to be indicated (e.g. HV/MV application)
E15	Schedule of PSVs	List of all PSVs within the package.
E16	Certified Equipment List for Hazardous area	List of certified (ATEX/IEC/NEC) showing project tag number, model number, serial number, type of protection, IP rating, Ex marking details (ATEX/ IEC and where applicable NEC), Certifying Authority / Notifying body, Ex-certificate number.
E99	Miscellaneous	Schedule/lists, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor

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F01	Process / utility calculations	Calculations demonstrating the sizing basis and criteria of equipment and systems; e.g. de-aerator sizing, thermosyphon cooler sizing, fired heating sizing, etc. and the associated utilities; e.g. fuel, coolant, instrument air, etc. Detailed calculations to justify the figures given in VDRL Code E03 for all operating conditions defined by Contractor.
F02	Mechanical calculation / Analysis / Studies Structural steel design calculations for base plates, lifting beams Foundation support calculations Lateral critical speed calculations Torsional critical speed calculations Bearing life calculations Thrust bearing size Pulsation studies Rotor / shaft system imbalance response analysis Coupling selection calculations Finite element analysis/ calculation Nozzle loads and movements Externally applied loadings calculations (incl. Seismic) Tank sizing calculations for DWST Anchor bolt sizing calculations Anchor strap sizing calculations Boil off rate calculation for DWST Perlite Concrete calculation for DWST Pre-stressed concrete outer shell tank calculation Reinforced concrete outer tank roof calculation Suspended deck calculation	Stress calculations shall be in accordance with relevant code requirements and demonstrate that design (inc. nozzles) is adequate for operation within the parameters specified for the item, in terms of pressure, temperature, nozzle loadings, etc. Calculations shall determine that structure and any lifting aids are suitable for all phases of lifting, transportation, installation and operation without overstressing any member. Blast study report shall be included as applicable. Where building/structure design by the VENDOR is specified (Code B07), structural design calculations shall be submitted for review and approval. Shall also contain Local load analysis for external attachments like Platform and pipe support cleats. Calculations of foundation support loads and base plate deflections under normal, fault, transportation and installation conditions taking into account static and dynamic loads, and as defined in Contractor's specifications. Calculations shall determine the natural frequency of the shaft assembly and identify forcing frequencies and harmonic components thereof, relative to operating speed range. Results shall be presented in graphical and narrative form, and shall include: 1. Rotor drawings showing each shaft segment clearly numbered 2. Table of masses and stiffness values for each segment. 3. Plot of critical speed against support stiffness with stiffness both in the vertical plane and horizontal plane to be shown for each support point. 4. Plot of speed against vibration amplitudes (Campbell diagrams) to demonstrate the specifications of operating modes form harmonic regions. Calculations shall determine the torsional critical speeds for driver / transmission / driven equipment trains. Calculations shall clearly indicate number and details of finite elements that the system has been divided into for the calculation and a table of stiffness's and inertias for each element shall be included. Results shall be presented in graphical and narrative form. Calculations for Rolling Element bearings shall determine anticipated B10 life with bearing identification in accordance with ANSI B3.15 or B3.16 for radial, axial or combined loading, considering methods of lubrication, dimensions and load variation determined from performance envelope. Calculations and curves taking into account static and dynamic forces over the full range of operating conditions including: 1. Aerodynamic or hydrodynamic thrust load and balance piston compensating load to be shown. 2. Variation in balance piston compensating load with increased leakage rate to be shown. Calculations shall be provided to demonstrate compliance with the nominated design approach in compliance with API 618. Results of acoustical simulation studies shall be provided where specified. Calculations shall also demonstrate the sizing of pulsation dampeners. Demonstration of the sensitivity of the rotor/shaft design to imbalance at various locations by plotting amplitude against shaft speed for both vertical and horizontal vibration. Plot of shaft vibration mode shape, showing displacement against axial length and bearing the locations with the rotor excited at its critical speeds. To show speed range, torque, power, lock-up axial stiffness, torsional stiffness, service factors, etc. to substantiate coupling selection. Input data along with Results of FEA analysis with conclusion. Allowable nozzle loads & movements (X, Y, Z directions) at Contractor's end connections. Loads to be limited as specified in allowable nozzle loads specification attached with the requisition. Calculations to substantiate impact of external loads like wind; seismic etc. is taken in to account. VENDOR shall size the inner tank in cold condition, i.e. at the MDMT the tank dimensions shall be such that the tank can hold the specified volume. Necessary free board shall also be provided. Outer tank shall be sized to hold insulation required for maintaining cryogenic storage temperature of inner tank. VENDOR shall size the anchor bolts of inner and outer tank to withstand seismic load and wind load on inner and outer tanks as required. For concrete outer tank it is not applicable. VENDOR shall size the anchor strap of inner and outer tank to withstand seismic load and wind load on inner and outer tanks as required. For concrete outer tank it is not applicable. VENDOR shall carry out calculations to justify that, the maximum boil off rate is within the specified limit. VENDOR shall carry out calculations to reflect that selected size of perlite concrete ring below the inner tank shell is adequate to withstand the specified anticipated loading. VENDOR shall carry out calculations to substantiate adequacy of pre-stressed concrete outer tank as per BS EN 14620 Part 3 or other code as specified. VENDOR shall carry out calculations to substantiate adequacy of reinforced concrete roof of outer tank. VENDOR shall carry out calculation for adequacy of suspended deck thickness for its self weight and weight of insulation over it. It shall also include calculation for adequacy of hangers and supports welded to outer tank roof frame.
F03	Heat/Power/System loading calculations	Calculations shall determine heat emitted to atmosphere including radiation and convection for various loadings, versus the extremes of environmental temperature specified by Contractor. Discharge temperatures of exhaust gases from both equipment and exhaust stack/pipe to be substantiated. Full details of all assumptions shall be stated. This document shall provide details of the heat dissipation and power consumed by various consumers within the package. It shall also provide details of each system controller loading to ensure that the same is within the project specifications.
F04	Hydraulic calculations/ analysis / thermosyphon loop calculation	Calculations demonstrating pipe friction losses, nozzle sizes, and discharge rates for 'extinguish ant', CO ₂ , sprinkler & deluge system. Detailed calculations indicating the priority volume, head available for loop circulation, frictional loss shall be provided for Contractor's review.
F05	Exchanger thermal rating calculations	Calculations to demonstrate thermal ratings of heat exchangers.
F06	Electrical calculations (load flow/short circuit/ transient/lighting/earthing) UPS battery sizing calculation	1. Load Flow Study shall calculate the steady state active and reactive power flows, current flows, system power factor and the magnitudes and phase angles of all the load and generation bus voltages. 2. Short Circuit Study shall calculate fault level assessments at peak make and break instants at each bus of the switchboard & at various location of distribution network 3. Transient Stability Study is an assessment of system response due to different disturbances via loss of generation /fault / sudden load application / rejection. 4. Lighting calculation shall determine the illumination level & uniformity ratio for an area based on the lighting fixtures provided. 5. Earthing calculation shall include the earthing grid design to meet the required earthing resistance and sizing of earthing conductors Determination of the load profile and sizing of the battery bank for the load profile.
F07	Instrument sizing calculations (Orifice, Control Valve, PSV, Actuators etc.) ESD valve calculations for ESD valve & volume bottles	Orifice size calculation to API 520 for all relief valves, including maximum relieving temperature. Burst disc calculations to manufacturer's formula. Flow capacity calculations; break out, running and reseating torque figures for valve versus actuator torque figures at minimum supply pressure, safety factors used etc.
F08	Dynamic Simulation	Report detailing results of Dynamic simulation for predefined / agreed cases (Start-up, shutdown, settle out conditions etc.)
F09	Stability analysis	Analysis performed on high speed rotary equipments which include Lateral critical speed analysis / Tensional critical speed analysis as specified in relevant specification.
F10	Anti-surge valve sizing	System calculations to substantiate valve sizing selection and noise data. Information to be provided per VDRL Code F11 below.
F11	Acoustic enclosure ventilation system calculations	Calculation of air flow requirements and power requirements to substantiate system design and sizing criteria. Taking into account: 1. Air mass flows 2. Inlet and exhaust 3. Temperature rise heat loads and temperature gradients 4. Filtration requirements 5. Back pressure at worst wind conditions 6. Sketch of system to be provided. Full details of all assumptions shall be stated.
F12	Piping stress analysis/ calculations	1. Piping stress isometric drawing showing the extent of calculations. 2. Calculations of piping stress of lines defined as critical by Contractor. 3. Wall thickness calculations. 4. Branch reinforcement calculations. 5. Piping stress calculations.
F13	HVAC heat load calculations	HVAC Heat load calculations shall indicate the necessary cooling or heating load requirement in the buildings/rooms. The heat load calculations includes: 1. Heat gain through solar gain 2. Heat gain from the solar gain through transmission 3. Heat gain through transmission gain due to the difference in temperature inside/outside 4. Heat gain from the occupants and equipments inside the rooms 5. Heat gain from the fresh air intake 6. Room pressure
F14	HVAC duct sizing and thickness calculations	The calculation includes the duct sizing and thickness for the ducts as per the specified air quantity and velocity. The calculations shall indicate the method used for duct sizing.
F15	HVAC equipment selection and calculations	HVAC equipment selection includes the selection procedures for various HVAC equipments as 1. AHU's and FCU's 2. Split units/Ducted Split units 3. Condensing units/Chillers 4. Ventilation/ Exhaust Fans 5. HVAC Unit Control Panel 6. HVAC MCC
F16	HVAC acoustics and sound attenuator calculations	HVAC acoustic calculations shall include study of sound pressure level of each equipments and comparison with NC requirements. Selection of acoustic/ attenuator with complete data sheet and material properties.
F17	Ventilation, pressurization and extract system calculations	Flow and Static pressure calculations for ventilation, pressurization and extract systems to comply with the requirement of positive/ negative pressures, air changes, fresh air requirement etc. Battery rooms and other rooms where negative pressure is specified separate calculations shall be made with the above criteria's
F18	External static pressure and duct pressure loss calculations	ESP calculations shall be done for 1. AHUs 2. Fan coil units 3. Exhaust fans Complete with the drops in ducts, dampers/filters/ grilles etc.
F19	HVAC chilled water system, pressurization and chemical injection calculations	Chilled water pressurization unit selection with calculation of flow and static head of the pumps. Selection of pressure vessel. Chemical injection calculation with selection of dosing pump, chemical quantity etc. for corrosion inhibition, biorganic controlling, pH balancing etc.
F20	HVAC blast dampers pressure calculations and selection	The blast damper pressure calculations shall be with maximum pressure that the damper can with stand, type of damper. i.e. either blast proof damper or blast proof valves.
F21	Radio coverage Study	Radio link path profiling and link budgeting: Radio signal level prediction calculations.
F22	PA / GA coverage study	System calculations to substantiate loudspeaker power settings, amplifier loading and spare capacity.
F23	Cathodic Protection System Detailed Design and Calculation	Document shall cover details of structures to be protected, considered parameters, protection criteria, detailed calculation, design philosophy, material specification and detailed MTO of considered CP system in line with project requirements and according to international standards and practices.
F24	Calculation as per B31.3 for fittings above 48" / Branch reinforcement fitting calculation	1. Thickness calculation as per ASME B31.3. 2. Branch reinforcement calculations.

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F25	Flange calculations (Sizes above 60") and special flanges	1. Design calculation for flanges for non-standard flanges which are not covered by standards as indicated in PR/PO. 2. Design calculation for flanges for sizes 60" and above .
F26	Thickness calculation for spacers & blinds (Sizes above 24")	Thickness calculation for spacers & Blinds as per ASME B 31.3
F27	Stress and wake frequency calculations	Stress and Natural frequency calculation for corrosion probes/coupons, injection quills etc.,
F28	Cathodic Protection Surveys (Soil Resistivity, Pre-Design, CIPS, DCVG, AC Mitigation) Procedures and Reports	Survey procedures shall cover detailed methods of conducting surveys, measurement techniques and report formatting. Survey reports shall indicate the results of surveys, recorded values, analysis of survey results, conclusions and recommendations.
F29	Dynamic Simulation Study Scope of Work	Document detailing Model scope, list of equipments to be modeled, model boundaries
F30	Overall pressure drop calculations	The document details out the overall pressure drop across the metering system and defines the calculations performed while arriving at the overall pressure drop value. The calculations shall be based on worst case conditions i.e., maximum flow, maximum density, maximum viscosity, maximum pipe roughness etc. Also, the individual items (such as pipe fittings, basket filters, control valves, manual valves, On/Off valves, flow meters, straightening vanes etc.) pressure drop contribution to be accounted for either by referring to manufacturer published values or by ascertaining these from standards (in case not available from manufacturer). In case prover is part of the metering system, then overall pressure drop to be presented separately i.e., 'Overall pressure drop for the metering system' and 'Overall pressure drop for the metering system + prover'.
F31	Sampling probe calculation/ sampling transportation	Sample probe calculations shall include two aspects namely Wake frequency calculations, proper fluid dispersion analysis (the linear velocity of the fluid through the opening of the sample probe is equal to the linear velocity of the fluid in the pipeline at the sampling location or the cross section of the pipe where the sampling probe is). Maximum design flow velocities to be considered for arriving at the values. Sample transportation calculations to ensure that the sample transportation takes place with in stipulated time as specified in project specification. This document to also mention about velocity, Reynolds number, required sample flow, total pressure drop, required sample flow etc.
F32	Overall uncertainty calculations	Overall Uncertainty calculations ascertain the uncertainties associated with the metering system items, operation and maintenance regimes & influences on the system. The document has to discuss and detail the calculations with a final conclusion stating the final uncertainty values calculated for 'Gross observed volume flow uncertainty', 'Mass flow uncertainty', 'Standard volume flow uncertainty'. The actual values of the various calculated uncertainty components (Ex. Temperature uncertainty, Pressure uncertainty, Density uncertainty, Volume correction factor, Thermal expansion uncertainty etc.) are to be clearly detailed out in this document. Manufacturer published uncertainties to be considered (Example : Transmitter uncertainties).
F33	Scan time / Data transfer time calculations	Scan Time calculations shall be provided separately for each system. Data transfer time calculations shall be provided for each inter-system & subsystem communication. This may be included in the respective FDS.
F34	Fast loop flow	Sampling system calculations document objective is to indicate whether dispersion is likely to be adequate for the sampling in the fast loop system with the given piping elements. This document to also mention about velocity, Reynolds number, required sample flow, total pressure drop, required sample flow etc.
F35	Dew point and bubble point calculation	This document objective is for 2 parameters namely Dew point & Bubble point calculations. Dew point calculations has to demonstrate that the process sample remains in same phase before the pressure regulator / vaporizer of sampling system and after the pressure regulator / vaporizer the sample need to be maintained above the calculated dew point to ensure sample is in gas phase. Bubble point calculations has to demonstrate that the liquid sample is maintained at a temperature & pressure where the bubble of vapour formation is avoided. Given that vapor will probably have a different composition than the liquid, the bubble point along with the dew point at different compositions are useful data.
F36	Actuator torque table	Actuator torque table shall have following details a) Valve size , rating & type b) Shutoff DP used for actuator sizing c) Torque required by valve (BTO,ETO, RT, BTC,ETC) d) Actuator type e) Instrument air pressure used for actuator sizing f) Torque delivered by actuator (BTO,ETO, RT, BTC,ETC) g) Safety factor for all the position (Opening, running & closing) h) Valve MAST (Maximum allowable stem torque) i) Maximum torque developed by actuator J) Opening /closing time
F37	Volume bottle sizing calculation	VENDOR shall carry out air volume tank capacity sizing calculation based on following design inputs 1) Number of required air stroke 2) Initial charging pressure for volume tank 3) Required safety factor on backup air capacity (if required) 4) Minimum Instrument air pressure required for full stroke 5) Actuator displacement volume
F38	Verification of pressure rating of tube.	Verification of tube design pressure with the tube dimensions and mechanical strengths as per the 'American Standard Pressure Equation'.
F39	Strainer area calculation	Strainer filter element open area ratio calculation to be provided by the VENDOR.
F40	Non slam check valve flow and pressure drop calculation	Non Slam Check valve flow verses pressure drop calculation/report for minimum, operating and maximum flow to be provided by the VENDOR.
F99	Miscellaneous	Calculations, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
G01	Data required for motor starting study	Speed torque characteristics of the motor at rated voltage, speed torque characteristic of load (a statement as to the process condition prevailing at the driven equipment for the curve shown), Inertia of the motor and load, for gear box application, the gear ratio and the Inertia of the gear box. Stator resistance (Ra), Stator reactance(Xs), Magnetizing resistance (Wr-), Magnetizing reactance (Xm), Rotor resistance(R1), Rotor reactance (X1) for dynamic modeling.
G02	Performance curves	Centrifugal compressor: Curves to indicate the discharge pressure, coupling shaft power, polytrophic head and efficiency versus inlet capacity for specified inlet pressure temperature and molecular weight for each section (casing) and overall unit. Curves shall indicate performance from surge through to 115% rated capacity. Units driven by variable speed drivers shall be provided with curves for the full range of speed operation. Curves of Mu versus Q/N and quadrant curves will also be provided. Guarantee points shall be clearly identified. Reciprocating compressor: VENDOR performance data and calculations including the following: 1. Performance curves or tables displaying power, capacity and pressure 2. Gas load, rod load and crosshead load reversal and duration charts for all stages and specified conditions of operation and all available load steps. 3. Primary and secondary unbalance forces and moments with information on component weights and counter-balance weights, as appropriate. 4. Flywheel sizing calculations with information on moments of inertia of all components and the expected torque curves for all conditions of unloading and operation. 5. Expected resulting speed and current variations. Centrifugal pumps: Curves to indicate differential head developed efficiency and absorption power, versus flow with any velocity corrections for rated impeller. Units driven by variable speed drivers shall Rotary pumps: Curves shall indicate discharge pressure, NPSHR and absorbed power, versus inlet flow including velocity corrections. Reciprocating pumps: Differential, pressure, shaft input power efficiency & NPSHR over the range for variable stroke pumps of operation with stroke length. Curves shall indicate pressure rise, efficiency, and power absorbed, versus inlet flow for specified inlet pressure, temperature and molecular weight. Curves shall also indicate performance from surge to 115% rated capacity. Fans with variable pitch screws shall indicate performance for five settings between maximum and minimum. Guarantee points shall be clearly identified.
G03	Electrical Equipment Motor/Generator performance curves	1. Curves to indicate torque and current against speed for 80% and 100% voltage rated conditions. Driven equipment torque shall also be plotted to confirm that there is adequate net torque for acceleration. 2. Curves to indicate the efficiency and power factor against % of rated output with value of starting power factor.
G04	Computer system documentation/ manual	This shall include the following as a minimum. 1. System VENDOR manuals for hardware and software. 2. Detailed configuration database. 3. Graphic display software. 4. Application software for the project. 5. Operating system software details.
G05	General performance data for HVAC items	For HVAC chillers, condensing units and condensing fans : 1. Chiller data sheets with capacity, power consumption etc. 2. Performance curves for compressors, fans etc. 3. GA Drawings with point load details 4. Motor details 5. Control panel details 6. Electrical wiring diagram For AHU coils, fan coil units : 1. Data sheets with details of filters, coil, fan etc. 2. Performance curves. 3. Dimensional drawings showing sections and components 4. Control panel details 5. Electrical wiring diagram

Document Codes for SDR

		For standalone and AHU mounted humidifiers : Define selection procedure, temperature/humidity range details, water supply and drain connection and electrode details. Dimensional drawings For heaters duct and AHU mounted types: Electric heaters selection procedure, type and capacity of electrodes, material construction.
G06	Catalyst performance data / guarantee	Performance data/guarantee of catalyst for the design condition.
G07	SIL related data	SIL related data like PFD, Safe failure fraction etc. which are required for SIF loop evaluation are to be provided.
G99	Miscellaneous	Documents, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
H01	Weld Map & NDE plan	For all vessels, tanks and other fabricated items, the following information shall be shown: All dimensions with tolerances , Plate layouts Weld joint design, Weld procedure specification reference for each and every weld, NDT requirements for each joint ,Number of nozzles, Internal details & nozzle locations and orientations When applicable, weld location plans shall be verified by the Contractor and/or third party inspection authority.
H02	Weld Book (WPS-PQR Register + Weld Map + WPS & Supporting PQR)	Weld Book Shall contain 1. WPS-PQR Register, 2. Weld map, 3. WPS & supporting PQR, It shall be a single document under H02 Define all shop, field and repair welding procedures (WPS) in accordance with Contractor's requirements. WPS shall be cross-referenced to the applicable weld map (All dimensions with tolerances , Plate layouts Weld joint design, Weld procedure specification reference for each and every weld, Number of nozzles, Internal details & nozzle locations and orientations) and weld procedure qualification (WPQ). Weld book including all applicable WPS documents shall be issued in a single submission, together with the WPQ and a listing register to show status of approval. Qualification records describe parameters used in qualification of weld procedure specifications (WPS) together with mechanical testing and results in accordance with Contractor's requirements. WPQ test records are to be cross-referenced to the WPSs and when applicable stamped by the third party inspection authority. Fabrication shall not commence before the appropriate weld procedure has been approved by Contractor . For site construction pre fab WPS/PQRs, an Engineering weld data sheet involving each line class ,fluid service, type of materials, thickness and diameter ranges, design temperatures, applicable WPS/PQRs, applicable welding construction code etc. shall be made and this shall be a master index of the all WPS/PQRs. Cladding , weld overlay procedure where applicable including repair procedure. Weld repair procedure .
H03	Non-destructive examinations procedures (NDE)	Define method, extent and acceptance levels of all NDE used to verify that materials and/or formed or welded fabrications comply with Contractor's requirements. To include, as applicable, visual, radiographic, ultrasonic, magnetic particle, dye penetrant, hardness tests and other techniques. Procedures shall give acceptance criteria. When applicable, procedures shall comply with the requirements of the third party inspection authority. Procedures shall also be cross-referenced to the weld location plan (VDRL Code J01).
H04	Hardness test procedure	This procedure shall describe the method of carrying out the Hardness testing of welds and HAZ on the production welds during the fabrication. It shall describe the equipment used, list applicable codes and specifications, location of hardness measurement, number of tests, procedures, acceptance criteria.
H05	Charpy impact test procedure / DWTT test procedure)	The procedure shall describe the relevant standard, type of impact test machines used, test temp, test specimen location (Base metal, HAZ, Weld metal), direction (transverse, longitudinal), orientation details, acceptance criteria for minimum impact values, minimum average values required, additional test requirements in case of failures etc.
H06	Surface preparation & painting / coating / FBE / insulation procedure	This shall include: surface preparation, paint application, coating application, FBE application, insulation application, inspection checks, shop or field painting, linings (where applicable), galvanizing (where applicable)
H07	Hydrostatic and / or pneumatic test procedures	Detailed procedures for compliance with Contractor's specifications, including duration of test, quality of test medium, confirmation of no leakage.
H08	Corrosion testing procedures	Detailed procedures for compliance with Contractor's specification, including control and calibration of electrochemical parameters, temperature preparation, method of data analysis, metallographic evaluation, acceptance criteria.
H09	Positive material identification (PMI) procedure	Procedure for Positive Material Identification of fabricated equipment and piping. The procedure shall specify the scope, extent of testing, calibration of the instrument, operator skill requirements, elements that can be analyzed, acceptance criteria etc.
H10	Flushing and Dry out Procedure	To detail method of flushing pipe work systems at work and site (e.g. lube, seal and hydraulic oil systems) including acceptance criteria.
H11	Trial assembly procedure	-
H12	Factory acceptance test & Performance test procedure	Procedures for final acceptance testing prior to testing. The procedure should define the order of sequential tests and where appropriate should include all elements defined in H13 below. Procedures for Performance test at works and site testing shall include the following: 1. Purpose of the test 2. P & ID or diagram with written description of test set-up. 3. Definition of all equipment to be used for testing, including tag numbers for Contractor's equipment. 4. Acceptance criteria for the test 5. Sample log for the reading to be taken 6. Full description of the method of calculating the results of their accuracy
H13	Weight control/ weighing procedure	This Procedure shall describe the method of carrying out the weight control/ weighing. It shall describe the equipments used, list of applicable codes and specifications, method of inspections, procedures and acceptance criteria.
H14	Holiday testing procedure	This Procedure shall describe the method of carrying out the holiday testing based on applicable code/standards/specifications. It shall describe the equipments used, list of applicable codes and specifications, method of inspections, procedures and acceptance criteria.
H15	Pickling and passivation procedure	Procedure prepared based on codes / project specifications indicating the test procedure, measurements & acceptance criteria.
H16	Dynamic balancing procedure	Procedure prepared based on code / project specifications indicating the test procedure, measurements & acceptance criteria.
H17	Ferrite test procedure	This procedure shall describe the method, location and acceptance criteria for checking ferrite content in the weld overlay.
H18	Site acceptance test procedure	Procedure prepared based on code / project specifications indicating the test procedure, measurements & acceptance criteria.
H19	Leak test procedure	Procedure prepared based on code / project specifications indicating the test procedure, measurements & acceptance criteria.
H20	Material control procedure	-
H21	Material colour coding , marking and traceability procedure	-
H22	Weld consumable handling procedure	This Procedure shall describe the method of dedicated personnel/storage/baking/issue- type, quantity/ re-use, detail of logs/records/register and handling welding consumables based on applicable code/standards/specifications. It shall describe the equipments used, list of applicable codes and specifications, calibration method and frequency of calibration and acceptance criteria.
H23	Lifting frame test procedure	Procedure prepared based on 3 rd party certification / code / project specifications indicating the test procedure, measurements & acceptance criteria.
H24	Vacuum Box Testing Procedure	Procedure shall include the procedures for Annular plate to bottom shell course joint and bottom joints as well, as per code / manufacturer's practice.
H25	Manufacturing procedure specification	Including qualification & production tests, Tube to tube sheet rolling/welding and repair procedure (if any), Forming and heat treatment procedures (if any) , Perlite expansion and Filling Procedure (if any).
H26	Cryogenic test procedure	-
H99	Miscellaneous	Material Engineering Data / Manufacturing & Test Procedures, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
J01	Type approval certificates	Certificate comply with the requirements stated in the type approval test procedure.
J02	Manufacture certificates, registration & ASME code stamp records	Certificate issued by the Certifying authority confirming that the manufacturer is authorized to use ASME code stamp and registered with Certifying authority.
J03	Certificate of compliance	Certificate issued by the VENDOR confirming that the product complies with the purchase order requirements.
J04	Weld overlay/cladding test reports	Weld overlay / cladding test report based on approved test procedure.
J05	Hazardous area certificates for E & I equipments	Compliance Certificate issued based on ATEX Directive or IECEx system requirements as applicable-Product complies with the hazardous area requirements of the project.
J06	Factory acceptance test reports & Performance test results (all disciplines)	Report on performance/functional tests carried out in the factory to demonstrate the equipment suitability to fulfill the duty specified. This report to include certificates as appropriate, tests for over speed, balancing, shaft mechanical and electrical run out, and vibration. FAT reports on electrical and instrument control equipment shall include high voltage pressure tests and insulation resistance certificates. Report shall include the following: Description of how test was conducted , Method of calculating results, Acceptance criteria Calculations of results taking into account the accuracy of the results, Log of test readings signed by Contractor's representative and third party inspection authority (when applicable) e.g. where applicable Vibration reports, noise report Complete unit/string test / package acceptance test report etc. specific to the equipment/product.
J07	Weight reports/ certificates	Certificate indicating actual weights after fabrication / manufacturing and confirm that the values are within tolerance.
J08	Dimensional control reports	Report issued by VENDOR confirming the actual overall dimensions, anchor bolt locations and tie-in connection based on final built skid / equipment.
J09	Material test certificates	Certificates in compliance BS EN 10204 latest edition where applicable.
J10	Welder & welding operator performance qualification certificates	This category to include all MTCs
J11	NDI operator qualifications	Welder's name, identification and positions to be recorded to code requirements with approval by third party inspection authority when applicable, using approved weld procedure.
J12	Pre production qualification and production test results (included welding)	Copies of Qualification Certificates for the technicians/operators' signing certificates. Results of tensile, ductility hardness and impact tests carried out on production tests. Certificates to state Contractor's purchase order number, tag number (or other unique identification) to permit traceability of testing equipment, item or piping system. Supplementary marked-up piping isometrics shall be included when necessary to define extent of testing, those being verified by the Contractor, when required.

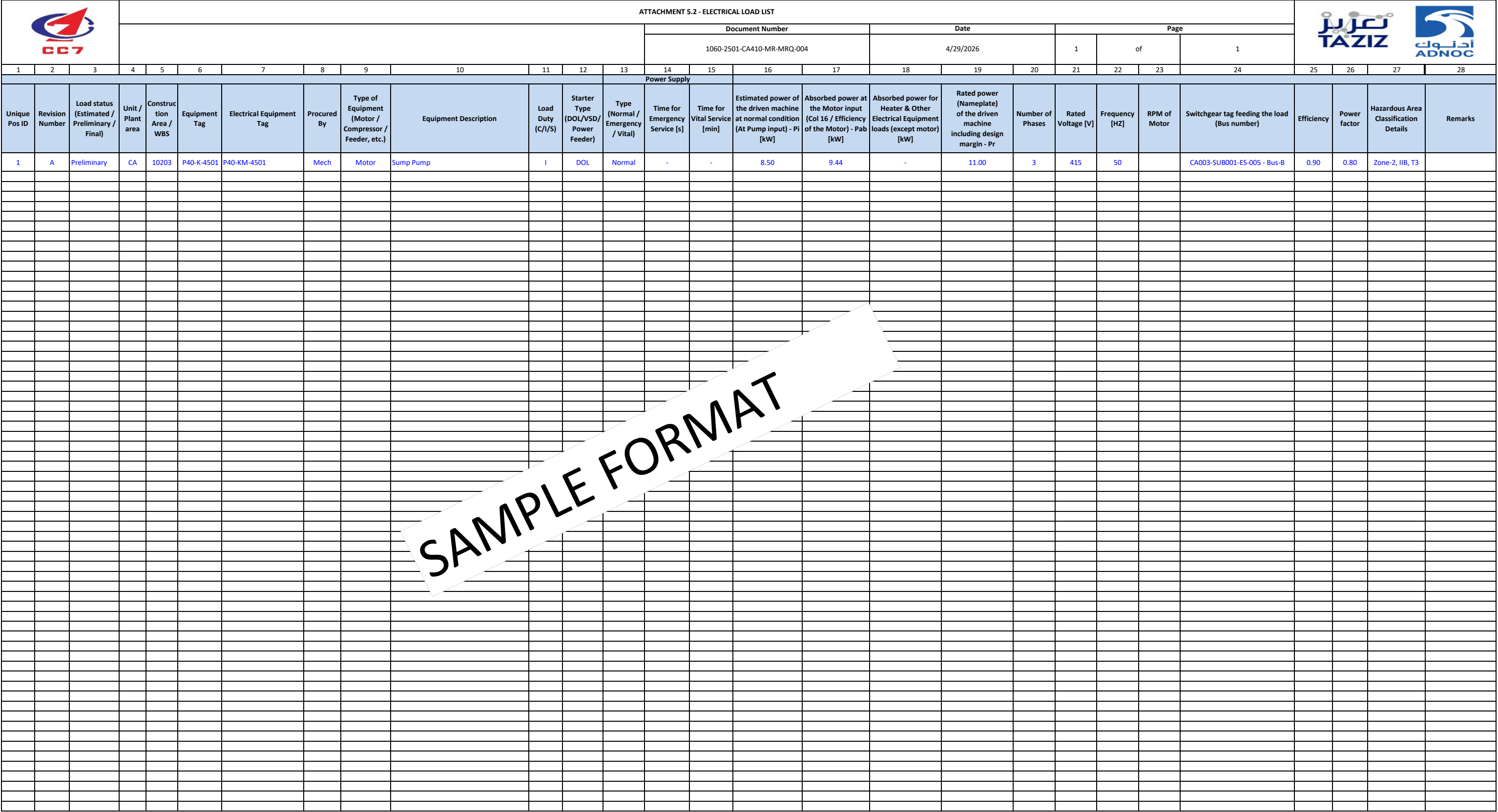
Document Codes for SDR

J13	Trial fit-up/ mock-up reports	Report covering trial assembly or mock up test for example Tube to tube sheet rolling/welding etc.
J14	Heat treatment records	Pyrometric charts or certificates confirming the heat treatment cycles have been conducted to Contractor's requirements. Certificates to state Contractor's purchase order number, item number and identification to permit traceability to the heat-treated component or materials.
J15	NDE records (VISUAL/RT/DPI/MPI/EDDY CURRENT)	NDE Records to confirm that acceptable results were obtained, stating equipment used, standards followed, operators name in accordance with code requirements.
J16	Material traceability records	Location plans/records with an identification system cross referring to the individual material certificates.
J17	Calibration certificate	When applicable, material placement drawings shall be verified by the Contractor and/or third party inspection authority. Calibration certificate for inspection, measuring and test equipment. Each certificate to state equipment serial number and calibration validity. Calibration certificate for procured process control instruments. Each certificate to state Project tag number, serial number, applicable parameters in accordance with data sheet.
J18	Rotor balancing report (dynamic/static)	Report indicating results / acceptance based on the approved rotor balancing procedure.
J19	Pressure test certificate (Hydro / Pneumatic/Leak)	Certificate of hydrostatic and/or pneumatic, Leak tests carried out.
J20	Cryogenic test report	Report indicating results / acceptance based on the approved test procedure.
J21	Proof load certificates	Test certificates for all lifting equipment; e.g. hoists, cranes, wire ropes, shackles, hooks, pulleys and lifting beams. Certification to be to Contractor's requirements and approved by the third party inspection authority, when applicable.
J22	Nameplate rubbing/ photo	1. Rubbing or copy of nameplate and/or stamping. 2. Required for pressure vessels, heat exchangers and atmospheric tanks. 3. Submission must be legible and exhibit equipment tag number.
J23	Inspection/ survey reports (including third party/ regulatory authority)	Report shall indicate in detail inspection activities carried out by seller and acceptance / rejection based on the inspection findings.
J24	Fugitive emission tests (prototype & production)	-
J25	Weld repair report	Report mentioning the location and results after an agreed weld procedure.
J26	Routine test certificates for electrical equipments	Certificate of routine tests carried out; e.g. no load losses, High voltage, insulation resistance, etc. when type tests have been carried out.
J27	Hardness test report	Report to verify that allowable values as per Contractors specifications have been met, and test is conducted as per procedure.
J28	Ferrite test report	Issued by VENDOR when applicable
J29	Charpy impact test results / DWTT test result	Issued by VENDOR; in many cases the charpy impact results are included in the Material test certificates.
J30	Operational torque test report	-
J31	Functional test reports	(This may be applied at Factory Acceptance or at site and may include part or whole of the item supplied depending on the application).
J32	Site acceptance test report	-
J33	SIL certificates With safety manual	Certificate issued by the certifying authorities confirming that the product complies with the safety integrity requirements as per IEC 61508, and provide safety manual
J34	NACE certification	Where NACE MR/01/75 is applicable, the statement of compliance and hardness results to be incorporated within the material certificate.
J35	Corrosion test reports :HIC test report, SSC test report, IGC test report	Certificate / report issued by the certifying authorities confirming that the product complies with the testing practice as specified in requisition/specification: HIC , SSC , IGC (as applicable).
J36	Mechanical run test report	
J37	Positive material Identification (PMI) Test Report	
J38	EC Declaration/CE Marking / PED Certification	EC Declaration of Conformity as required . Provide details of NoBo (if any Notified Body) involved in production process. If PED is applicable them NoBo shall certify for it.
J39	Preservation Records	Preservation log , records with details.
J40	Inspection Release Note	
J41	Non Conformance Report	
J42	Surface preparation and coating/ painting / FBE /Insulation inspection reports	Issued by VENDOR. The report shall include the evidence of surface profile check, i.e. tested profile paper pasted with report along with certificate of compliance to the relevant codes and standards. Certificate shall confirm compliance with painting/insulation specification requirements and include pertinent data with respect to surface preparation paint system applied number of coats, thickness, etc.
J43	Material Test Certificates for HVAC System Units and Sub-components	Material Test Certificates for the listed items.
J44	Hazardous Area E&I Inspection Report for Package Skid	Inspection report produced by third party agency. This may be on design review, on product manufactured, on performance / calibration/testing etc.
J99	Miscellaneous	Certification data / reports, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
K01	MRB index	An index of all documents to be included in this document. The index shall be submitted in advance of the main document (as indicated in the VDRL) to allow Contractor to evaluate the format and content of the main document.
K02	Manufacturing record book (MRB)	Shall contain as a minimum, ITP, Material certificates, hydrotest certificates, Hardness certificates, WPS, PQR, Painting certificate, driver Certificate, GA drawing, O&M index, Approved Concession requests, Balancing Certificates, etc.
K03	Technical installation operating and maintenance manual - index	An index of all documents to be included in this document. The index shall be submitted in advance of the main document (as indicated in the VDRL) to allow Contractor to evaluate the format and content of the main document.
K04	Technical installation, operating and maintenance manual	Manual shall include description of equipment, Installation Procedure, operating procedures for start-up including Set points, steady state, shut down, emergency and fault conditions, operating parameters, function of protective devices and controls, copies of all relevant cause and effect charts and block diagrams, and fault finding guidelines. Minimum data to be included as indicated in VDRL
K05	Certifying authority release note	
K06	Technical Passport Index (if applicable)	Specific to CIS requirement
K07	Technical Passport (if applicable)	Specific to CIS requirement
K99	Miscellaneous	Manufacturer Record Book (MRB) and other manuals, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor. Other requirements like Preliminary , Final dossier, Technical data file(compilation of datasheets, specifications and other technical data for approval from regulatory authority / government (e.g., ARH - Hydrocarbon Regulatory Authority of Algeria)) for Algerian projects.
M01	Schedule of manufacturer's commissioning spares (SPIR form)	List shall indicate parts recommended by VENDOR and be defined by reference to cross sectional drawings and relevant parts list. Against each entry, price and delivery shall be given. The VENDOR shall complete Contractor's Spare Parts List & Interchangeability Record (SPIR).
M02	Schedule of manufacturer's spares for 2 years operation (SPIR form)	List shall indicate parts recommended by VENDOR and be defined by reference to cross sectional drawings and relevant parts list. Each item shall be referenced by its original manufacturer's name & part number. Against each entry, number of parts in operation, price and delivery shall be indicated. VENDOR shall complete Contractor's Spare Parts List & Interchangeability Record (SPIR).
M03	Schedule of manufacturer's recommended insurance / capital spares (SPIR form)	List shall indicate parts recommended for insurance by Contractor and be defined by reference to cross sectional drawings and relevant parts list. Each item shall be referenced by its original manufacturer's name and part number. Against each entry, number of parts in operation, price and delivery shall be indicated. The VENDOR shall complete Contractor's Spare Parts List & Interchangeability Record (SPIR).
M04	Special tools list	List shall indicate those tools necessary for removing equipment from transport at site, plus those necessary for installation and maintenance equipment. Against each entry, a brief description shall be given and where necessary for clarify, a drawing shall be provided.
M99	Miscellaneous	Spares and maintenance data, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
N01	Packing Marking & Shipping PROCEDURES	Shipping, Packing and marking procedures must be adhered to determine the materials are going to ship as per local regulations and customs requirements , Also must follow the project specification and manufactures recommendations.
N02	Packing and shipping schedule/ list	For equipment shipping in more than one piece, a schedule is to be submitted which identifies all the major components of the package for use as a Check List at the receiving point to ensure all items have been received. Copy of document to accompany shipment.
N03	Hazardous material shipping certificate	In accordance with applicable regulations and requirements included in the Commercial Instructions to VENDORS. Typical Material Safety Data Sheets and TREM cards shall be provided in the main language of each country through which the goods will be shipped.
N04	Erection, Installation, Pre-commissioning and Commissioning procedures	Detailed description and procedures for installation of equipment to be supplied to be used at the fabrication site. Procedure shall include list of spare parts, special tools and utilities required, sequence of pre-commissioning/commissioning tests/checks to be performed on site and should include elements defined in sequenced procedure for start-up and fault guidelines. Copies of all relevant drawings shall also be included. This document shall also include detailed procedure of installing each Cathodic Protection material and complete procedure for testing and commissioning of Cathodic Protection system. The following information shall be included: 1. Lifting points 2. Lifting weights 3. Shipping break points for panels and switchboard assemblies 4. Erection match markings 5. Fixing points 6. Leveling procedures 7. Alignment procedures 8. Erection fasteners summary list 9. Details of any special unpacking/handling requirements shall be stated
N05	Detailed preservation and storage procedure	-
N06	Detailed handling procedure complete with special lifting gear	-
N99	Miscellaneous	Handling, Shipping & Site Installation data, not covered in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.

Document Codes for SDR

S01	Fire and gas detection system layout	If in the scope of VENDOR, the layout drawing indicating location and type of detector with coverage circles.
S02	Hazardous area layout	If in the scope of VENDOR, the layout drawing indicating hazardous area classification balloon around applicable equipments as per project specification.
S03	Safety validation plan/report	The SVP should cover 1. Compliance to IEC-61508 & IEC-61511 standards. 2. How Functional Safety Management will be implemented. 3. Safety Requirement Specification provided by Contractor. 4. How each phase in the Safety life Cycle will be implemented. 5. How Modification/Change will be handled and documented. 6. Typical Configuration of SIFs based on the SRS provided by Contractor. (E.g. Typical voting, relay configurations) 7. Reliability calculations for these typical. 8. List of all the assumptions made to calculate Proof test interval for the system.
S04	Reliability Availability, Maintainability(RAM)	Document represent reliability & availability calculation and block diagram of the proposed facility.It shall include assumptions, recommendations to improve availability.
S05	Safety Integrity Level(SIL) calculation(verification)	Study report representing outcome of SIL determination workshop or calculation performed as per recognized international standard or project specification
S06	Noise study	Document represents noise mapping/calculation for the facility and represent calculated noise contour in geographically on layout.
S07	Fire fighting Equipment Performance Data	Data sheets representing operating limitations like flow ,through, pressure. Movements etc.
S99	Miscellaneous	Safety documents, not covered above, that are required by the Contractor or identified by VENDOR for submission to Contractor.
Q01	ISO 9001:2008 certificate	For information only.
Q02	Inspection & test plan	Quality control plan shall be purchase specific, it shall contain as a minimum sequential activities including all test and inspections as well as associated 'hold', 'witness', 'surveillance', 'inspection/test' and 'review' points for all parties, the activity to be inspected, the attributes/characteristics to be confirmed, the applicable acceptance criteria, the procedure to be followed, the responsible party and the verification record.
Q99	Miscellaneous	Quality Documents, not in the above, that are required by the Contractor or identified by VENDOR for submission to Contractor.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102						
	ATTACHMENT 5 - UTILITY CONSUMPTION & ELECTRICAL LOAD LIST						
COMPANY PROJECT No. :	1060-2501					DATE:	19-May-2026
CONTRACTOR PROJECT No.:	25002					REV. No:	0
PROJECT:	PROJECT SALT						
MATERIAL REQUISITION NO.:	1060-2501-CA220-MR-MRQ-002						
MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)						
Fluid	Consumer	Flow Rate			Flow Rate Peak-1	Remarks	
		Min.	Normal	Max.			
Nitrogen							
Instrument Air							
Plant Air							
Cooling Water							
Steam (STL)							
Steam (STM)							
NG							
H2							
Service	AC or DC	Voltage	Phase	Frequency (Hz)	Operating Case	Consumption kW	Remarks
Vendor to fill all the applicable details and mention "NA" wherever data is not applicable. 1) Flow rates for gases shall be reported in Nm3/hr. 2) Vendor to provide utility consumptions on not to exceed basis 3) <u>Utility demand for decoking to be listed separately.</u>							





1) * Data to be furnished by Instrumentation (INS). Also any other requirement if mentioned in P & ID or elsewhere to be furnished by INS.

Notes :

** Data to be finalised for the project by Electrical and Instrumentation jointly.

Data to be furnished by Process (PRC).

2) Abbreviations for Rated Voltage : i) L = Low Voltage upto 1000 V, ii) H = High Voltage above 1000 V

3) Abbreviations for Safety Interlocks : i) V = Vibration Switch, ii) P = Pressure Switch, iii) B = Belt Sway Switch, iv) Z = Zero Speed Switch, v) C = Pull Cord, vi) L = Limit Switch

4) Abbreviations for Indications on Local Control Stations / Local Control Panel : i) O = ON, ii) F = OFF, iii) T = TRIP, iv) R = READY TO START V) N = Speed Indication

5) Signal to DCS/ESD : H = Hard-wired, S= Through soft link (Hard-wired signal contacts for Process trip and Emergency Stop shall be "fail safe" i.e. "open on fault". The purpose of each feedback signal to be defined by INS in the Remarks column). In case the signals are from ESD and DCS both the same needs to be identified separately.

6) Apart from the signals which are related to process consumers, general failures/ trip signals associated with Electrical system shall also be listed and agreed with INS/ PRC department for interface with DCS.
e.g. UPS, Battery Charger, Polarisation Rectifier, Power failure, DG set, FA system

7) Wherever Speed, Current or other analogue signal is required in DCS, EL to indicate the Range of parameter corresponding to 4-20 mA, in Remarks Column

8) INS to mark "Y (S)" where SIL requirements are required for relays in MCC feeders/VFD

9) Status : P=Preliminary and F=Final

10) In case of Caustic Chlorine projects, Interface Lists for Rectifier and Pol. Rect. (as per respective spec) shall be attached to this Op Mode List.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	Attachment-6 SUPPLIER QUALITY REQUIREMENT FORM (SQRF)		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	

Supplier QUALITY REQUIREMENTS		
COMPANY	: ADNOC- TAZIZ	Check Applicable Boxes
MATERIAL / INQUIRY / PURCHASE REQUISITION No.	: 1060-2501-CA220-MR-MRQ-002	
PURCHASE ORDER NO.	:	
INQUIRY ORDER TITLE	: Material Requisition for Chlorine Gas Compressor (CA221-KC-050/ CA222-KC-050)	
THIS DOCUMENT IS A CONTRACTUAL RECORD OF AGREED QUALITY REQUIREMENTS OF THE PURCHASE ORDER		
1. SUPPLIER QUALITY SYSTEM		
- The Supplier shall operate a Quality Management System which meets the requirements ISO 9001:2015 and ISO 9004, "Quality Management Approach" Standard together with any amendments/supplement's revisions thereto. Purchaser may opt to audit the systems prior to the placement of order. - CONTRACTOR and/or COMPANY reserves the right to audit the systems of Supplier or SUB-Supplier prior to the placement / during execution of the order. - Supplier shall provide access to the Purchaser / their nominated representative and COMPANY / their nominated Representative to all premises where manufacturing / fabrication is carried out, including those of his sub-supplier, for the purpose of audit, surveillance, inspection, or release. Required support should be provided during these visits.		☒
2. PRE-AWARD AUDIT BY PURCHASER / OR COMPANY		
- Pre-award Audits/Shop Audits will be undertaken based on any needs identified as a result of the reviews conducted on Supplier/Suppliers Quality Management System prior to contract award. The Project Quality Manager and /or Project Quality authority in charge shall predetermine the requirement of such audits based on reasonable evidence of major deficiencies to the Supplier's /Suppliers systems and controls. - The Pre Award Audit /Shop Audit shall determine the level of implementation and effectiveness of the Supplier's Quality Management System (QMS) and provide feedback on necessary corrective actions which shall be made a mandatory condition of award. - CC7 Purchaser QMS evaluation will be used during the audits to assess the Supplier /Suppliers QMS.		☒
3. POST AWARD AUDIT BY PURCHASER / OR COMPANY		
- Post-award audits shall be undertaken where preceding reviews/evaluations have indicated major deficiencies to the Suppliers/Supplier's QMS or where the criticalities of the equipment warrant an audit. Any additional or follow-up /post audits can be carried out at the request of CONTRACTOR. - Any additional or follow-up/post award audits can be carried out upon request of COMPANY. - Post order stage design audits will be conducted during engineering phase and quality audit during manufacturing phase as applicable - Company may be participating in post award Audits		☒
4. Supplier QUALITY DOCUMENTATION		
The Supplier shall submit the following documentation to ensure that inspection activities are substantially and effectively contributing to the quality. All inspections shall follow the Material Certification and Inspection Class requirements of the Purchase Requisition & Approved ITP		
Specific Project Quality Plan (Narrative Type)		☒
Inspection and Test Plan		☒
Quality Control (QC) Procedures		☒

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- The Supplier's Specific Project Quality Plan shall describe the application of the Corporate Quality System to the works, and any extension or adaptation necessary to meet the specified Contract requirements. The submission of the Supplier Corporate Quality Manual as a substitute for a Contract Specific Project Quality Plan shall not be recognized as fulfilling the Project Quality requirement. The submission of the specific Project Quality Plan shall be as per the schedule given in Supplier Document Requirement List (SDRL). The Table of Content (TOC) for the Specific Project Quality Plan shall be in accordance with the latest elements of ISO 9001 standard applicable to the Contract and Scope of Work. - The Supplier's Inspection and Test Plan (ITP) shall include space for Purchaser and COMPANY to advise inspection Hold/Witness points and whether the inspection will be by Sub-supplier, Supplier, Purchaser, or COMPANY. The level of inspection specified in the ITP shall reflect the Criticality Rating. The Supplier shall indicate on the ITP all surveillance that Supplier will carry out at Sub-supplier's activities. A typical Inspection & Test Plan is shown in Annex- 7. Suppliers shall submit their ITP in Project specific-template. Refer 1060-2501-ST000-QA-SPE-003 Appendix 2 - The QC Procedures shall be basically Supplier's procedures incorporating Contract/Purchase Order specific requirements. - The Supplier's ITP and QC Procedures shall have reference of "major" Sub-suppliers' Quality Control Plans and QC Procedures, as applicable. - The Supplier shall not start any fabrication activities without approval of relevant Inspection and Test plan and Procedures at least in code 2 without any major comments.	
5. KICK OFF MEETING (KOM)	
- Post-award kick off meeting required (At Purchaser's Home Office) - Purchaser will advise a mutually convenient date for the KOM - Refer 1060-2501-ST000-QA-SPE-001 as per sec 13.8 for details of KOM requirement.	☑
6. PRE INSPECTION MEETING	
- Pre Inspection Meeting shall be conducted for applicable PO as per requirement specified in 1060-2501-ST000-QA-SPE-001 as per sec 13.9 and Appendix-7 - Pre-Inspection Meeting required (At Supplier / sub-supplier works). Refer to Annex- 3 for details - Supplier shall provide an advance Inspection notice for Pre-Inspection Meeting as per Annex- 5 of this SQRF. The supplier shall notify Purchaser to attend PIM at least 4 Weeks in advance. - A Supplier Pre Inspection Meeting Check List of approved minimum submissions (as per Annex- 2 of this SQRF) shall be furnished by Supplier and Agenda shall be as per Annex-3 of this SQRF. - Fabrication/Production shall commence only after conducting the PIM. - Pre-Inspection Meeting requirements for Major SUB-Supplier will be agreed during KOM	☑

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7. NOTIFICATION OF HOLD/WITNESS POINTS TO THE PURCHASER Definitions For - A = APPROVE A point at which relevant documents or test results shall be approved by the Concerned party per the approved Inspection & Test Plan (ITP) prior to proceeding with further activities. - R = REVIEW A point at which relevant documents or test results shall be reviewed by the Concerned party per the approved Inspection & Test Plan (ITP) prior to proceeding with further activities - H = HOLD An Inspection point, at which the concerned party shall perform 100% inspection & clear the activity as per the approved Inspection & Test Plan (ITP). No further activities shall proceed without prior written permission. Inspection Notification is mandatory. - W = WITNESS (100%) An inspection point at which the concerned party shall witness the activity as per the approved Inspection & Test Plan (ITP); Inspection Notification is mandatory. The MANUFACTURER / VENDOR shall: • Not proceed the activity until the notification time agreed is lapsed. • Proceed with the activity if COMPANY abstained without any information. In this case, the CONTRACTOR shall inform COMPANY immediately via fax or e-mail. - WR: WITNESS RANDOM An inspection point at which the CONTRACTOR / COMPANY shall witness the activities as per the approved Inspection & Test Plan (ITP). Items selected at random from the inspection lot (of each specification and dimensions) that are to be witnessed as per the approved Inspection and Test Plan (ITP), witness point (as a minimum) shall be carried out. - M: Monitoring An Inspection point, at which the CONTRACTOR / COMPANY will visit any work to inspect the activity during processing as per the approved Inspection & Test Plan (ITP).	☒
- The Supplier shall provide a minimum of not less than 14 days' notice of planned inspection visits and not less than four (4) weeks' notice for Factory Acceptance tests (FAT) "hold" and "witness" points. - Inspection Notification Format shall be as per Annex-5 of this SQRF. - All the Inspection Notification & Look ahead schedule shall be as per the Requirements Stated in 1060-2501-ST000-QA-SPE-003 sec 5.5	
8. Deviations / Concessions	
- The Supplier shall issue the relevant forms to apply for Technical Deviations / Concessions, if any, and shall obtain CONTRACTOR / COMPANY approval prior to implementation.	☒
9. INSPECTION DOCUMENTATION	
Inspection documentation requirements are identified in the Supplier Document Requirements List (SDRL) attached to the Inquiry/ Purchase order. Any additional documentation required by the Inspection and Test Plan shall also be prepared by the Supplier. Inspection documentation, & MRB shall be compiled on an on-going basis and shall be available for audit or inspection by Purchaser's personnel and/or by their Nominated Representative as well as COMPANY or their Nominated representative at the Supplier's premises. All documentation shall be traceable, legible and in strict compliance with Contract and Project Requirements. All certificates/ Documents shall be in the English language or include an English translation. See Annex-6 of this SQRF for guidelines on submission of final documentation. Material Certification shall be in accordance with Project-Specification and relevant requirement of EN 10204:2004 as detailed below: The content of the MRB index shall be as per Annex-6 of this document. Documents/ Records for MRB shall be compiled on progressive basis. Suppliers shall obtain approval of MRB index prior to the inspection	

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10. CODE / CERTIFICATION

The supplier is fully responsible for obtaining all necessary third-party approvals as required in applicable codes as below (or any other code as applicable). The Supplier shall confirm with Purchaser, the applicable editions of the Codes to be followed. All specifications and publications shall be the current issue (latest version or edition) at the date of the Contract, unless otherwise specified.

☒ 3.2	☐ 3.1	☐ 2.2	☐ 2.1
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Certification requirements are marked as minimum required as per 1060-2501-ST000-QA-SPE-002 and refer to the MR Section of Material certification and datasheet

U Form - ASME Section VIII Division 1 ☒ U2 Form - ASME Section VIII Division 2 ☐ ASTM ☐

CENELEC ☐ / IEC/IECEX ☒ / ISO ☐ / UL ☐ / TEMA-R/C ☐ / API ☐ / Others (if Applicable) ☐

11. INSPECTION CLASSES & CRITICALITY RATING

As a minimum Purchaser shall carry out inspections(s) per the Inspection Class indicated below (for minimum requirements of Inspection Classes see Annex -4).

Inspection: Class I ☒ Class II ☐ Class III ☐ Class IV ☐

Criticality: Rating1 ☒ 2 ☐ 3 ☐ 4 ☐

Note: In case of the Inquiry / Purchase requisition having products with more than one inspection Class then it shall be addressed separately in an attachment to the SQRF

12. Attachments to SQRF

Annex - 1: Additional ADNOC Project Quality Requirements
Annex - 2: Pre-Inspection Meeting Check List
Annex - 3: Pre-Inspection Meeting Agenda
Annex - 4: Class of Inspection
Annex - 5: Inspection Notification
Annex - 6: Guidelines for Compilation of MRB
Annex - 7: Inspection and test Plan

Prepared:	Signature	Date:
Ahmed Shaikh	ASK	23-04-2026
QC Engineer		

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Annex 1 - to Supplier Quality Requirement Form

Project Quality Requirements

1. The following documents are required to be submitted by Suppliers as part of their bid package (the Purchaser shall be informed, if the Product or System is new to the Supplier):
 - All submittals required by Supplier Document Requirements List (SDRL).
 - Copy of ISO 9001:2015 or latest version certification of Quality Management System and a copy of Quality Manual.
 - List of proposed sub-suppliers/suppliers and their scope of supply.
 - Copy of typical Inspection and Test Plans, QC Procedures etc.
 - Copies of other approval certificates e.g., API 6D, API 5L, API 5LD, TUV etc.
 - Copies of Certificate of Authorization e.g ASME(U/U2/PP), API(s), ATEX, IECEx etc
 - Audit schedule for previous 12 months (planned and completed).
2. The following documents are required to be submitted by Suppliers post purchase order award:
 - All submittals required by Supplier Document Requirements List (SDRL).
 - Specific Project Quality Plan shall be submitted within 15 days from the effective date of PO Placement.
 - Inspection and Test Plan. The pro-forma/format for each inspection stage shall preferably be attached to the Inspection and Test Plan. See Attachment- 8 for a typical Inspection & Test Plan.
 - Quality Control Procedures.
3. Quality Control of Fabrication

Material certification, color coding, receipt inspection, storage and material issues shall be strictly controlled to exclude rogue materials from equipment, plant, and fabrications. The supplier shall organize the manufacturing processes so that material identification and traceability is ensured at all stages. The following shall be documented and implemented via auditable fabrication procedures:

 - Material Procurement – Suppliers purchase orders shall specify that component material certificates are shipped with suitably marked materials.
 - Material Certification and Identification – In general, material certification shall be in accordance with ADNOC specification and EN10204 or where specifically stated in the relevant COMPANY Publications. Suppliers' material receipt procedure shall include identifying that materials heat / lot / batch numbers are suitably marked on product and correlate with material certificates; Material certificates shall be in the original or certified true copy of the original attested by Mfr./ Processor or Inspector
 - The Supplier shall carry out Positive Material Identification (PMI) for all SS & Alloy Materials (of parent material & welds) as applicable and as per Guideline For Positive Material Identification of Equipment and Piping (1060-2501-ST000-QA-GDL-001).
 - Material Receiving Inspection and Testing – Supplier's receiving inspection procedure shall ensure that incoming materials are not used or processed until they have been inspected or otherwise verified; Verification of certificates against heat/batch numbers or other markings on Bulk Materials (piping, electrical, civil, etc.);
 - Material Storage – Materials shall be identified and segregated by material grade and stored above ground. Necessary precaution shall be taken to minimize contamination of all CRA materials; CS and SS/Alloys shall not be stored / packed in the same location or box.

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- Welding Consumables – Supplier's procedures for material receipt, identification traceability and tagging in addition to the baking, handling and control of welding consumables shall be submitted for Purchaser approval (as applicable) and shall be strictly followed.
- All material and welding consumables supplied by Supplier should be certified in accordance with Company requirements. COMPANY Standard requirements shall be followed for the Welding Procedure Qualification and Welder Performance Qualification.
- Fabrication / Assembly – Material grades shall be kept separate and identifiable in the fabrication / assembly shop until such a time that the fabricated / assembled item is complete and the likelihood of rogue materials being substituted is minimized.
- Good housekeeping shall be maintained on the production shop floor and storage areas.
- Cleanliness / Tightness / Preservation / Coating/ Packing / Transportation – All these requirements shall be indicated in Supplier's QC Procedures. Tightness requirements shall include flange protection, use of proper gaskets, employing correct torquing methods etc. Supplier shall give special attention to the cleanliness after hydro-test, any re-work needed at Site due to improper cleaning shall be at Supplier's cost.
- RT Films shall be electronically archived through as system such as radiographic digitalization for all fabrication and site construction activities which shall be in acceptable Quality level to the extent of COMPANY satisfaction and shall be following international norms and good practices, as applicable. RT Digitization is applicable for both Piping (shop and site Welds)
- Major/ Critical Welding repairs on pressure containing parts shall need Purchaser/Company approval.

4. Supplier Non-Conformance System

Supplier shall submit his non-conformance control procedure for approval to Purchaser prior to start of work. To enable Purchaser to verify Supplier Non-Conformance follow up and close out, Supplier shall issue a copy of all Suppliers internal Non-Conformance Reports to Purchaser within 2 working days of a Non-Conformance Report being raised. Where corrective action includes repair and or rework, Purchaser shall approve Supplier repair / rework procedures prior to Supplier commencing the repair and or rework in line with Project requirement.

5. Supplier Responsibilities

If a Supplier and/or Sub-Supplier audit is deemed necessary by the purchaser/COMPANY, the purchaser shall notify the Supplier accordingly. At a minimum, the Supplier and/or SUB-Supplier shall ensure the following

- Supplier shall be responsible for the Quality of the supplied materials or Equipment. The Supplier's responsibility may not be delegated without the express written consent of the PURCHASER's representative.
- PURCHASER/COMPANY shall be entitled to have their representatives present at all locations where Supplier and/or Sub-Supplier s are engaged in work at any time to review all aspects
- Suppliers shall provide all necessary equipment, access, labor, instruments and reference documents/drawings to enable the carrying out of such inspection and testing
- The monitoring and inspection by PURCHASER and COMPANY does not relieve the Supplier of the obligation to provide their own Assurance/ Quality Control and the provision of a guarantee for all materials, quality of workmanship and performance.
- If any inspection or test directed or performed by the PURCHASER and COMPANY, or by another party under the direction of the PURCHASER/COMPANY, reveals any defects in the Suppliers work, Supplier shall bear the cost of the inspection and testing required correcting such defects
- Any defects revealed at site due to manufacturing process shall be rectified by Supplier at no cost to PURCHASER within 2 weeks of notification.
- SUPPLIER shall provide full access to inspector, shall allow to take pictures and video necessary for presentation of the Inspection reports
- Supplier shall be held responsible for any damage incurred while items are under Supplier's possession during storage, shipping and handling.
- Responsibility for controlling sub-supplier lies with the Supplier irrespective of any inspection performed by or on behalf of the Purchaser or the COMPANY. It will also be the Supplier

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responsibility to ensure that all requirements relevant to the sub-order are accurately reflected and that all documents produced by their sub-vendors comply with the requirements of the Purchase Order

- Where a sub-supplier will be involved, the Supplier shall be required to distribute all the Purchase Order requirements, technical specification, and Project formats to the sub-vendor as part of the order to sub-vendor. The purchaser shall review sub orders to ensure relevant Purchaser / COMPANY requirements are passed on the sub-Suppliers.
- Supplier representative should be present at sub-supplier location for Inspection as per Inspection Test Plan (ITP)
- Supplier shall provide access to Purchaser / COMPANY Inspectors to take Photographs inspection related items during Inspection/Surveillance.

6. Inspection Release

Prior to the call for final inspection and product release, the Supplier shall ensure that:

1. All documents (drawings, data sheets, calculations, procedures, method statements) are approved by Purchaser.
2. Suppliers shall ensure that the appropriate preservation and protection measures have been undertaken.
3. All inspections, examinations, and tests as per approved ITP are completed with satisfactory results and documented.
4. All Test reports and material certificates are available, reviewed and approved. Suppliers to submit reviewed and approved manufacturing and test reports, prior to issuing the inspection (or shipping) release.
5. Product surface protection is complete (varnish, paint, coatings, insulation, fireproofing as applicable).
6. All Non-conformance Reports are closed out. (Supplier NCR's and Purchaser NCR's)
7. All outstanding technical queries, concessions, deviation requests are fully closed out by Purchaser and the inspector is aware of the final approved document status.
8. All Punch points must be closed by Supplier before issuing IRN where applicable. Any open points required Purchaser / Company approval.

Product inspection release shall be documented by Purchaser's inspector or representative on satisfactory completion of all activities including FAT, tagging/marking, preservation & packing. Inspection release note shall be issued by Project Quality Engineer. The shipping release process shall be initiated after the issue of the inspection release note.

7. Material certificates and Traceability

Material Test Certificates and Manufacturer Test Reports shall be traceable to each item within Supplier's manufacturing dossier and shall be part of QA/QC Data Book.

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Annex 2 – to Supplier Quality Requirement Form

Pre-Inspection Meeting Check List

(Checklist to be completed before Notification for PIM)

Project Title		EPC OF PROJECT SALT FACILITIES	Supplier		XXX	
Contract No.		XXX	Equipment			
Purchaser		CC7 EMIRATES ENGINEERING SOLUTION	Prepared by / Title			
Date			Proposed PIM Date			
Sr.	Select	ITEM	Rev.	Submitted (Yes / No)	Approval Status (By CC7 & “Company”)	Comments
1	☐	General Arrangement Drawings & Detailed Drawings, Engineering calculations				
2	☐	Manufacturing Procedures and Post Weld Heat Treatment Procedures (as applicable)				
3	☐	Supplier and Main Sub Supplier Specific Project Quality Plan (narrative), ITPs, Manufacturing Schedules etc.				
4	☐	Weld Maps identifying all the seams and applicable NDT for each seam.				
5	☐	WPS/PQR & Painting Procedure				
6	☐	NDT Procedures (RT, UT, MT, PT), Inspection personnel qualification & certifications, etc.				
7	☐	Positive Material Identification Procedure				
8	☐	Leak Test Procedures				
9	☐	Key Deliverables like FAT, IFAT procedures etc. as per approved ITP for all disciplines				
10	☐	Type Test certificate				
11	☐	Any other Procedures (as per Contract)				
12	☐	Sub supplier Lists				
13	☐	Technical Clarification/deviation /Concession Request, if any				
14	☐	MRB Index				

Notes:

- The above checklist is to be completed by the Supplier. The Supplier shall attach this list along with its notification for attending the Pre-Inspection Meeting (PIM). The relevant documents shall have approval status prior to holding the PIM.
- Definition of Terms:
 - ITP : Inspection and Test Plan
 - WPS : Welding Procedure Specification
 - PQR : Procedure Qualification Record
 - RT/UT/MT/PT : Radiographic Testing/ Ultrasonic Testing/ Magnetic Particle Testing/ Penetrant Testing
 - PO : Purchase Order
 - NDT : Non-Destructive Test
 - FAT : Factory Acceptance Test
 - IFAT : Integrated Factory Acceptance Test

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Annex 3 – to Supplier Quality Requirement Form
PRE-INSPECTION MEETING AGENDA

SUBJECT: PRE-INSPECTION MEETING

MEETING DATE:

CONTRACTOR: CC7 (To be updated as per Contract)

COMPANY: ADNOC-TAZIZ (To be updated as per Contract)

LOCATION:

SUPPLIER:

The Following items (as a minimum) shall be discussed and concluded during the PIM. CONTRACTOR /VENDOR shall prepare and submit the records of meeting notes to COMPANY Review and endorsement.

- 1) HSE induction; HSE program, HSE policy and Safety Moment.
- 2) Introduction of participants; PIM Objectives, Brief Overview about VENDOR Organization
- 3) Review of Purchase Orders & Appendices to verify completeness and confirmation to contract specifications, procedures, drawings etc.
- 4) Acknowledgement of P.O by VENDOR, Review Salient Sections of Purchase Order and verify scope of supply, Review specifications, codes, standards procedures.
- 5) Records of formal exceptions/deviation taken and agreed to the purchase order
- 6) Review of Production Schedule, and Inspection Look Ahead Schedule.
- 7) Quick Shop tour by all participants.
- 8) Confirm contacts and methods of communication for Inspection Notification for Hold & Witness points, Witness Random. Discuss process of issuing Inspection Notification.
- 9) Review of VDRL Documentation against VENDOR Document register and their approval. Include status review of sub-VENDOR documents.
- 10) Discussion on CONTRACTOR and/or COMPANY comments on PQP, if applicable.
- 11) Discussion on CONTRACTOR and/or COMPANY comments on the Project specific Organization Chart for Quality.
- 12) Inspection and Testing. Testing requirements vs. capabilities, Raw Materials, Sub-VENDOR processes & manufacturing / testing locations.
- 13) Review of implementation of MANUFACTURER/ VENDOR'S Quality System, Organization, Control & adequacy on Sub-VENDORS, Verification of QMS/ASME/API certification as applicable.
- 14) Discussion on CONTRACTOR and/or COMPANY comments on the Personnel qualifications against the applicable standards and specific project requirements if any for Welding, NDE, Painting, and IECEx Certification.
- 15) Discussion on CONTRACTOR and/or COMPANY comments on the Manufacturing Procedure Specification and Qualifications (if applicable).
- 16) Review & discuss on approved sub-VENDOR list against COMPANY AVL (No deviation to the AVL is permitted), Identify the communication of Project Specifications to Sub-VENDORS, Review the control exercised on Sub-VENDOR. Review Sub-VENDOR scope, ITP and release mechanism.
- 17) Use of Stock items if any List of stock items, source of stock items.
- 18) Certification Requirements for PO Material.
- 19) Review and Final Mark Up of MANUFACTURER/ VENDOR Inspection and Test Plan, confirm it covers full scope of supply and confirm Hold, Witness, Surveillance Points, reference and acceptance criteria including applicable reports and certifications.
- 20) Discuss process in event of Concession being required/requested.
- 21) Discuss Process in event of issue of Non-conformance, Disposition of any Non-Conforming Product.
- 22) Repair & Information to purchaser and approvals.

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- 23) Project/ PO Audit at VENDOR/Sub-VENDOR Location during execution.
- 24) Any language and translation issues. All documents to shall be in English.
- 25) Review requirements for Manufacturing Record Book (MRB) and electronic Deliverables. MRB Index Approval Hardcopy & Soft Copy.
- 26) Verify Specific Inspection and testing requirements such as NDE/PMI/Ferrite/Heat treatment/ Painting/Helium leak testing/FE testing/FAT requirements, Storage, Preservation and Packing, base line survey, etc.
- 27) Third Party Inspection/ Resident Inspector and their access at VENDOR and Sub-VENDOR Location, also provide office and communication means.
- 28) SPIR (Spare Parts Interchangeability Record) forms to be filled by VENDOR complying with COMPANY requirements.
- 29) Discuss Inspection release and Punch listing requirements and formats to be used during Inspection,
- 30) Quality surveillance tour covering manufacturing facilities, testing facilities, Material traceability, handling and storage and checking of Calibration status of Measuring and test instruments.
- 31) Review of latest QMS Audit Report, Review of Lessons Learned etc.
- 32) Areas of Concern, and any other business
- 33) Produce Report/Minutes Recording Pre-Inspection Meeting and forward to Project Office

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Annex 4 – to Supplier Quality Requirement Form

Class Inspection

The minimum requirements for Inspection Classes generally are but are not limited to those stated below. The exact details shall be as per the approved Quality Control Plan/ ITP/Project Specifications

A. Class I

Full stage inspection carried out progressively from commencement of manufacturing to final acceptance and shall include:

- Attend Pre-inspection Meeting
- The following inspection activities shall be carried out for review /witness and hold based on the COMPANY approved ITP.
- Inspect raw material and review related documentation including certification. Review and endorse all Drawings and Design calculations where applicable.
- Inspect prefabrication -- layout, cutting, forming, machining and other preparations.
- Inspect fit up, alignment, and assembly.
- Stages Wise Inspection: Review & Verify WPS/PQR/WQR, Review NDE operators' qualifications to ASNT level 2, Review and Witness NDE procedures, Review Radiographic films and provide Interpretations, Review and Verify any other special processes.
- Inspect internal cleaning.
- Perform in-process and final dimensional checks for size, location, orientation and configuration
- Witness acceptance testing (hydro, performance, NPSH, etc.)
- Perform final visual check.
- Examine paint/coating preparation and final surface condition.
- Inspect painting, tagging and prep for shipment.
- Review QC documentation package - including concession requests.
- Review and endorse final ITP, all quality activities and test certificates

B. Class II

Specific stage inspections of a piece of equipment or materials or random batch inspection of bulk materials during manufacture and final inspection of equipment prior to shipment and shall include:

- Attend Pre-Inspection Meeting
- The following inspection activities shall be carried out for review /witness and hold based on the COMPANY approved ITP.
- Inspect raw material and review related documentation including certification.
- Inspect fit up, alignment, and assembly
- Witness/verify NDE, welding and other special processes
- Inspect internal cleaning
- Perform in-process inspection as needed
- Perform final dimensional checks for size, location, orientation and configuration.
- Witness acceptance testing (hydro, performance, NPSH, etc.)
- Perform final visual check
- Examine paint/coating preparation and final surface condition.
- Inspect painting, tagging and prep for shipment
- Review QC documentation package - including concession requests

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C. Class III

Final condition or 'As Built' examination(s) and test(s): Inspection may be on one or more pieces of equipment or on a random batch selection of bulk materials and shall include:

- Informal Pre-Inspection Meeting(If Required)
- The following inspection activities shall be carried out for review /witness and hold based on the COMPANY approved ITP.
- Perform final dimensional checks for size, location, orientation and configuration.
- Review acceptance testing (hydro, performance, NPSH, etc.) See Note 2.
- Perform final visual check

D. Class IV

Review and acceptance of the Manufacturer's or Supplier's inspection records including material test certificates.

 ADNOC Classification: Internal	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
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Annex 5 – to Supplier Quality Requirement Form

Inspection Notification

Item Description:		Inspection Level:		Notification No.:
				Date:
From:		Fax No.:		E-mail:
Notification To:				
	Designation	Name	Fax No.	E-mail
COMPANY	☐			
	☐			
	☐			
CONTRACTOR	☐ Inspection coordinator			
	☐ Project Engineer			
	☐ Project Quality Engineer			
	☐ TPI Representative			
	☐ Project Quality Manager			
* Detailed Description of the item under test to be mentioned below:				
ITP reference number:		ITP Activity Numbers/Stages offered:		
Type of Inspection: ☐ Pre-Inspection Meeting ☐ Stage- Inspection ☐ Factory Acceptance Test ☐ Final Inspection				
Details of Inspection:				
Notice:		☐ Preliminary Notice ☐ Final Confirmation		
Inspection Location:		☐ P. O. (Main) ☐ P. O. (Sub)		
PURCHASE ORDER (MAIN)			PURCHASE ORDER (SUB)	
Main Supplier :			Sub Supplier :	
P.O. No. :			P.O. No. :	
Address :			Address :	
Contact Person :			Contact Person :	
Phone :			Phone :	
E-mail :			E-mail :	
Fax :			Fax :	
Inspection dates :			Inspection dates :	
Inspection & Test Plan Ref. :			Inspection & Test Plan Ref. :	
Item/Material :			Item/Material :	
Final Inspection / Stage Inspection			Final Inspection / Stage Inspection	
CONTRACTOR: ☐ Hold ☐ Witness			CONTRACTOR: ☐ Hold ☐ Witness	
COMPANY: ☐ Hold ☐ Witness			COMPANY: ☐ Hold ☐ Witness	
COMMENTS:				
NOTE: REVIEW OF DOCUMENTS FOR PREVIOUS STAGES AS PER ITP SHALL BE OFFERED DURING THE ABOVE INSPECTION/TEST TO CONTRACTOR INSPECTOR AND COMPANY INSPECTOR.				

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	SUPPLIER QUALITY REQUIREMENT FORM (SQRF)		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	

Annex 6 – to Supplier Quality Requirement Form

Guidelines for Compilation of MRB

Within two-four (2-4) weeks of purchase order award, the Supplier shall submit to CONTRACTOR a proposed "MRB Index".

The MRB shall contain at least, all documents as agreed and not limited to, the following items:

1. Purchase requisition including data sheets.
2. Purchase order "PO" (un-priced)
3. As-built drawings and shall be provided with review, validate, and approval provisions.
4. Design calculations provided with review, validate, and approval provisions.
5. All documents as per agreed list i.e. Data sheets, GAD's, and drawings etc.
6. Inspection and test plans (ITPs).
7. Manufacturing procedure specifications (MPS).
8. Welding logs and weld maps.
9. Welding procedure specifications (WPS's) and procedure qualifications records (PQR's).
10. Non-destructive test (NDT) procedures / records.
11. Hydrostatic / pressure test procedure / records.
12. Leak tightening / pneumatic, fugitive emission tests ...etc., procedures (as applicable)
13. Heat treatment procedure / records
14. Painting / coating records and test certificates.
15. Cathodic protection system, as-built documents, and all related testing and commissioning records (as applicable)
16. Material test summary and traceability supported with Material Test Certificates (MTC).
17. Testing procedures and test results
18. FAT / SAT (Factory / Site Acceptance Tests) procedures and certificates.
19. All Schedules, Spare List, Preservation Procedures, Operation and Maintenance Manual
20. Sub-orders index and orders.
21. Inspection release notes (IRN).
22. Master log / register of NCR's and analysis of NCRs.
23. Technical deviations (TDs).
24. Packing, preservation, & handling procedure.
25. Final product certificates such as "Certificate of Conformity".

Close out report including all Quality concerns and all lessons Learned covering both positive and negative aspects. Within three (3) weeks of issuing final IRN, the Supplier shall submit to CONTRACTOR the final MRB as per the approved index.

- All documents forming part of the Manufacturer Data Book are to be provided both in the original native format (e.g. Word, Excel, CAD, etc.) and in PDF format.
- PDF files shall be generated from the native files, shall be fully searchable, and include bookmarks that reflect the structure and contents of each binder.
- The first page of each PDF shall be signed (scan of wet signature or acceptable digital signature).
- Where the Manufacturer Data Book for one item of equipment is split into several binders, one separate bookmarked PDF file shall be issued for each binder.
- One (1) complete hard-copy set of the Manufacturer Data Book shall be provided in binders, as part of the mandatory documentation required by ADNOC.
- In addition, a complete electronic set of the Manufacturer Data Book (PDF and native files) shall be delivered on portable SSD(s), in accordance with the applicable MDR / Vendor Document Requirement.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	SUPPLIER QUALITY REQUIREMENT FORM (SQRF)		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	

The final documentation shall be compiled, into Manufacturing Record Book (MRB), as below:

- The MRB shall include all documentation relating to the manufacturing/production processes involved in the supply of the equipment or material, such as, analysis of raw materials, production inspection and testing reports, expediting and shipping and correspondence related to the above. One MRB containing original or certified as original documents is required and 2 sets of hard copies.
- The MRB shall be compiled as per the approved MRB index.
- The electronic/CD-ROM/DVD/Portable Hard Discs (10 copies) formats shall be submitted
- All the documents which require to be included in MRB, will be included in SDRL
- Optical Character Recognition (OCR) shall be applied for MRB where possible to enable search within the PDF file.
- Hard copies of MRB shall be submitted only after the approval of Electronic copies without any comments.
- The documents included in the MRB shall be original or certified original endorsed by Supplier Quality Engineer.
- All ITPs and procedures included in the MRB shall be in revision 1 approved in code 1.
- Two (2) weeks prior to start of fabrication, the Supplier shall submit the index of MRB and for Purchaser's approval. The contents and details of this final documentation shall be discussed at the Pre-inspection meeting (if held).
- The final documents shall be compiled progressively during the course of the manufacturing program. These documents shall represent the product in the as-built condition and shall be submitted to Purchaser for review and approval, upon completion of all manufacturing and test activities.
- MRB shall be presented to the Purchaser's inspector for acceptance during the final inspection of equipment/materials. The technical acceptance of equipment/materials at the final inspection stage shall be withheld, if the MRB has not been presented for acceptance in time.

Hard Copies requirements

Hard copies of all handover documentation must be on Metric size paper and bound in sturdy white binders. International standard sizing listed below shall be applied.

<u>SIZE</u>	<u>DIMENSION (mm)</u>
A4	210 X 297
A3	294 X 420
A2	420 X 594
A1	594 X 841

All documentation presented as print material shall utilize paper of suitable quality for long term storage (minimum acceptable quality of paper: 80 g/m²). All documentation shall be of a suitable quality to provide clear, legible reproduced copies and shall be suitable for microfilming.

All documentation shall be bound in A4 size binders. Drawings shall preferably be reduced to A3 size; however, if larger size drawings are required for clarity, they shall be folded and placed in clear plastic sleeves within the binders. The binders shall comprise:

- Strong white plastic covers. Plastic sleeves (for storage of large size drawings within binders) shall be subject to COMPANY approval.
- Transparent jackets for identification labels to be used on the spine and cover sheets. Binder cover sheet and spine identification label layouts shall be submitted for COMPANY approval. Identification labels shall include COMPANY name & logo, PROJECT title and no., PURCHASER/CONTRACTOR name & logo and folder number.
- 4 post binders for all manuals except the following, which shall be in 4-ring binders.
 - Inspection Report
 - Inspection Release Notes
 - Corrosion Control Manuals

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	SUPPLIER QUALITY REQUIREMENT FORM (SQRF)		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	

- Safeguarding memorandum
- Field Material requisitions/P.O.'s/Certificates
- Sub-contracts and Service Agreements
- Construction Mechanical Completion
- Damage Reports
- PROJECT Closeout Report

- Tag Nos. shall be clearly written on all drawings (where applicable).
- The binders shall be robust and not susceptible to distortion by impact during shipping. The binders shall not be overfilled / under-filled and shall contain only a suitable number of documents to enable convenient handling.
- Each volume/book (including documents, drawings etc.) shall include a volume (MASTER) index and sub-index for ready reference. The sub-index shall contain the index of all sections/items included in the particular volume/book including main tag numbers where applicable.
- PURCHASER's proposed indexing system shall be submitted to PURCHASER/COMPANY for review and approval.
- Only complete documents shall be filed within any volume (no carry over to next volume).
- Tag numbers shall be indicated on the binder cover for each volume/ book (where applicable).
- Details such as SUPPLIER/VENDOR name, Purchase Order No. & title shall be shown on binder covers for SUPPLIER/VENDOR documents in addition to the above requirements.
- Plastic dividers shall be used to separate the sections of documents/ data. Cardboard dividers are not acceptable.

CD-ROM/DVDS and/or laser discs of handover documentation must be fully indexed and must contain built-in intelligence for interactive navigation. These discs should retain any "smart" features of the original files.

Sample proposed binders shall be submitted for PURCHASER/COMPANY approval.

A user guide and on-line help shall be provided for the electronic final handover documentation package on CD-ROM/DVD. The CD-ROM/DVD package shall be delivered with a complete hard copy of the final documentation index that identifies the CD-ROM/DVD number for each item in the index. All CD-ROMs/ DVDs that form part of the final handover documentation package shall be verified by CONTRACTOR as being virus free at the time of handover and shall contain details of the virus scanner and virus definition files used.

CD-ROM/DVD and CD-ROM/DVD case identification label layouts shall be submitted for PURCHASER/COMPANY approval. CD-ROM/DVDs of final handover documentation shall be demonstrated on-line for COMPANY acceptance

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	SUPPLIER QUALITY REQUIREMENT FORM (SQRF)		
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	

Annex 7- to Supplier Quality Requirement Form
INSPECTION AND TEST PLAN (TYPICAL)

INSPECTION & TEST PLAN												
  		CUSTOMER: PROJECT NO:					PO. NO.:- MR NO.:- PO Item No:- Machine Tag No:- Machine Type:-				ITP NO. :	
											REV. NO:-	
											DATE :	
											INSPECTION CLASS:	
Sr. No	Component/Operation	Characteristic	Type of check	Extent of Check	Ref. Document	Acceptance criteria	format of record	Supplier /Sub-supplier	EPC	COMPANY	Others (As applicable)	Remarks
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
NOTE : H = Hold, A= Approval W = Witness, RW=Random Witness R = Review, M – Monitor EPC = Engineering Procurement Construction												

Note: Vendor shall submit the ITP on post order in project specific format for review and approval by contractor and company in accordance with company specifications and requirement.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102			
	ATTACHMENT 7 - TECHNICAL OFFER COMPLETENESS CHECKLIST			
COMPANY PROJECT No. :	1060-2501	DATE :	19-May-2026	
CONTRACTOR PROJECT No.:	25002	REV. No.:	0	
PROJECT:	PROJECT SALT	VENDOR :		
MATERIAL REQUISITION NO.:	1060-2501-CA220-MR-MRQ-002	OFFER REF.:		
MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)	OFFER DATE:		
Vendor to note: It is mandatory to furnish the below details along with offer, else their offer shall be termed as incomplete, and may be liable for rejection.				
Sr. No.	Description	Expected Reply	Confirmation by Bidder	
1.	Duly filled-in Scope of Supply and services (Attachment -1 of this MR) in the format given in this Requisition	Submitted		
2.	Duly filled-in data sheets (including performance curve - as applicable) for all items	Submitted		
3.	Equipment GA Drawing (with dimensions and civil load data) indicating the arrangement of various units and auxiliaries.	Submitted		
4.	Motor data sheet from motor supplier and Duly filled-in Appendix 2. Datasheet Templates for LV / MV Induction Motor of ADDENDUM TO (1060-EL-SPE-009) SPECIFICATION FOR MV AND LV INDUCTION MOTOR (1060-2501-ST000-EL-SPE-009)	Submitted		
5.	Characteristic curves for Motors	Submitted		
6.	Valid Test certificates for motor	Submitted		
7.	Preliminary list of I/O s	Submitted		
8.	List of sub-VENDORS in line with COMPANY approved vendor list	Submitted		
9.	ISO 9001 Certification	Submitted		
10.	Piping & Instrumentation Diagrams (Compressor process PID, Lube oil system PID, Dry gas seal and seal system PID, Machine Condition Monitoring system PID, as a minimum)	Submitted		
11.	Utility Consumption & Electrical Load List (per Attachment 5 of MR) including all motor, heater rating etc.	Submitted		
12.	Spares list (as per spare parts requirement)	Submitted		
a.	Commissioning and Start-up spares	Submitted		
b.	Insurance spares quoted, as per the requirements in this Requisition	Submitted		
c.	Two years operational spares	Submitted		
13.	List of special tools	Submitted		
14.	List of sub-vendors for bought-out items (as per the project vendor list, wherever applicable)	Submitted		
15.	Compliance with the Performance guarantees as per the specifications	Submitted		
16.	Supervision of erection & commissioning – per diem charges	Submitted		
17.	Electrical documents required as per enquiry specifications	Submitted		
18.	Compliance to Inspection and Testing requirements as specified in the enquiry documents.	Submitted		
19.	Proven Track record / Past installation reference list in the format (Attachment -10 of this MR) attached with the MR. List of past projects of similar applications done.	Submitted		
20.	Consolidated Deviations / Clarifications list in the project specific format (Attachment 3)	Submitted		
21.	Equipment selection as per the hazardous area classification	Submitted		
22.	All Attachments Of 1060-2501-CA220-MR-MRQ-002 - Material Requisition for Chlorine Gas Compressors (API 617 Compressors) (Signed and Stamped)	Submitted		
23.	Proposal ITP's (Signed and Stamped)	Submitted		
24.	Technical Catalogues	Submitted		
(Signature of Vendor) Name: Designation: Date:				
(Company Seal)				



ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C
EPC OF PROJECT SALT FACILITIES
AGREEMENT NUMBER: 4700028102

ATTACHMENT-8: TECHNICAL QUERY FORMAT



COMPANY PROJECT No.:	1060-2501
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1060-2501

CONTRACTOR PROJECT No.:	25002
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25002

PROJECT:	PROJECT SALT
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PROJECT SALT

MATERIAL REQUISITION NO.:	'1060-2501-CA220-MR-MRQ-002
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'1060-2501-CA220-MR-MRQ-002

MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)
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MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)

TBE NUMBER:

DATE:	19-May-2026
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19-May-2026

REV. No:	0
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0

VENDOR NAME:	
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QUOTATION NO.	
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QUOTATION REV.	
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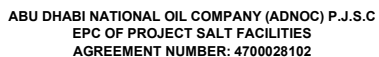
QUOTATION DATE:	
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INSTRUCTIONS FOR COMPLETING 'SPARE PARTS LIST AND INTERCHANGEABILITY RECORD' (SPIR) FORM	
NOTE: CONTRACTORS, or SUPPLIERS under CONTRACTOR'S supervision, shall fill-in the provided COMPANY'S - SPIR Template provided in ATTACHMENT-9, except columns 16 and 18, in accordance with the following instructions, attach copies of all the referenced technical documents and drawings and supply three (3) sets in hard copy. Supply of soft copies and additional hard copies shall be as per PO / CONTRACT clauses. SPIR form should be in size A3 and filled in English language. The SPIR forms for a package should be grouped manufacturer-wise and into electrical, mechanical, instrumentation and control equipment, valves, piping / pipe fittings and other general items. More than one line can be used to input the relevant data / descriptions.	
Column	Descriptions
1	EQUIPMENT COMPANY - TAG NO. Enter the equipment number or tag number of equipment / Item as registered in COMPANY - P & I Drawings and / or as stated in the ITT / PO / SO / CONTRACT
2	EQUIPMENT MODEL / TYPE Manufacturer's name, model, type or other positive identification reference of the equipment / Items as ordered and supplied. Refer to "Reminder 2" of the SPIR form in this regard.
3	EQUIPMENT SERIAL NO. Manufacturer's serial number or other control reference of the equipment / Items as ordered and supplied.
4	NO. OF UNITS Total number of pieces of identical equipment / Items as indicated in columns 1 to 3 and are part of the supply / scope of work.
5	NUMBER OF PARTS PER UNIT For each unit or group of identical units, enter in the appropriate space the number of parts fitted in each unit of equipment / Items.
6	EQUIPMENT PURCHASE ORDER NO. COMPANY and / or SELLER / CONTRACTOR 's PO / SO / CONTRACT number. In case of EPCM, enter Purchaser's commercial reference with the supplier / manufacturer / sub-vendor
7	TOTAL NUMBER OF PARTS INSTALLED Enter the total number of identical parts in all equipment / Items specified. In case of identical units, multiply the quantity of column 5 by the number of units given in column 4
8	SPIR ITEM NUMBER List sequence number of the spare part items proposed by SELLER / CONTRACTOR starting from 1 for spare part item 1, 2 for spare part item 2 and so on. If required, more than one line can be utilized to describe one spare part or item
9	DESCRIPTION OF PARTS List by the description of all the spare parts / Items • Which have been recommended and proposed to be included in PO / SO / CONTRACT as COMMISSIONING AND START - UP SPARES. • Which are recommended to be in stock as NORMAL OPERATING SPARES (for the first 2 years and further 3 years of normal operation).
10	DRAWING NO. AND DRAWING POSITION NO. For each part entered in column 9, enter the relevant drawing number and also the position number of the part in the corresponding drawing/s. Note: These drawings should be attached to the completed SPIR form.
11	MANUFACTURER REAL PART NO. Manufacturer spare part reference number (alpha-numeric) or other information, which identifies each part, uniquely. Interchangeability with identical parts within the manufacture's range should be indicated (see Note 1 of the SPIR). Owing to the wide variety of systems in use for identification of parts, it is impossible to lay down firm rules for completing these columns. Manufacturers should give whatever identification system they use to positively identify the parts and to show the interchangeability. If applicable, also indicate the old references, which are replaced by the manufacturer with new references. Also, refer to "Reminder 1" of the SPIR for columns 10 & 11
12	MATERIAL SPECIFICATION Material specification in terms of recognized international standards and accepted conventions. Do not use the manufacturer's or sub-manufacturer's special references. Those special references may be shown in the drawings / technical documents and attach them to the SPIR form.
13, 15 & 17	SPARE PARTS Enter recommended quantities of spares as follows: • Commissioning and start-up spares (column 13). • Spare Parts for first 2 years operation (column 15) • Spare Parts for further 3 years operation (column 17).
14	Enter only quantities for those spares ordered by COMPANY and included in the PO / SO / CONTRACT. See Note 3 on the SPIR Form. All or the surplus quantities of the commissioning spares indicated herein shall become COMPANY property, after the start - up of the equipment.
16 & 18	By COMPANY - BU / SU for their requirement and for COMPANY - CM' s review and action.
19	UNIT PRICE Enter Ex-works price per piece of each part in US Dollars (preferred) or Euros.
20	SHELF LIFE Enter shelf life in months for rubber / elastomeric items, oils, paints, chemicals, sealants etc.
21	LEAD TIME Enter lead - time in weeks for ex-works delivery of each line item / spare part.
22	REMARKS Complete in accordance with Note 2 on the SPIR form. Except in cases of confidentiality agreements, the Original Component Manufacturer's (OCM) references should be furnished in the SPIR form and the corresponding technical documents of the OCM should be attached to the SPIR form.
All other Fields (Not covered above)	These fields are self - explanatory and should be filled in by COMPANY - BU/SU and / or SELLER / CONTRACTOR and without fail
	Important: SELLER / CONTRACTOR shall promptly inform COMPANY of any changes in the submitted SPIR data, which is necessitated due to modifications agreed and carried out in the manufacturer's works and / or at site, after the submission of the SPIR. All the revisions to the SPIR should be clearly highlighted.

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102						 	
	ATTACHMENT 10 - EXPERIENCE RECORD FOR PROFORMA							
COI :	1060-2501						DATE:	19-May-2026
CONTRACTOR PROJECT NO:	25002						REV. NO.	0
PROJECT:	PROJECT SALT						VENDOR:	
MATERIAL REQUISITION NO:	1060-2501-CA220-MR-MRQ-002						OFFER REF:	
MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSOR (API 617 COMPRESSORS)						OFFER DATE:	
SR NO	DESCRIPTION	INFORMATION ON PROPOSED MODEL	REFERENCE A	REFERENCE B	REFERENCE C	REFERENCE D	REFERENCE E	REMARKS
1	2	3	4	5	6	7	8	9
1	GENERAL							
1.1	Cross reference to manufacturer's standard reference list							
1.2	Make							
1.3	Model Number							
1.4	Number of units supplied							
1.5	Process Application							
1.6	Type of driver (Electrical motor/steam turbine/gas turbine)							
1.7	Driver rated KW/Speed (RPM)							
1.8	Driver (Fixed speed / variable speed / variable frequency)							
1.9	Edition of API Standard 617 to which the compressor confirms							
1.10	Drive arrangement (Direct coupled/Gear box)							
1.11	Shop where compressor is designed, manufactured, packaged, tested and supplied with address							
1.12	Shop where equipment Compressor, Driver & auxiliary packaged, Package testing done & supplied with address							
1.13	Complete Package engineering done by Compressor manufacturer/Others (Specify name of the party responsible for package engineering)							
2	OPERATING CONDITIONS							
2.1	Fluid handled							
2.2	Molecular weight (Gram/Mol)							
2.3	Moisture Content at Inlet (% / ppm w/w)							
2.4	Fluid Normal/max/min temperature (Deg C)							
2.5	Compressor capacity in actual m3/hr							
2.6	Suction pressure (Min/Normal/Max) bar A							
2.7	Discharge pressure (Rated/Max) bar A							
2.8	Pressure ratio							
2.9	Discharge Temperature (Deg C)							
2.10	Polytropic efficiency (%)							
2.11	Polytropic head (Nm/Kg)							
2.122	Process control method (IGV/STV/VFD)							
2.133	Gas power (KW)							
2.144	BKW at compressor at driver coupling (KW)							
2.155	Rated Speed (RPM)							
2.166	Maximum Continuous Speed, RPM							
2.177	Speed range for variable speed drive, if applicable (RPM)							
2.188	Inlet mach number							
2.199	Machine mach number							
2.21	Impeller tip Speed at MCS, m/sec							
2.221	Max. actual stress at MCS, kg/mm ²							
2.232	MAWP of casing (bar A) @ Design temperature @ 5 Deg C							
3	CONSTRUCTION							
3.1	Number of stages (single / multi)							

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102						 	
	ATTACHMENT 10 - EXPERIENCE RECORD FOR PROFORMA							
COI :	1060-2501						DATE:	19-May-2026
CONTRACTOR PROJECT NO:	25002						REV. NO.	0
PROJECT:	PROJECT SALT						VENDOR:	
MATERIAL REQUISITION NO:	1060-2501-CA220-MR-MRQ-002						OFFER REF:	
MATERIAL REQUISITION TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSOR (API 617 COMPRESSORS)						OFFER DATE:	
SR NO	DESCRIPTION	INFORMATION ON PROPOSED MODEL	REFERENCE A	REFERENCE B	REFERENCE C	REFERENCE D	REFERENCE E	REMARKS
1	2	3	4	5	6	7	8	9
3.2	Casing Split (Axial/Radial)							
3.3	Method of fabrication (Cast / Welded)							
3.4	No. of sections / No. of side streams in the casing							
3.5	Maximum inlet flow for casing (m3/hr)							
3.6	Max. Casing operating Pressure (Kg/cm ² .a)							
3.7	Casing MAWP (Kg/cm ² .a)							
3.8	Impeller diameter (Min/RatedMax) in mm							
3.9	Max. no. of impellers possible							
3.10	Whether the proposed model and reference models have identical hydraulic design (for impeller / diffuser / volute)							
3.11	Type of Impeller : Open/Closed/2D/3D							
3.12	Span between bearings (mm)							
3.13	Orientation of Suction and Discharge nozzles							
3.14	Type of Dry gas seal (Single/Double/Tandem with intermediate labyrinth)							
3.15	Seal Manufacturer							
3.16	Seal plan control (Flow/Differential pressure)							
3.17	Intercoolers							
3.17	Aftercoolers							
4	MATERIAL OF CONSTRUCTION							
4.1	API-617 Material code							
4.2	Casing							
4.3	Impeller							
4.4	Shaft							
4.5	Diaphragm							
4.6	Diffuser							
4.7	IGV							
4.8	Shaft Seal							
5	DIMENSIONS							
5.1	Base Plate Dimensions (L x W, mm)							
6	OTHER INFORMATION							
6.1	Date of supply of entire unit							
6.2	Date of commissioning of entire unit							
6.3	No. of operating hours completed as on the date of issue of enquiry							
6.4	Major problem encountered							
6.5	Name of plant							
6.6	Purchaser's name and Address							
	Name of company/organization							
	Name of contact person							
	Address							
	E-mail							
	Telephone Number							



ATTACHMENT 11: FORMAT FOR LUBRICATION SCHEDULE

Contract No.:	
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Doc. No.:	1060-2501-CA220-MR-MRQ-002
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Rev. No.:	0
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Date:	19-May-2026
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	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	
COMPANY DOC. No.:	1060-2501-CA220-MR-MRQ-002	DISCIPLINE: MR	REV. 0
CONTRACTOR DOC. No.:	25002-1060-CA220-ME-MRQ-001	DOC. CLASS: 1	Page 1 of 3
DOCUMENT TITLE:	MATERIAL REQUISITION FOR CHLORINE GAS COMPRESSORS (API 617 COMPRESSORS)		

ATTACHMENT – 12

POWER LOADING AND PENALTY FOR CHLORINE GAS COMPRESSOR

1060-2501-CA220-MR-MRQ-002

Train 1 – (CA221-KC-050) / (221U050)

Train 2 – (CA222-KC-050) / (221U050)

	ABU DHABI NATIONAL OIL COMPANY (ADNOC) P.J.S.C EPC OF PROJECT SALT FACILITIES AGREEMENT NUMBER: 4700028102		 
	COMPANY PROJECT NO. 1060-2501	CONTRACTOR PROJECT NO. 25002	
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1.0 INTRODUCTION

In order to optimize the electrical power consumption, Vendor shall offer their most efficient equipment for the specified duty & process parameters.

This specification covers the power loading and penalty criteria to be applied on the less energy efficient equipment's quoted /supplied by the Vendor.

The loading shall be applied during the evaluation stage.

The penalty will be applied upon the performance test. The penalty shall be applied on the supplied equipment if it is found that the power consumption is in excess than the Vendor's guaranteed value.

2.0 SCOPE OF WORK

The power shall be guaranteed, as specified on the equipment data sheets and job/project specifications attached with the requisition.

Power loading shall be applied on continuous operating units only and not on standby units. Power loading should not be done for equipment operating on intermittent basis.

Power loading shall be applied only to the equipment, whose performance can be verified during the shop performance test.

3.0 LOADING CRITERIA

The guaranteed power will be assessed during the evaluation as indicated below.

3.1 Total Cost

The total cost of an Item number (including all working and standby units) for evaluation purposes shall be computed as under.

TOTAL COST OF AN ITEM FOR EVALUATION PURPOSES = A + B

where,

A = Capital cost of the affected equipment (base scope) as quoted for the specified scope of supply.

B = Differential operating cost as defined hereunder.

3.2 Differential Operating Cost

Differential operating cost (B) is defined as under:

$$B = Nop \times (BkWE - BkWR) \times CE \times 8000 \times DF$$

where,

Nop = Number of operating units

BkWE = Guaranteed power consumption for the quoted equipment.

BkWR = Lowest quoted (guaranteed) power consumption amongst the technically acceptable bidders.

CE = Cost of electrical energy, 50\$ MWhr

8000 = Number of operating hours per year.

DF = Discounting factor to arrive at Net Present Value (NPV) based on number of operating years,

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as defined here under:

$$n = k+1$$

$$DF = \sum [1 \div \{1 + (X/100)\}^n]$$

$$n = 2$$

where,

k = Number of operating years for which loading is to be done; as specified i.e. 10 Years.

X= Percentage rate of interest 6%

DF = 6.9435 (*value derived from above calculation*)

[The above formula considers one-year time for start-up of operation.]

3.3 Differential Operating Cost

The maximum loading to be applied, however, shall not exceed 10% of the total capital cost as defined in 3.1.

4 PENALTY CRITERIA

For equipment that fails to meet the guaranteed power values, after a shop performance test, the following procedure shall be followed.

When the tested power consumed by the equipment exceed the stipulated guaranteed value by more than 4% the subject equipment stands rejected. Then vendor shall make good by modification/replacement, within specified time limit, so as to bring and demonstrate the guaranteed performance parameters within acceptable limit, without any cost implications to the Purchaser.

However, for excess power (kW) consumed over and above the guaranteed value upto a maximum of 4%, the vendor shall be penalized for extra energy consumption for each specified item greater than the guaranteed value, as defined here under:

The penalty shall be worked out on the basis of differential operating cost (Pc) as under:

$$Pc = (BkWT - BkWG) \times CE \times 8000 \times DF$$

where,

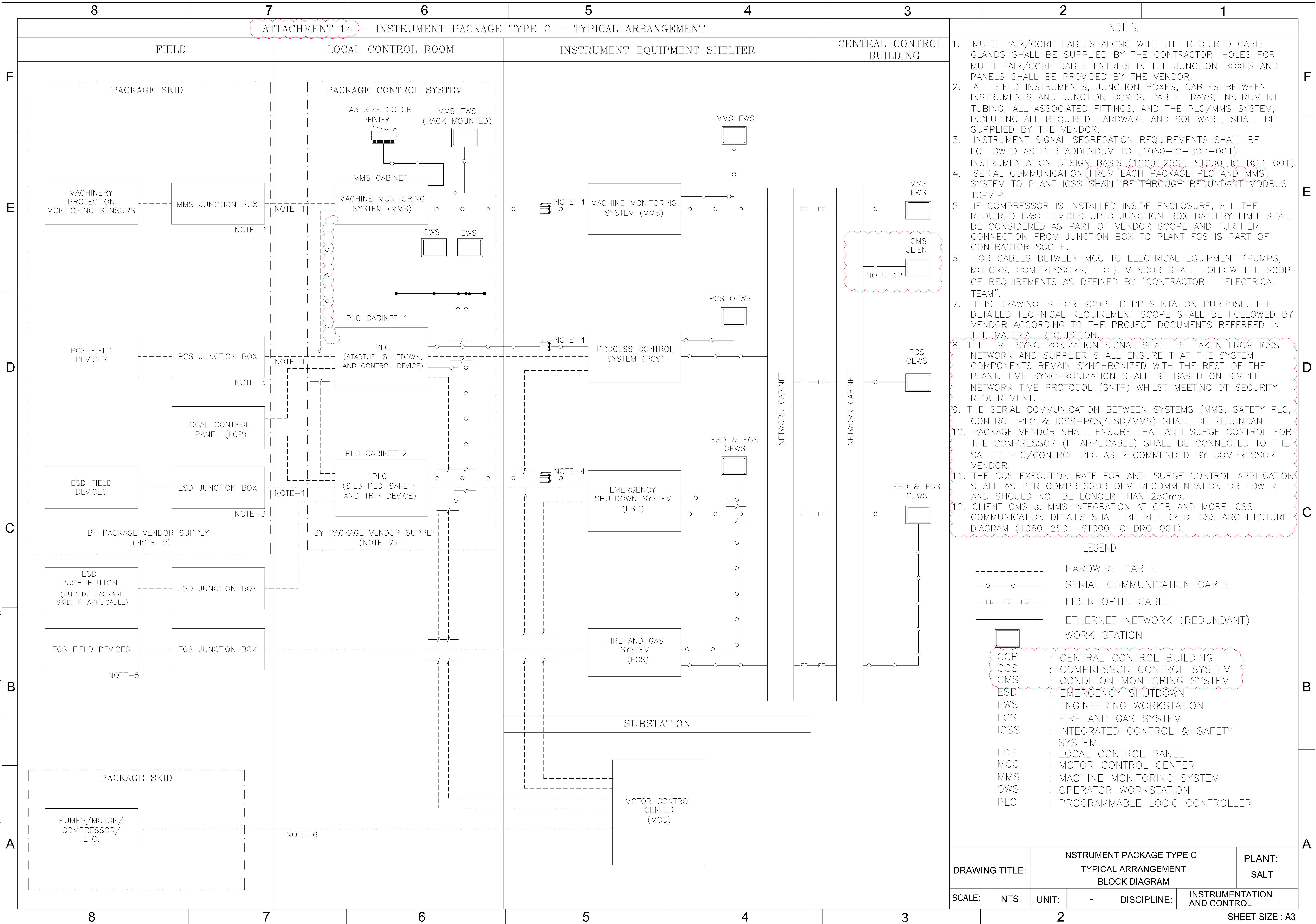
BkWT = Equipment power consumption as obtained from shop test results

BkWG = Guaranteed equipment power consumption with zero positive tolerance including error in instruments and measurement, at guaranteed point, as specified in the datasheet.

The maximum penalty to be charged for non-conformance to guaranteed power values following the shop performance test for all supplied items (including all working & standby units) shall not exceed 10% of the total capital cost defined under clause 3.1 as above.

This penalty shall be independent of any other penalties specified else-where in the bid / enquiry documents.

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