

Client: **Fujifilm Diosynth Biotechnologies**

Rev.: **A**

RFQ No.: **A8WQ-7-0025**

Location: **Hilleroed, Denmark**

Date: **3-Dec-2021**

RFP No.:

Proj. Name **North Star Project**

By: **Marc Brondo**

Project No.: **A8WQ**

## TECHNICAL BILL OF MATERIALS

### Differential Pressure Gauge

REV	ITEM	QTY	Tag Number	Remarks	UNIT PRICE	UNIT	TOTAL PRICE
A	1	1	47-62U01-PDI-003	Differential Pressure Gauge			
A	2	1	47-62U01-PDI-004	Differential Pressure Gauge			
A	3	1	47-62U03-PDI-001	Differential Pressure Gauge			
A	4	1	47-64U01-PDI-002	Differential Pressure Gauge			
A	5	1	47-64U01-PDI-003	Differential Pressure Gauge			
A	6	1	47-64U04-PDI-001	Differential Pressure Gauge			
A	7	1	47-66U01-PDI-002	Differential Pressure Gauge			
A	8	1	47-66U01-PDI-004	Differential Pressure Gauge			
A	9	1	47-66U01-PDI-016	Differential Pressure Gauge			
A	10	1	47-66U01-PDI-017	Differential Pressure Gauge			

#### Notes:

The Supplier shall submit Priced and Unpriced technical quotation.

The Supplier shall submit commercial quotation.

The Supplier shall submit organizational chart and resume for personnel/contact person for the package.

The Supplier shall submit typical manufacturing duration from start of fabrication, assembly to delivery.

The Supplier shall submit typical Inspection and Test plans.

The Supplier shall submit Quality plan.

Client: **Fujifilm Diosynth Biotechnologies**  
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## ATTACHMENT C - LIST OF SPECIFICATIONS, DATASHEETS, DRAWINGS AND ATTACHMENTS

### Differential Pressure Gauge

REV	TAG NUMBER	DOCUMENT NAME	REV	DATE	PAGES
		<b>SPECIFICATIONS</b> <u><b>Mechanical</b></u>			
	999999-ES-QS002	Specification - Supplier Drawing and Data Commitment Specification	D	16-Jul-2021	85
		<b>DATASHEETS</b>			
A	47-62U01-PDI-003-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-62U01-PDI-004-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-62U03-PDI-001-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-64U01-PDI-002-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-64U01-PDI-003-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-64U04-PDI-001-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-66U01-PDI-002-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-66U01-PDI-004-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-66U01-PDI-016-SP	Differential Pressure Gauge	B	3-Dec-2021	1
A	47-66U01-PDI-017-SP	Differential Pressure Gauge	B	3-Dec-2021	1
		<b>DRAWINGS AND ATTACHMENTS</b>			
		<b>MISCELLANEOUS</b>			
	---	Technical Bid of Materials	A	3-Dec-2021	1
	---	Engineering Notes	A	3-Dec-2021	1
	---	Criticality Rating Form	A	3-Dec-2021	1
	---	SDDC Cover Sheet	A	3-Dec-2021	1
	---	Supplier Drawing & Data Commitment (SDDC) Form (for this RFQ)	A	3-Dec-2021	5

Client: **Fujifilm Diosynth Biotechnologies**  
 Location: **Hilleroed, Denmark**  
 Proj. Name: **North Star Project**

Rev.: **A**  
 Date: **3-Dec-2021**  
 By: **Marc Brondo**

RFQ No.: **A8WQ-7-0025**  
 RFP No.:  
 Proj. No.: **A8WQ**

## ENGINEERING NOTES

### Differential Pressure Gauge

#### Rev NOTES:

These Engineering Notes provide special instructions to the Bidder. They serve to define, augment or clarify the data and requirements contained in Buyer's specifications, specification sheets (data sheets), drawings and other technical documents referenced in the Request For Purchase.

1.0 Supplier shall thoroughly review and confirm acceptance with the SDDC Form. Supplier shall submit with their quote signed SDDC Form with any comments/mark-ups to requirements and/or submittal dates for review by the Client/Fluor. If a single document to be submitted during design phase fulfills multiple SDDC requirements, Supplier shall note in quotation.

2.0 Supplier shall provide phenolic instrument tag in addition to the Manufacturer's standard stainless steel tag. Phenolic instrument tag shall be 50mm in diameter with 3.2mm diameter hole at the top, with white background and black lettering.

3.0 Calibration Certificates shall be traceable to National and/or International Standards such as NIST (National Institute of Standards and Technology).

4.0 Supplier shall complete the data for IFP datasheets. A list of fields are provided to Supplier in issued for bid datasheets.

5.0 Supplier shall provide a native list of all of the device serial numbers by tag number of all devices prior to shipment.

6.0 Supplier shall provide detailed dimensions (Dimensional data, Weight);  
 6.0.1. Differential Pressure Gauge list with preliminary dimensional data in reference with cutsheets/product catalogues included in Bid.  
 6.0.2. Differential Pressure Gauge list with final dimensional data after Purchase.

7.0 Material Certificate EN 10204-3.1 is required.

8.0 Differential Pressure Gauge shall be delivered to site with all components pre-assembled and tested.



**SUPPLIER DRAWING & DATA COMMITMENT (SDDC) FORM**  
**Differential Pressure Gauge**

Client: **FUJIFILM**  
Project: **NORTH STAR PROJECT**  
Requisition No.: **A8WQ-7-0025**  
Description: **Differential Pressure Gauge**

Buyer Responsible Engineer: **Marc Brondo**

Revision: **A**  
Revision Date: **03-Dec-21**

TAG(s): **Refer to BOM**

**Supplier Information**

Name: **Salam Al-Saudi**  
Phone: **21899584**  
Project Manager & Ext  
Fax/email: **SAS@Fagerberg.dk**  
Job No: **39865**

Commitment Start Date: **25-12-2021**

**FORM INSTRUCTIONS:**

**1. Buyer Engineer discipline completes the Drawing & Data Requirement Columns I thru XI with the following:**

- (I) Buyer's Drawing/Data Requirement Reference Number.
- (II) Description of Buyer's Requirements for Supplier Drawing/Data.
- (III) Buyer's Document Code (refer to Note 5 for more information on Buyer Document Codes)
- (IV) Priority Code: Priority 1 = Critical for Buyer's plant design to maintain a cost optimized production schedule.  
HIGHEST PRIORITY DATA!  
Priority 2 = Required to verify compliance with specifications and authorization to proceed with Supplier's fabrication.  
Priority 3 = Required for field installation, operation and maintenance plant data books.
- (V) Coreworx Type (refer to Note 5 for more information on Buyer Document Codes)
- (VI) Coreworx Code (refer to Note 5 for more information on Buyer Document Codes)
- (VII) Designate whether or not a drawing or document is required for Commissioning
- (VIII) Designate whether or not an as-built drawing or document is required
- (IX) Designate whether or not a drawing or document is required in Supplier "Turn Over Package" (TOP)
- (X) Type and Quantity = Type and number of copies of data required. P = Print E = Elect
- (XI) EXPECTED SUBMITTAL time in weeks After Receipt of Order (ARO) when the Company expects to receive the drawing

**Legend:**

WQ: With Quote  
ARO: After Receipt of Order  
ARAC After Return of Approved Document: ED: Electronic Disc / Flash Drive  
AS: After Shipment  
PFAT Prior to FAT  
PS: Prior to Shipment  
E: Electronic  
P: Paper

**2. Supplier fills in or confirms Column XII the PROMISED SUBMITTAL time in weeks After Receipt of Order (ARO)**

Supplier must return the completed form to Buyer with his QUOTATION. Supplier's authorized signature is required to certify his binding commitment.

3. The Due Date AT BUYER'S OFFICE (Column XIII) will be entered by the BUYER Material Manager discipline at the time the P.O. is issued. The Due Date will be based on the Promised Submittal Time provided by SUPPLIER with his quotation (Column XII) and the Commitment Start Date. After P.O. award, the SUPPLIER must provide the BUYER the Drawings and Data specified on or before the Due Date.

4. Supplier's Transmittal Letter shall include the PROJECT NAME, CONTRACT NUMBER, PURCHASE ORDER NUMBER, BUYER'S REFERENCE NUMBER (I) corresponding to Supplier's drawing and data submitted (II).

5. Additional instructions to Supplier are in the Specification 999999-ES-QS002 "Supplier Drawing and Data Commitment Specificati



**DESCRIPTION:** **Differential Pressure Gauge**

**COMMITMENT START DATE:**

**3. Include the following on all submittal documents (at top of page):**

Equipment Tag Number(s): <<Refer to Bill of Materials>>

gerberg A/S



SUPPLIER DRAWING & DATA COMMITMENT (SDDC) FORM  
Differential Pressure Gauge

CLIENT: FUJIFILM  
PROJECT: NORTH STAR PROJECT  
REQ. NO.: A8WQ-7-0025  
DESCRIPTION: Differential Pressure Gauge

REVISION: A  
DATE: 03-Dec-21  
COMMITMENT START DATE:

- NOTES:
1. All engineering data submittals shall be zipped together and uploaded to the Fluor Projects Coreworx Database under the "Inbound TXML from Supplier" folder with a completed IBTS Form. Vendor shall fill out an IBTS Form with each transmittal: for each document in the transmittal, select the main Document Code and Type Descriptions (selected from drop down menus) and assign all SDDC Code(s), Process Module Number(s) and Equipment Tag Number(s) associated with the document.
  2. Electronic transfer of engineering data is acceptable provided the Seller has executed Coreworx Supplier SRW Form 000.107.F5003. If this agreement has not been established, seller shall contact Fluor engineer to arrange for completion of this form.
  3. Include the following on all submittal documents (at top of page):

Project Name: North Star Project  
PO Number: A8WQ-7-0025  
SDDC Code(s): <<Refer to Column III codes below>>  
Process Module Number(s): <<Refer to Bill of Materials>>  
Equipment Tag Number(s): <<Refer to Bill of Materials>>

BUYER'S DRAWING & DATA REQUIREMENT										SUPPLIER'S COMMITMENT		
I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII	
REV / REF #	DESCRIPTION	DWG / DOC SDDC CODE	PRIORITY	CWX TYPE	CWX CODE TYPE	AS-BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)	
21	Inspection and Factory Acceptance Test (FAT) Schedule	S03	1	SUP-SCH-002	SCH	No	No	1E	4ARO			
22	Shipping Schedule and Packing Lists	S04	1	SUP-LST-020	SCH	No	No	1E	2PS			
23	Startup and Commissioning Schedules	S05	1	SUP-SCH-002	SCH	No	No	N/A	N/A			
24	Training Schedule	S06	2	SUP-SCH-002	SCH	No	No	N/A	N/A			
	CALCULATIONS / DATA SHEETS											
25	Utility and Electrical Requirements	C01	1	SUP-LST-032	DST	No	Yes	N/A	N/A			
26	Allowable Forces and Moments on Nozzles	C02	1	SUP-CAL-043	CAL	No	Yes	N/A	N/A			
27	Calculations and Assessments to Satisfy PED	C03	1	SUP-CAL-043	CAL	No	Yes	N/A	N/A			
28	Completed Equipment Data Sheets (with Quotes & revised for As-Built)	C04	2	SUP-DST-007	DST	Yes	Yes	N/A	N/A			
29	Performance Curves and Equipment Calculations as Noted	C05	1	SUP-CAL-047	CAL	No	Yes	N/A	N/A			
30	Unbalanced Forces and Moments on Nozzles	C06	1	SUP-CAL-058	CAL	No	No	N/A	N/A			
31	Instrument Specification Sheets	C07	2	SUP-DST-004	DST	Yes	Yes	1E	4ARO			
32	System Holdup Volume	C08	1	SUP-CAL-043	CAL	No	No	N/A	N/A			
33	Seismic / Structural Design Calculations- Must be approved by a certified Danish	C09	1	SUP-CAL-052	CAL	No	Yes	N/A	N/A			
34	Control Valve / Safety Valve / Rupture Disc Calculations	C10	1	SUP-CAL-049	CAL	No	Yes	N/A	N/A			
35	Heat Transfer Calculations	C11	1	SUP-CAL-024	CAL	No	Yes	N/A	N/A			
	LISTS AND INDICES											
36	List of Recommended Spare Parts List	L01	1	SUP-LST-024	LST	No	Yes	1E	8ARO			
37	Manual Valve List	L02	2	SUP-LST-033	LST	Yes	Yes	N/A	N/A			
38	List and / or Index of Drawings	L03	2	SUP-LST-015	LST	Yes	Yes	N/A	N/A			
39	Instrument List / Index	L04	2	SUP-LST-007	LST	Yes	Yes	N/A	N/A			
40	List of Special Tools for Maintenance	L05	2	SUP-LST-015	LST	No	Yes	N/A	N/A			
41	Control System Inter-Processor Communication List	L06	2	SUP-LST-017	LST	No	Yes	N/A	N/A			
42	Bill of Material (BOM) or Detailed Parts List with Material of Construction	L07	2	SUP-BOM-001	LST	Yes	Yes	1E	4ARO			



SUPPLIER DRAWING & DATA COMMITMENT (SDDC) FORM  
Differential Pressure Gauge

CLIENT: FUJIFILM  
PROJECT: NORTH STAR PROJECT  
REQ. NO.: A8WQ-7-0025  
DESCRIPTION: Differential Pressure Gauge

REVISION: A  
DATE: 03-Dec-21  
COMMITMENT START DATE:

- NOTES:
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PO Number: A8WQ-7-0025  
SDDC Code(s): <<Refer to Column III codes below>>  
Process Module Number(s): <<Refer to Bill of Materials>>  
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BUYER'S DRAWING & DATA REQUIREMENT										SUPPLIER'S COMMITMENT		
I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII	
REV	REF #	DESCRIPTION	DWG / DOC SDDC CODE	CWX TYPE	CWX CODE TYPE	AS-BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)	
43		List of all Shipped Loose Items	L08	SUP-LST-027	LST	No	No	N/A	N/A			
44		Detailed Tagged Equipment Parts List	L09	SUP-LST-003	LST	Yes	Yes	N/A	N/A			
45		Master Data and Document Register	L10	SUP-DDR-001	LST	Yes	Yes	1E	2ARO			
46		Alarm and Interlock List	L11	SUP-LST-015	DDR	No	Yes	N/A	N/A			
47		Sub Supplier List and Status Report	L12	SUP-LST-015	LST	No	Yes	N/A	N/A			
		MANUALS / REPORTS										
48		Installation, Operation, Maintenance and Lubrication Manuals	R01	SUP-LOM-002	LOM	No	Yes	2E	8ARO			1 Danish and 1 English
49		EU CE Certifications, PED Documentation, and ATEX Certification	R02	SUP-CER-003	RPT	No	Yes	1E	4ARO			
50		Hydrotest Data Reports	R03	SUP-CER-022	CER	No	Yes	N/A	N/A			
51		Certified Mill Test Reports (MTR) with Heat Numbers for Steel Alloys	R04	SUP-CER-017	CER	No	Yes	1E	12ARO			
52		Certificates of Compliance (COC) for Elastomers, Plastics, Glass, Ceramic, and	R05	SUP-CER-003	CER	No	Yes	1E	12ARO			
53		Instrument Calibration Sheets	R06	SUP-CER-001	CER	No	Yes	1E	8ARO			
54		Sequence of Operation Descriptions	R07	SUP-SPC-008	SPC	No	Yes	N/A	N/A			
55		Quality Control and Assurance (QC/QA) Plans	R08	SUP-QAD-010	QAD	No	No	1E	4ARO			
56		Boroscopying Inspection Report / CD / DVD / Flash Drive Documentation	R09	SUP-TRP-014	TRP	No	Yes	N/A	N/A			
57		Welding Procedures	R10	SUP-WLD-001	WLD	No	Yes	N/A	N/A			
58		Welding File Documentation and Weld Logs	R11	SUP-WLD-001	WLD	No	Yes	N/A	N/A			
59		Certificates of Analysis and / or Compliance for Purge/Shielding Gas	R12	SUP-CER-030	CER	No	Yes	N/A	N/A			
60		Weld Maps with Welder Identification	R13	SUP-WLD-003	WLD	No	Yes	N/A	N/A			
61		NDE Reports (RT, UT, PT, MT as applicable)	R14	SUP-TRP-017	TRP	No	Yes	N/A	N/A			
62		Positive Material Identification Test Results	R15	SUP-TRP-018	TRP	No	No	N/A	N/A			
63		Mechanical and Electropolishing Procedures	R16	SUP-PRC-044	PRC	No	Yes	1E	8ARO			
64		Surface Finish and / or Electropolish Reports and / or Certificates	R17	SUP-CER-016	CER	No	Yes	1E	8ARO			
65		Cleaning and Passivation Procedures	R18	SUP-PRC-019	PRC	No	Yes	1E	8ARO			
66		Passivation and Cleaning Reports and / or Certificates	R19	SUP-CER-016	CER	No	Yes	1E	8ARO			



SUPPLIER DRAWING & DATA COMMITMENT (SDDC) FORM  
Differential Pressure Gauge

CLIENT: **FUJIFILM**  
PROJECT: **NORTH STAR PROJECT**  
REQ. NO.: **A8WQ-7-0025**  
DESCRIPTION: **Differential Pressure Gauge**

REVISION: **A**  
DATE: **03-Dec-21**  
COMMITMENT START DATE: \_\_\_\_\_

- NOTES:**
1. All engineering data submittals shall be zipped together and uploaded to the Fluor Projects Coreworx Database under the "Inbound TXML from Supplier" folder with a completed IBTS Form. Vendor shall fill out an IBTS Form with each transmittal: for each document in the transmittal, select the main Document Code and Type Descriptions (selected from drop down menus) and assign all SDDC Code(s), Process Module Number(s) and Equipment Tag Number(s) associated with the document.
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  3. Include the following on all submittal documents (at top of page):

Project Name: North Star Project  
PO Number: A8WQ-7-0025  
SDDC Code(s): <<Refer to Column III codes below>>  
Process Module Number(s): <<Refer to Bill of Materials>>  
Equipment Tag Number(s): <<Refer to Bill of Materials>>

BUYER'S DRAWING & DATA REQUIREMENT													SUPPLIER'S COMMITMENT		
I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII				
REV	REF #	DESCRIPTION	DWG / DOC SDC CODE	PRIORITY	CWX TYPE	CWX CODE TYPE	AS- BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)			
67		Sprayball (e.g. Riboflavin) Test Procedure	R20	2	SUP-PRC-019	PRC	No	Yes	N/A	N/A					
68		Sprayball Test Results	R21	2	SUP-TRP-017	TRP	No	Yes	N/A	N/A					
69		Vendor Turnover Package	R22	3	SUP-DBK-002	DBK	No	Yes	N/A	N/A					
70		Equipment Component & Instrument Receipt and Inspection	R23	2	SUP-TRP-017	TRP	No	Yes	N/A	N/A					
71		Inspection Release Certificate	R24	2	SUP-CER-012	CER	No	Yes	N/A	N/A					
72		Packaging and Shipping Procedures	R25	3	SUP-PRC-029	PRC	No	Yes	N/A	N/A					
73		Manufacturers ISO9001 Certificates	R26	2	SUP-CER-016	CER	No	Yes	N/A	N/A					
74		Progress Reports	R27	3	SUP-RPT-008	RPT	No	No	N/A	N/A					
75		Inspection Test Plan	R28	1	SUP-ITP-001	ITP	No	Yes	1E	2ARO					
		CONTROL SYSTEM DATA													
76		Software Development Documentation	V01	2	SUP-SPC-012	SPC	No	Yes	N/A	N/A					
77		Software Source Codes	V02	2	SUP-SPC-007	SPC	Yes	Yes	N/A	N/A					
78		Software Test Protocols	V03	2	SUP-SPC-012	SPC	No	Yes	N/A	N/A					
79		Maintenance Manuals	V04	2	SUP-IOM-003	IOM	No	Yes	N/A	N/A					
80		Security System Specification	V05	2	SUP-SPC-004	SPC	Yes	Yes	N/A	N/A					
81		Instrument Calibration Procedures	V06	2	SUP-PRC-018	PRC	No	Yes	N/A	N/A					
82		Operator / User Manual	V07	2	SUP-IOM-002	IOM	No	Yes	N/A	N/A					
83		Input / Output (I/O) Schedule	V08	2	SUP-LST-006	LST	Yes	Yes	N/A	N/A					
84		System Architecture and Hardware Configuration Diagram	V09	2	SUP-DIA-019	DIA	Yes	Yes	N/A	N/A					
85		OEM Software Licenses and Original Diskettes / CD/ VDV / Flash Drives and Manuals	V10	2	SUP-IOM-001	IOM	No	Yes	N/A	N/A					
86		Certification of Software Compliance with 21 CFR Part 11	V11	2	SUP-CER-003	CER	No	Yes	N/A	N/A					
		SYSTEM, OPERATIONAL, AND VALIDATION DOCUMENTS													
87		Functional Requirements Specification	F01	2	SUP-SPC-008	SPC	Yes	Yes	N/A	N/A					
88		Detail Design Specification	F02	2	SUP-SPC-004	SPC	Yes	Yes	N/A	N/A					





**DESCRIPTION:** Differential Pressure Gauge

**COMMITMENT START DATE:**

Equipment Tag Number(s): <<Refer to Bill of Materials>>

SA


Company:

Page No.: 10 of 11

GENERAL	1	Tag Number	PID Number	47-62U01 -PDI -003		600123-47-D3052108	
	2	Service			HVAC CHILLED WATER DISTRIBUTION		
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG			
	4	Area Classification		NON HAZARDOUS			
	5	Line No.	Equipment No.	47-400-CHWS-62U01103-AA24-IC		N/A	
	6	Agency Approval		CE MARKING			
PROCESS CONDITIONS	7	Fluid	Phase	HVAC CHILLED WATER SUPPLY		Liquid	
	8		UNITS	MINIMUM	NORMAL	MAXIMUM	
	9	Pressure	bar-g		6.5	7.8	
	10	Temperature	°C		7	7	
	11	Pulsation	Vibration	No		No	
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.8 bar-g		/24 °C	
	13						
	14	Sterilization		N/A			
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE	
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g	
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD	
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS	
	19	Case Material		316 SS			
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS	
	21	Blow-Out Protection		Yes			
	22	Lens Material		SAFETY GLASS			
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS	
	24	Socket Material		316L SS			
	25	Connection Size	Location	1/2" NPT Male		LOWER	
	26	Movement Material	Enclosure Rating	316 SS		IP 66	
	27	Movement Damping	Case Fill	Yes		N/A	
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD	
	29	Linearity	Hysteresis	N/A		N/A	
	DIAPHRAGM SEAL	30	Overpressure Protection		VTA		
		31	Calibration Certificate		Yes		
32		Type	Model	N/A		N/A	
33		Process Connection	Size	N/A		N/A	
34		Diaphragm Material		N/A			
35		Bottom Housing Material		N/A			
36		Fill Fluid		N/A			
37		Capillary Length		N/A			
38		Capillary Material		N/A			
39		Flushing Connection		No			
40		Top Housing Material		N/A			
41		Instrument Connection	Location	N/A		N/A	
OPTIONS		42					
	43	Swivel Adapter: Type	Material	N/A		N/A	
	44	Syphon: Type	Material	N/A		N/A	
	45	Snubber: Type	Material	N/A		N/A	
	46	Special Cleaning		No			
	47	Surface Roughness	Surface Rough. Cert.	N/A		N/A	
	48	Electropolished	Electropolished Cert.	N/A		N/A	
	49	Material Certification	Certification	Yes		EN 10204-3.1	
PURCHASE	50	Manufacturer		ASHCROFT			
	51	Model		VTA			
	52	Purchase Order Number		7-0025			
	53	Price	Item Number	VTA		VTA	
	54	Serial Number		VTA			

Notes: VTA: Vendor to advise


1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge		
B	MMB	02Dec2021	Issued for Bid		Sheet 1 of 1	
A	MMB	15Nov2021	Issued for Approval			
No.	By	Date	Description	Code: 101	Doc. No.: 47-62U01 -PDI -003-SP	Rev.: B

GENERAL	1	Tag Number	PID Number	47-62U01 -PDI -004		600123-47-D3052108	
	2	Service		HVAC CHILLED WATER DISTRIBUTION			
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG			
	4	Area Classification		NON HAZARDOUS			
	5	Line No.	Equipment No.	47-400-CHWS-62U01104-AA24-IC		N/A	
	6	Agency Approval		CE MARKING			
PROCESS CONDITIONS	7	Fluid	Phase	HVAC CHILLED WATER SUPPLY		Liquid	
	8		UNITS	MINIMUM	NORMAL	MAXIMUM	
	9	Pressure	bar-g		6.5	7.8	
	10	Temperature	°C		7	7	
	11	Pulsation	Vibration	No		No	
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.8 bar-g		/24 °C	
	13						
	14	Sterilization		N/A			
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE	
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g	
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD	
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS	
	19	Case Material		316 SS			
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS	
	21	Blow-Out Protection		Yes			
	22	Lens Material		SAFETY GLASS			
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS	
	24	Socket Material		316L SS			
	25	Connection Size	Location	1/2" NPT Male		LOWER	
	26	Movement Material	Enclosure Rating	316 SS		IP 66	
	27	Movement Damping	Case Fill	Yes		N/A	
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD	
	29	Linearity	Hysteresis	N/A		N/A	
	30	Overpressure Protection		VTA			
	31	Calibration Certificate		Yes			
DIAPHRAGM SEAL	32	Type	Model	N/A		N/A	
	33	Process Connection	Size	N/A		N/A	
	34	Diaphragm Material		N/A			
	35	Bottom Housing Material		N/A			
	36	Fill Fluid		N/A			
	37	Capillary Length		N/A			
	38	Capillary Material		N/A			
	39	Flushing Connection		No			
	40	Top Housing Material		N/A			
	41	Instrument Connection	Location	N/A		N/A	
	42						
	OPTIONS	43	Swivel Adapter: Type	Material	N/A		N/A
44		Syphon: Type	Material	N/A		N/A	
45		Snubber: Type	Material	N/A		N/A	
46		Special Cleaning		No			
47		Surface Roughness	Surface Rough. Cert.	N/A		N/A	
48		Electropolished	Electropolished Cert.	N/A		N/A	
49		Material Certification	Certification	Yes		EN 10204-3.1	
PURCHASE	50	Manufacturer		ASHCROFT			
	51	Model		VTA			
	52	Purchase Order Number		7-0025			
	53	Price	Item Number	VTA		VTA	
	54	Serial Number		VTA			

Notes: VTA: Vendor to advise


1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge		
B	MMB	02Dec2021	Issued for Bid		Sheet 1 of 1	
A	MMB	15Nov2021	Issued for Approval			
No.	By	Date	Description	Code: 101	Doc. No.: 47-62U01 -PDI -004-SP	Rev.: B

GENERAL	1	Tag Number	PID Number	47-62U03 -PDI -001	600123-47-D2052106
	2	Service		HVAC CHILLERS	
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG	
	4	Area Classification		NON HAZARDOUS	
	5	Line No.	Equipment No.	47-350-CHWR-62U03030-AA24-IC	N/A
	6	Agency Approval		CE MARKING	
PROCESS CONDITIONS	7	Fluid	Phase	HVAC CHILLED WATER RETURN	Liquid
	8		UNITS	MINIMUM	NORMAL
	9	Pressure	bar-g		3.5
	10	Temperature	°C		12
	11	Pulsation	Vibration	No	No
	12	Min/Max Design Press	Min/Max Design Temp.	/ 5.5 bar-g	/29 °C
	13				
	14	Sterilization		N/A	
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE	REMOTE
	16	Calibration Range Min.	Max.	0 bar-g	6 bar-g
	17	Figure Interval	Minor Graduation	MFR. STD	MFR. STD
	18	Dial Size	Markings/Color	100mm	WHT DIAL W/ BLK GRADS
	19	Case Material		316 SS	
	20	Ring Construction	Ring Material	OPEN FRONT	316L SS
	21	Blow-Out Protection		Yes	
	22	Lens Material		SAFETY GLASS	
	23	Pressure Element Type	Material	DIAPHRAGM	316L SS
	24	Socket Material		316L SS	
	25	Connection Size	Location	1/2" NPT Male	LOWER
	26	Movement Material	Enclosure Rating	316 SS	IP 66
	27	Movement Damping	Case Fill	Yes	N/A
	28	Nominal Accuracy	Repeatability	MFR. STD	MFR. STD
	29	Linearity	Hysteresis	N/A	N/A
DIAPHRAGM SEAL	30	Overpressure Protection		VT A	
	31	Calibration Certificate		Yes	
	32	Type	Model	N/A	N/A
	33	Process Connection	Size	N/A	N/A
	34	Diaphragm Material		N/A	
	35	Bottom Housing Material		N/A	
	36	Fill Fluid		N/A	
	37	Capillary Length		N/A	
	38	Capillary Material		N/A	
	39	Flushing Connection		No	
	40	Top Housing Material		N/A	
	41	Instrument Connection	Location	N/A	N/A
OPTIONS	42				
	43	Swivel Adapter: Type	Material	N/A	N/A
	44	Syphon: Type	Material	N/A	N/A
	45	Snubber: Type	Material	N/A	N/A
	46	Special Cleaning		No	
	47	Surface Roughness	Surface Rough. Cert.	N/A	N/A
	48	Electropolished	Electropolished Cert.	N/A	N/A
PURCHASE	49	Material Certification	Certification	Yes	EN 10204-3.1
	50	Manufacturer		ASHCROFT	
	51	Model		VT A	
	52	Purchase Order Number		7-0025	
	53	Price	Item Number	VT A	VT A
	54	Serial Number		VT A	

Notes: VTA: Vendor to advise


1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge		<div></div>	
B	MMB	02Dec2021	Issued for Bid				
A	MMB	15Nov2021	Issued for Approval				
No.	By	Date	Description	Code: 101	Doc. No.:	47-62U03 -PDI -001-SP	Rev.: B

GENERAL	1	Tag Number	PID Number	47-64U01 -PDI -002		600123-47-D2052109	
	2	Service		GLYCOL EXPANSION TANK AND PUMPS			
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG			
	4	Area Classification		NON HAZARDOUS			
	5	Line No.	Equipment No.	47-400-WGS-64U01905-BA21-IC		N/A	
	6	Agency Approval		CE MARKING			
PROCESS CONDITIONS	7	Fluid	Phase	PROCESS CHILLED GLYCOL SUPPLY		Liquid	
	8		UNITS	MINIMUM	NORMAL	MAXIMUM	
	9	Pressure	bar-g		5.7	6.9	
	10	Temperature	°C		1	1	
	11	Pulsation	Vibration	No		No	
	12	Min/Max Design Press	Min/Max Design Temp.	/ 7.9 bar-g		/18 °C	
	13						
	14	Sterilization		N/A			
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE	
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g	
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD	
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS	
	19	Case Material		316 SS			
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS	
	21	Blow-Out Protection		Yes			
	22	Lens Material		SAFETY GLASS			
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS	
	24	Socket Material		316L SS			
	25	Connection Size	Location	1/2" NPT Male		LOWER	
	26	Movement Material	Enclosure Rating	316 SS		IP 66	
	27	Movement Damping	Case Fill	Yes		N/A	
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD	
	29	Linearity	Hysteresis	N/A		N/A	
	30	Overpressure Protection		VTA			
	31	Calibration Certificate		Yes			
DIAPHRAGM SEAL	32	Type	Model	N/A		N/A	
	33	Process Connection	Size	N/A		N/A	
	34	Diaphragm Material		N/A			
	35	Bottom Housing Material		N/A			
	36	Fill Fluid		N/A			
	37	Capillary Length		N/A			
	38	Capillary Material		N/A			
	39	Flushing Connection		No			
	40	Top Housing Material		N/A			
	41	Instrument Connection	Location	N/A		N/A	
	42						
	OPTIONS	43	Swivel Adapter: Type	Material	N/A		N/A
44		Syphon: Type	Material	N/A		N/A	
45		Snubber: Type	Material	N/A		N/A	
46		Special Cleaning		No			
47		Surface Roughness	Surface Rough. Cert.	N/A		N/A	
48		Electropolished	Electropolished Cert.	N/A		N/A	
49		Material Certification	Certification	Yes		EN 10204-3.1	
PURCHASE	50	Manufacturer		ASHCROFT			
	51	Model		VTA			
	52	Purchase Order Number		7-0025			
	53	Price	Item Number	VTA		VTA	
	54	Serial Number		VTA			

Notes: VTA: Vendor to advise


1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge			
B	MMB	02Dec2021	Issued for Bid				
A	MMB	15Nov2021	Issued for Approval			Sheet 1	of 1
No.	By	Date	Description	Code: 101	Doc. No.: 47-64U01 -PDI -002-SP	Rev.: B	

GENERAL	1	Tag Number	PID Number	47-64U01 -PDI -003		600123-47-D2052109		
	2	Service		GLYCOL EXPANSION TANK AND PUMPS				
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG				
	4	Area Classification		NON HAZARDOUS				
	5	Line No.	Equipment No.	47-400-WGS-64U01906-BA21-IC		N/A		
	6	Agency Approval		CE MARKING				
PROCESS CONDITIONS	7	Fluid	Phase	PROCESS CHILLED GLYCOL SUPPLY		Liquid		
	8		UNITS	MINIMUM	NORMAL	MAXIMUM		
	9	Pressure	bar-g		5.7	6.9		
	10	Temperature	°C		1	1		
	11	Pulsation	Vibration	No		No		
	12	Min/Max Design Press	Min/Max Design Temp.	/ 7.9 bar-g		/18 °C		
	13							
	14	Sterilization		N/A				
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE		
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g		
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD		
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS		
	19	Case Material		316 SS				
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS		
	21	Blow-Out Protection		Yes				
	22	Lens Material		SAFETY GLASS				
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS		
	24	Socket Material		316L SS				
	25	Connection Size	Location	1/2" NPT Male		LOWER		
	26	Movement Material	Enclosure Rating	316 SS		IP 66		
	27	Movement Damping	Case Fill	Yes		N/A		
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD		
	29	Linearity	Hysteresis	N/A		N/A		
	DIAPHRAGM SEAL	30	Overpressure Protection		VTA			
		31	Calibration Certificate		Yes			
32		Type	Model	N/A		N/A		
33		Process Connection	Size	N/A		N/A		
34		Diaphragm Material		N/A				
35		Bottom Housing Material		N/A				
36		Fill Fluid		N/A				
37		Capillary Length		N/A				
38		Capillary Material		N/A				
39		Flushing Connection		No				
40		Top Housing Material		N/A				
41		Instrument Connection	Location	N/A		N/A		
OPTIONS		42						
	43	Swivel Adapter: Type	Material	N/A		N/A		
	44	Syphon: Type	Material	N/A		N/A		
	45	Snubber: Type	Material	N/A		N/A		
	46	Special Cleaning		No				
	47	Surface Roughness	Surface Rough. Cert.	N/A		N/A		
	48	Electropolished	Electropolished Cert.	N/A		N/A		
	49	Material Certification	Certification	Yes		EN 10204-3.1		
PURCHASE	50	Manufacturer		ASHCROFT				
	51	Model		VTA				
	52	Purchase Order Number		7-0025				
	53	Price	Item Number	VTA		VTA		
	54	Serial Number		VTA				

Notes: VTA: Vendor to advise


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				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge		<div></div>	
B	MMB	02Dec2021	Issued for Bid				
A	MMB	15Nov2021	Issued for Approval			Sheet 1 of 1	
No.	By	Date	Description	Code: 101	Doc. No.: 47-64U01 -PDI -003-SP	Rev.: B	

GENERAL	1	Tag Number	PID Number	47-64U04 -PDI -001	600123-47-D2052106
	2	Service		HVAC CHILLERS	
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG	
	4	Area Classification		NON HAZARDOUS	
	5	Line No.	Equipment No.	47-350-WGR-64U04030-AA24-IC	N/A
	6	Agency Approval		CE MARKING	
PROCESS CONDITIONS	7	Fluid	Phase	HVAC CHILLED WATER RETURN	Liquid
	8		UNITS	MINIMUM	NORMAL
	9	Pressure	bar-g		3.5
	10	Temperature	°C		12
	11	Pulsation	Vibration	No	No
	12	Min/Max Design Press	Min/Max Design Temp.	/ 5.5 bar-g	/29 °C
	13				
	14	Sterilization		N/A	
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE	REMOTE
	16	Calibration Range Min.	Max.	0 bar-g	6 bar-g
	17	Figure Interval	Minor Graduation	MFR. STD	MFR. STD
	18	Dial Size	Markings/Color	100mm	WHT DIAL W/ BLK GRADS
	19	Case Material		316 SS	
	20	Ring Construction	Ring Material	OPEN FRONT	316L SS
	21	Blow-Out Protection		Yes	
	22	Lens Material		SAFETY GLASS	
	23	Pressure Element Type	Material	DIAPHRAGM	316L SS
	24	Socket Material		316L SS	
	25	Connection Size	Location	1/2" NPT Male	LOWER
	26	Movement Material	Enclosure Rating	316 SS	IP 66
	27	Movement Damping	Case Fill	Yes	N/A
	28	Nominal Accuracy	Repeatability	MFR. STD	MFR. STD
	29	Linearity	Hysteresis	N/A	N/A
	30	Overpressure Protection		VT A	
	31	Calibration Certificate		Yes	
DIAPHRAGM SEAL	32	Type	Model	N/A	N/A
	33	Process Connection	Size	N/A	N/A
	34	Diaphragm Material		N/A	
	35	Bottom Housing Material		N/A	
	36	Fill Fluid		N/A	
	37	Capillary Length		N/A	
	38	Capillary Material		N/A	
	39	Flushing Connection		No	
	40	Top Housing Material		N/A	
	41	Instrument Connection	Location	N/A	N/A
	42				
	43	Swivel Adapter: Type	Material	N/A	N/A
OPTIONS	44	Syphon: Type	Material	N/A	N/A
	45	Snubber: Type	Material	N/A	N/A
	46	Special Cleaning		No	
	47	Surface Roughness	Surface Rough. Cert.	N/A	N/A
	48	Electropolished	Electropolished Cert.	N/A	N/A
	49	Material Certification	Certification	Yes	EN 10204-3.1
	50	Manufacturer		ASHCROFT	
PURCHASE	51	Model		VT A	
	52	Purchase Order Number		7-0025	
	53	Price	Item Number	VT A	VT A
	54	Serial Number		VT A	

Notes: VTA: Vendor to advise

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				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge	
B	MMB	02Dec2021	Issued for Bid		
A	MMB	15Nov2021	Issued for Approval		
No.	By	Date	Description	Code: 101	Doc. No.: 47-64U04 -PDI -001-SP
					Rev.: B


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GENERAL	1	Tag Number	PID Number	47-66U01 -PDI -002		600123-47-D3052107	
	2	Service		COOLING TOWER WATER MAIN DISTRIBUTION			
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG			
	4	Area Classification		NON HAZARDOUS			
	5	Line No.	Equipment No.	47-500-WTS-66U01005-BA21		N/A	
	6	Agency Approval		CE MARKING			
PROCESS CONDITIONS	7	Fluid	Phase	TOWER WATER SUPPLY		Liquid	
	8		UNITS	MINIMUM	NORMAL	MAXIMUM	
	9	Pressure	bar-g		5.9	7.1	
	10	Temperature	°C		24	24	
	11	Pulsation	Vibration	No		No	
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.1 bar-g		/44 °C	
	13						
	14	Sterilization		N/A			
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE	
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g	
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD	
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS	
	19	Case Material		316 SS			
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS	
	21	Blow-Out Protection		Yes			
	22	Lens Material		SAFETY GLASS			
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS	
	24	Socket Material		316L SS			
	25	Connection Size	Location	1/2" NPT Male		LOWER	
	26	Movement Material	Enclosure Rating	316 SS		IP 66	
	27	Movement Damping	Case Fill	Yes		N/A	
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD	
	29	Linearity	Hysteresis	N/A		N/A	
	30	Overpressure Protection		VTA			
	31	Calibration Certificate		Yes			
DIAPHRAGM SEAL	32	Type	Model	N/A		N/A	
	33	Process Connection	Size	N/A		N/A	
	34	Diaphragm Material		N/A			
	35	Bottom Housing Material		N/A			
	36	Fill Fluid		N/A			
	37	Capillary Length		N/A			
	38	Capillary Material		N/A			
	39	Flushing Connection		No			
	40	Top Housing Material		N/A			
	41	Instrument Connection	Location	N/A		N/A	
	42						
	OPTIONS	43	Swivel Adapter: Type	Material	N/A		N/A
44		Syphon: Type	Material	N/A		N/A	
45		Snubber: Type	Material	N/A		N/A	
46		Special Cleaning		No			
47		Surface Roughness	Surface Rough. Cert.	N/A		N/A	
48		Electropolished	Electropolished Cert.	N/A		N/A	
49		Material Certification	Certification	Yes		EN 10204-3.1	
PURCHASE	50	Manufacturer		ASHCROFT			
	51	Model		VTA			
	52	Purchase Order Number		7-0025			
	53	Price	Item Number	VTA		VTA	
	54	Serial Number		VTA			

Notes: VTA: Vendor to advise

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				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge			
B	MMB	02Dec2021	Issued for Bid				
A	MMB	15Nov2021	Issued for Approval			Sheet 1	of 1
No.	By	Date	Description	Code: 101	Doc. No.: 47-66U01 -PDI -002-SP	Rev.: B	



GENERAL	1	Tag Number	PID Number	47-66U01 -PDI -004		600123-47-D3052107		
	2	Service		COOLING TOWER WATER MAIN DISTRIBUTION				
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG				
	4	Area Classification		NON HAZARDOUS				
	5	Line No.	Equipment No.	47-500-WTS-66U01004-BA21		N/A		
	6	Agency Approval		CE MARKING				
PROCESS CONDITIONS	7	Fluid	Phase	TOWER WATER SUPPLY		Liquid		
	8		UNITS	MINIMUM	NORMAL	MAXIMUM		
	9	Pressure	bar-g		5.9	7.1		
	10	Temperature	°C		24	24		
	11	Pulsation	Vibration	No		No		
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.1 bar-g		/44 °C		
	13							
	14	Sterilization		N/A				
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE		REMOTE		
	16	Calibration Range Min.	Max.	0 bar-g		10 bar-g		
	17	Figure Interval	Minor Graduation	MFR. STD		MFR. STD		
	18	Dial Size	Markings/Color	100mm		WHT DIAL W/ BLK GRADS		
	19	Case Material		316 SS				
	20	Ring Construction	Ring Material	OPEN FRONT		316L SS		
	21	Blow-Out Protection		Yes				
	22	Lens Material		SAFETY GLASS				
	23	Pressure Element Type	Material	DIAPHRAGM		316L SS		
	24	Socket Material		316L SS				
	25	Connection Size	Location	1/2" NPT Male		LOWER		
	26	Movement Material	Enclosure Rating	316 SS		IP 66		
	27	Movement Damping	Case Fill	Yes		N/A		
	28	Nominal Accuracy	Repeatability	MFR. STD		MFR. STD		
	29	Linearity	Hysteresis	N/A		N/A		
	DIAPHRAGM SEAL	30	Overpressure Protection		VTA			
		31	Calibration Certificate		Yes			
32		Type	Model	N/A		N/A		
33		Process Connection	Size	N/A		N/A		
34		Diaphragm Material		N/A				
35		Bottom Housing Material		N/A				
36		Fill Fluid		N/A				
37		Capillary Length		N/A				
38		Capillary Material		N/A				
39		Flushing Connection		No				
40		Top Housing Material		N/A				
41		Instrument Connection	Location	N/A		N/A		
OPTIONS		42						
	43	Swivel Adapter: Type	Material	N/A		N/A		
	44	Syphon: Type	Material	N/A		N/A		
	45	Snubber: Type	Material	N/A		N/A		
	46	Special Cleaning		No				
	47	Surface Roughness	Surface Rough. Cert.	N/A		N/A		
	48	Electropolished	Electropolished Cert.	N/A		N/A		
	49	Material Certification	Certification	Yes		EN 10204-3.1		
PURCHASE	50	Manufacturer		ASHCROFT				
	51	Model		VTA				
	52	Purchase Order Number		7-0025				
	53	Price	Item Number	VTA		VTA		
	54	Serial Number		VTA				

Notes: VTA: Vendor to advise


1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge		<div></div>	
B	MMB	02Dec2021	Issued for Bid				
A	MMB	15Nov2021	Issued for Approval			Sheet 1 of 1	
No.	By	Date	Description	Code: 101	Doc. No.: 47-66U01 -PDI -004-SP	Rev.: B	

GENERAL	1	Tag Number	PID Number	47-66U01 -PDI -016	600123-47-D2052106
	2	Service		HVAC CHILLERS	
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG	
	4	Area Classification		NON HAZARDOUS	
	5	Line No.	Equipment No.	47-450-WTS-66U01035-BA21	N/A
	6	Agency Approval		CE MARKING	
PROCESS CONDITIONS	7	Fluid	Phase	TOWER WATER SUPPLY	Liquid
	8		UNITS	MINIMUM	NORMAL
	9	Pressure	bar-g		5.9
	10	Temperature	°C		27
	11	Pulsation	Vibration	No	No
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.1 bar-g	/50 °C
	13				
GAUGE	14	Sterilization		N/A	
	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE	REMOTE
	16	Calibration Range Min.	Max.	0 bar-g	10 bar-g
	17	Figure Interval	Minor Graduation	MFR. STD	MFR. STD
	18	Dial Size	Markings/Color	100mm	WHT DIAL W/ BLK GRADS
	19	Case Material		316 SS	
	20	Ring Construction	Ring Material	OPEN FRONT	316L SS
	21	Blow-Out Protection		Yes	
	22	Lens Material		SAFETY GLASS	
	23	Pressure Element Type	Material	DIAPHRAGM	316L SS
	24	Socket Material		316L SS	
	25	Connection Size	Location	1/2" NPT Male	LOWER
	26	Movement Material	Enclosure Rating	316 SS	IP 66
	27	Movement Damping	Case Fill	Yes	N/A
	28	Nominal Accuracy	Repeatability	MFR. STD	MFR. STD
DIAPHRAGM SEAL	29	Linearity	Hysteresis	N/A	N/A
	30	Overpressure Protection		VT A	
	31	Calibration Certificate		Yes	
	32	Type	Model	N/A	N/A
	33	Process Connection	Size	N/A	N/A
	34	Diaphragm Material		N/A	
	35	Bottom Housing Material		N/A	
	36	Fill Fluid		N/A	
	37	Capillary Length		N/A	
	38	Capillary Material		N/A	
OPTIONS	39	Flushing Connection		No	
	40	Top Housing Material		N/A	
	41	Instrument Connection	Location	N/A	N/A
	42				
	43	Swivel Adapter: Type	Material	N/A	N/A
	44	Syphon: Type	Material	N/A	N/A
	45	Snubber: Type	Material	N/A	N/A
PURCHASE	46	Special Cleaning		No	
	47	Surface Roughness	Surface Rough. Cert.	N/A	N/A
	48	Electropolished	Electropolished Cert.	N/A	N/A
	49	Material Certification	Certification	Yes	EN 10204-3.1
	50	Manufacturer		ASHCROFT	
	51	Model		VT A	
	52	Purchase Order Number		7-0025	
	53	Price	Item Number	VT A	VT A
	54	Serial Number		VT A	

Notes: VTA: Vendor to advise

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No.	By	Date	Description	Code: 101	Doc. No.: 47-66U01 -PDI -016-SP
					Rev.: B

Sheet 1 of 1

GENERAL	1	Tag Number	PID Number	47-66U01 -PDI -017	600123-47-D2052106
	2	Service		HVAC CHILLERS	
	3	Tagging		Ø50 SS TAG PLATE W/ ENGRAVED TAG	
	4	Area Classification		NON HAZARDOUS	
	5	Line No.	Equipment No.	47-450-WTS-66U01045-BA21	N/A
	6	Agency Approval		CE MARKING	
PROCESS CONDITIONS	7	Fluid	Phase	TOWER WATER SUPPLY	Liquid
	8		UNITS	MINIMUM	NORMAL
	9	Pressure	bar-g		5.9
	10	Temperature	°C		27
	11	Pulsation	Vibration	No	No
	12	Min/Max Design Press	Min/Max Design Temp.	/ 8.1 bar-g	/50 °C
	13				
	14	Sterilization		N/A	
GAUGE	15	Type	Mounting	DIFFERENTIAL PRESSURE GAUGE	REMOTE
	16	Calibration Range Min.	Max.	0 bar-g	10 bar-g
	17	Figure Interval	Minor Graduation	MFR. STD	MFR. STD
	18	Dial Size	Markings/Color	100mm	WHT DIAL W/ BLK GRADS
	19	Case Material		316 SS	
	20	Ring Construction	Ring Material	OPEN FRONT	316L SS
	21	Blow-Out Protection		Yes	
	22	Lens Material		SAFETY GLASS	
	23	Pressure Element Type	Material	DIAPHRAGM	316L SS
	24	Socket Material		316L SS	
	25	Connection Size	Location	1/2" NPT Male	LOWER
	26	Movement Material	Enclosure Rating	316 SS	IP 66
	27	Movement Damping	Case Fill	Yes	N/A
	28	Nominal Accuracy	Repeatability	MFR. STD	MFR. STD
	29	Linearity	Hysteresis	N/A	N/A
DIAPHRAGM SEAL	30	Overpressure Protection		VTa	
	31	Calibration Certificate		Yes	
	32	Type	Model	N/A	N/A
	33	Process Connection	Size	N/A	N/A
	34	Diaphragm Material		N/A	
	35	Bottom Housing Material		N/A	
	36	Fill Fluid		N/A	
	37	Capillary Length		N/A	
	38	Capillary Material		N/A	
	39	Flushing Connection		No	
	40	Top Housing Material		N/A	
	41	Instrument Connection	Location	N/A	N/A
OPTIONS	42				
	43	Swivel Adapter: Type	Material	N/A	N/A
	44	Syphon: Type	Material	N/A	N/A
	45	Snubber: Type	Material	N/A	N/A
	46	Special Cleaning		No	
	47	Surface Roughness	Surface Rough. Cert.	N/A	N/A
	48	Electropolished	Electropolished Cert.	N/A	N/A
PURCHASE	49	Material Certification	Certification	Yes	EN 10204-3.1
	50	Manufacturer		ASHCROFT	
	51	Model		VTa	
	52	Purchase Order Number		7-0025	
	53	Price	Item Number	VTa	VTa
	54	Serial Number		VTa	

Notes: VTA: Vendor to advise

1. Nameplate with Tag number shall be without any spaces between characters.

				INSTRUMENT SPECIFICATION  PRESSURE GAUGES  Differential Pressure Gauge	
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					Rev.: B

Sheet 1 of 1

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

This specification has been revised as indicated below and described in the revision record on the following page. Please destroy all previous revisions.

Revision No.	Date	Originator's Name & Initials	Reviewed/Checked By Name & Initials	Pages
A	15-Nov-2020	Andrew Kievit	Eddie Smith	50 w/ att's
B	02-Dec-2020	Andrew Kievit	Eddie Smith	49 w/ att's
C	01-Jul-2021	Andrew Kievit	Eddie Smith	53 w/ att's
D	16-Jul-2021	Andrew Kievit	Eddie Smith	55 w/ att's

### APPROVALS

### SIGNATURES

### DATE

Lead Engineer:

Engineering Manager:

ISSUED FOR :

☒ Design    ☐ Construction    ☐ Other \_\_\_\_\_

**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

**Record of Revisions**

Rev. No.	Date	Description
A	15-Nov-2020	Initial Revision, Issued for Review
B	02-Dec-2020	Issued for Approval
C	01-Jul-2021	<p>Re-Issued for Approval</p> <p>Section 2.0 – added additional abbreviations</p> <p>Section 3.0 – added additional terminology and definitions</p> <p>Section 5.0 – added “Process Module Number” to DDR requirements</p> <p>Section 6.1 – Aligned xTOP terminology, added DPM project information</p> <p>Section 6.5 – added Fluor and FDBD Project Number requirements</p> <p>Section 6.6 – updated native file formats and versions</p> <p>Section 6.10 – Updated CW to CWX to align terminology</p> <p>Section 6.14 – Clarified Dimensional non-conformances</p> <p>Section 7.4 – Added DPM Project Information, added A2 and D2 submittal codes, updated section for buyer / owner review cycle of 10 working days</p> <p>Section 9.1 – Updated GDP requirements</p> <p>Section 10 – Updated VTOP / ETOP requirements – removed mandated table of contents, aligned VTOP / ETOP terminology</p> <p>Section 12 – minor updates to SDDC code descriptions PLUS significant updates to R01, R02, and R14, added F08, F09, F10 as noted below</p> <p>R01 – added requirement for operations manuals for equipment and sub-components to be in Danish Language</p> <p>R02 – updated code in its entirety</p> <p>R14 – changed to NDE requirements to cover all RT, UT, PT reports</p> <p>Added D17, D18, C11, L12, R24, R25, R26, R27, R28, F08, F09, F10</p>
D	16-Jul-2021	<p>Issued for Design</p> <p>Added Codes E01 through E16 (for Electrical Requisition Packages ONLY), no other updates this revision.</p> <p>NOTE: Revision bars (on right side) to indicate all revisions to Suppliers from Rev B (Revision C was not issued to Suppliers)</p>

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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 1. Introduction

This procedure defines how Seller documentation and data shall be identified and supplied to the Project. It describes the numbering system to be used, the content, format, quantity and quality of documents and data to be submitted. The methods for submission, review and acceptance of Seller documents are also described and the applicable standard forms identified.

All documents and templates referenced in this procedure will be supplied to the Seller as an electronic Information Management Package at the time of Purchase Order and / or Project Kickoff.

“The words “Company” and “Buyer” wherever used in documents specified or referenced herein shall mean “Fluor Corporation.” The words “Seller” and “Supplier” wherever used in documents specified or referenced herein shall mean Successful Bidder or Selected Contractor for the Work named in the Purchase Order or Contract. The words “Purchase Order”, wherever used in documents specified or referenced herein shall mean Purchase Order or Contract.” Reference Documents and Templates

### 2. Abbreviations

Abbreviation	Description
CTOP	Construction Turnover Package
CWX	Coreworx
EDMS	Electronic Document Management System
DDR	Document and Data Register
ETOP	Engineering Turnover Package
IBTS	Inbound Transmittal Supplier
MRB	Final/Manufacturing Record Book
OCR	Optical Character Recognition
P&ID	Piping and Instrumentation Diagram
PDDM	Project Document And Data Management
PDF	Portable Document Format
P.O.	Purchase Order
SDDC	Supplier Drawing and Data Commitment Form
TOP	Turnover Package (whether Vendor or Construction / Contractor)
VTOP	Vendor Turnover Package

### 3. Terminology and Definitions

Terminology	Description
As-Built	An As Built Drawing is a drawing that depicts the final installed configuration (physical or functional)
Coreworx	Web facing Electronic Document Management System used by Fluor

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Terminology	Description
CTOP	When used, this term indicates Construction Turnover Package, or the final documentation provided by the Construction Manager for all field purchased and / or installed components
Deliverable	Information generated by the Supplier/Contractor that is required for delivery to Fluor as per the SDDC
ETOP	When used, this term indicates the final design, construction (CTOP), supplier (VTOP), and operational documentation, used for validation and qualification of the facility and operations and maintenance for the lifetime of the facility.
Introduction Package	Introduction Management package containing information required for submission of documents
Metadata	Values that provide information related to a document that exists within the EDMS
Process Module	Process module numbers indicate the functional system or process boundary of a single unit operation for the purposes of commissioning and validation efforts
Project Collaboration System	A component of Coreworx that provides a hierarchal folder structure to facilitate data/document exchange between Fluor and external 3rd parties
Purchase Order/Contract	Wherever used in this document or documents specified or referenced herein shall mean, Purchase Order or Contract
Seller	Wherever used in this document or documents specified or referenced herein shall mean any Supplier, Contractor, Bidder, Provider or supplier of equipment and materials and/or engineering/technical services
Super skid	Super skids are large equipment assemblies that allows Process Modules or portions of Process Modules to be fabricated off-site, transported, and generally installed as a completed assembly. Super skids may contain equipment or components from multiple Process Modules.
Vendor	Where used in this document or documents specified or referenced herein shall mean any Supplier, Contractor, Bidder, or Provider of equipment and materials and / or engineering / technical services.
VTOP	When used, this term indicates Vendor Turnover Package, or the final documentation package provided by the Seller. The VTOPs provided by Sellers will feed into the final documentation package (ETOP) turned over to FBDB to support construction, start-up, operations, maintenance and validation of the facility.



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 4. Project Initiation and Submittal Standards

#### 4.1 GENERAL REQUIREMENTS

These instructions define the method of submittal, document characteristics, and quality requirements for all Supplier documentation submittals and are applicable to all Purchase Order unless **specifically** stated otherwise in the Purchase Order, applicable specifications, or written deviation granted by Fluor in accordance with the "Terms and Conditions" of the Purchase Order.

All design computations, drawings, procedures and reports shall be checked for accuracy, clarity, completeness and conformance with the applicable codes, standards and specifications before they are submitted for review.

The general requirements defined in this specification are **mandatory** in all cases.

#### 4.2 INTRODUCTION EMAIL PACKAGE

Fluor PDDM will provide an Introduction email at the Kick off meeting once the P.O./ Contract has been awarded. At this time Fluor will provide any necessary templates not defined or provided in this document within the Introduction Email. The Introduction Email will contain all the relevant information for submitting documents. Please see below the following list of files that will be provided at a minimum:

- Transmittal Template (IBTS)
- Document and Data Register Template(DDR)
- Word Document Template/Excel Template
- Drawings Borders (if applicable)
- CAD Standard (if applicable)
- Coreworx Instructions (Attachment 03)

#### 4.3 SUPPLIER DOCUMENT AND DATA COMMITMENT (SDDC) FORM

The Supplier Document and Data Commitment Form (SDDC) will be included in the Purchase Order. The SDDC form indicates what is required to be submitted and when it is required.

Note: The first document submittal required 1 week after award is the DDR as explained in section 5.0.

#### 4.4 NON-COMPLIANCE

All Technical and Non-Technical Document submissions will be rejected if files are not fully compliant with the requirements of this procedure.

- Supplied documents will also be rejected if information therein is incomplete, incorrect, illegible or if the copies are of unacceptable quality i.e., cannot reproduce clear and legible copies.
- Submittal of all technical documents and data required on the SDDC or Requisition shall be submitted to PDDM Document Control via the system identified in

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

the PO/Contract. Any document or data defined in the SDDC or Requisition transferred by methods other than defined in this specification will **NOT** be considered to have been received.

- Reasons for rejection of documents (as well as data submittals) include but are not limited to:

Document Control Rejection Basis:	
Rejection	Reason for Rejection
Incorrect document number (i.e., repeat document number assigned or document number assigned is not per the DDR)	Incorrect document classification duplicate document numbers and other such errors cause documents to be incorrectly handled and difficult, if not impossible to locate.
Document number on document does not match document number on transmittal	Fluor is unable to determine if the wrong document was submitted or if it was merely a mistake made on the transmittal
Document is illegible	Document content is not able to be seen or of poor quality that does not allow for clear reading.
Document contains embedded files	There is no way to control or track a document if it is embedded within another document. This would include Hyperlinks.  If a document is printed or generated to a PDF, the embedded content becomes inaccessible.
Document submitted in another language	Document shall be submitted, at a minimum, in the language required by the P.O.
No Fluor document number on document	Absence of Fluor document number prevents proper processing and storage of documents.
Revision to a previously submitted document submitted too soon	Per the contract Fluor is given a certain amount of time to review a document.  If a new revision is submitted too soon, it can be rejected for not giving Fluor the review time allowed.
Same revision issued in another submittal	It is unclear whether the intended revision of the document has been submitted, and multiple copies of a single revision cause confusion by information consumers.
Document is a drawing, but was submitted with a cover sheet	Drawings are required to have a title block containing the Information defined in this Attachment
Incorrect Template	Document submitted not using the Standard Document and Drawing templates.
Incorrect IBTS or no IBTS submitted	An IBTS form must be submitted to PDDM with each Supplier submittal. The IBTS form must match the documents being submitted.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Document Control Rejection Basis:	
Rejection	Reason for Rejection
Locked or write protected file	Document submitted is locked or write protected for editing.
Multiple CAD files within one drawing file	Only one drawing is permitted within each CAD file.

Document submissions which are rejected on the basis of Supplier failure to comply with Contract or specification requirements:

- Are **not** considered by Fluor to be submitted.
- Will **not** initiate Fluor review of Documents contained in the submission.
- Do **not** trigger any PURCHASE Order requirement for Fluor response time.
- Shall be corrected and resubmitted by Supplier. Supplier's correction of documents shall not be considered by Fluor to be justification for a Change under the Contract.
- Shall **not** be recorded in any Supplier system as submitted.

Any subsequent corrected submission of a document must be recorded in Supplier document management system, transmittals and other reporting systems using the date of the corrected submission.

### 5. Document and Drawing Register (DDR)

The Document Drawing Register will be submitted after award to show the documents and data that the Supplier plans to submit to meet the requirements of the SDDC. The Supplier shall ensure that the DDR contains all documents for which it is responsible, including those generated by its sub-Suppliers.

The Document Drawing Register will be updated and provided at least once per month as part of the progress reporting requirements of their purchase order. The supplier may also be required to submit an updated DDR to provide accurate forecasts of when documents will be submitted or re-submitted.

The DDR shall be submitted per the following requirements:

- Supplier shall constantly maintain all attributes of the DDR to accurately reflect the status of each document.
- Supplier shall submit the DDR in native format (MS Excel) using template supplied in the Introduction Email to Fluor one week after PO is issued and every month thereafter until the PO is closed.
- Supplier shall not remove any record from the DDR including any CANCELLED documents.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Supplier shall note a deleted flag and a reason for the deletion in the DDR for each document that it is no longer required.
- Supplier shall use the DDR as the single master list of Document deliverables and status.
- Supplier may manage the DDR as part of its document management system provided that the required attributes and records can be used to generate the DDR in the required structure and format.

DDR Attributes and Definition	
Required Attribute	Description
PO/Contract Number	Supplier/Subcontractor Purchase order/Contract number
Process Module Number	Process Module Number as assigned by Buyer, included on individual equipment datasheets. The Process Module Number is synonymous with "System Number"
Supplier Document Number	Supplier Document number per Specification <
Fluor Supplier Doc Number	Assigned by Fluor
Owner Document Number	As required by SDDC and PO Engineering Notes/Attachment C
Standard Doc Type	SDDC Document Type (Refer to Attachment 1 )
Title	Document title
Priority Code	As defined in the SDDC
Submittal Type	As defined in the SDDC
E File Name	Document electronic filename
Revision	Revision code
Revision Date	Date of revision issue
Issue Purpose	The issue purpose of the document's most recent transmission
SDDC Due Date	Date document is due as per the SDDC Template
SDDC Reforecast Date	Only if Approved
Return Status Code	Most recent return code for the current revision of the Document
Actual Design Date	The actual date the document was transmitted for design.
Other Document Number	Suppliers document number
Other Revision	Suppliers revision number
Deleted Flag	If the document has been voided or for some reason no longer expected to be produced or acquired, this field should indicate 'y', otherwise it should be 'n'
Void Reason	The reason for cancelling or otherwise voiding the record from the DDR

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

DDR Attributes and Definition	
Required Attribute	Description
Old Document Number	If the document was previously issued under another number, that number should be indicated here. Otherwise, the field shall be left blank.
Remarks	General remarks for the document

### 6. Overall Document Requirements

#### 6.1 QUALITY REQUIREMENTS COMMON TO ALL DOCUMENT AND DRAWING SUBMISSIONS

All submittals of documentation shall be electronic or hard copy, and shall meet the following quality requirements. Note: Only the VTOP may require at least one (1) hard copy, refer to SDDC Form for VTOP submittal requirements. All other submittals will be electronic.

- Legibility and contrast of the documents shall be such that every line, number, letter and character shall be clearly legible.
- Reproduction quality shall be of such clarity that a third generation copy will meet the legibility requirements.
- Documentation shall be right reading from the image side and shall have dark lines on a light background (positive).
- Documentation shall be formatted in a neat professional manner.
- Documents, when applicable, shall contain a table of contents, list of figures, and tables of applicable, reference or complementary documents. Adobe Acrobat pdf files will be bookmarked per Table of Contents or by Sections where applicable. PDF files should be text searchable and prevent unnecessary scanning that makes text recognition difficult. Native documents should be "printed to PDF" in order to maintain searchability. It is understood that some PDFs will not be searchable.
- Documents shall be in English (UK) language unless otherwise specified.

All documents and drawings shall have the following information included on the document / drawing or the cover sheet for the submittal:

- Project: FDBD North Star DSM Expansion Project -OR- FDBD North Star DPM Project
- PO Number: A8WQ-x-xxxx -OR- A8WR-x-xxxx (x-xxxx indicates the last five digits of the RFP number)
- Process Module Number: (will be assigned for each equipment tag)

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Equipment Tag(s): (refer to PO bill of materials)
- SDDC Code(s): (refer to codes provided in this specification)

### 6.2 PDF FILES (ADDITIONAL REQUIREMENTS):

- Rendering directly from authoring application as content searchable PDF format with commenting enabled.
- Scanned directly from the hard copy documents containing wet signature and/or official stamp.

### 6.3 SCANNING DOCUMENTS, THE SUPPLIER SHALL ENSURE:

- Documents are scanned at their original size directly from the original hard copy
- Images are scanned in an orientation that allows viewing without rotation
- The minimal scan resolution is 300 dpi. For scans of handwritten documents, the minimal scan resolution shall be 600 dpi.

As much as possible, the quality of scanned documents containing characters shall be measured by running an OCR scan on a printed version of the document and majority of the characters on the document shall be recognized without errors.

### 6.4 HYPERLINKS

- Hyperlinks can only be used between information in the same file.

### 6.5 DOCUMENT AND DRAWING TEMPLATES

Some documents, such as equipment lists, instrument lists, valve lists, spare parts lists, etc. may be required to be provided in Buyer supplied templates, when required in the Purchase Order.

All documents and drawings created by Supplier may be created using Supplier's standard drawing and document templates, unless Buyer supplied template has been provided. The templates shall include as a minimum the following:

- Document Cover sheet applied to the front of documents
- Supplier Title Block DWG shall be applied to all drawings
- A unique document number
- Suppliers unique drawing number (if applicable)
- Revision
- Fluor Project number (A8WQ for North Star Project DSM Expansion Project, A8WR for North Star DPM Project)
- FDBD Project Number (600123 for North Star DSM Expansion Project, 600084 for North Star DPM Project)
- Document Title
- Process Module Number(s) the document applies to

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Tag Numbers the document applies to
- Purchase Order, Contract or agreement number
- Issue date
- Issue purpose
- Item Names (for Tags)

### 6.6 DOCUMENT SIZE AND FORMAT

#### Hard copies

- Hard copies will only be supplied where specified on the SDDC form. It is the intention that all drawing and data submittals and final turnover package be provided as electronic files / documents.

#### Electronic Files

- During the project execution, Supplier must submit all document electronics files (drawings, spreadsheets, etc.) in Adobe Acrobat Portable Document Format (.PDF) even if native formats are required for the final documentation (Specified on SDDC).
- Native files of Seller generated documents may be requested by Buyer during the course of design. Native files of all Seller generated documents shall be provided with the final VTOP. Native files shall be provided in the following software and version.

Software	Version
Microsoft Word	2016
Microsoft Excel	2016
Microsoft Visio	2016
Microsoft Project	2016
Autodesk AutoCAD	2020
Autodesk Navisworks Freedom	2021
Portable Document Format (PDF)	

**Any additional software must be sent to Buyer / Owner for approval.**

- Native file electronic submittals shall follow the following formats and provisions

Manuals, Reports,  
General  
Documentation

Microsoft Word 2016 for Supplier generated documents and PDF files for standard manuals of items/components bought by Supplier

Spread Sheets

Microsoft Excel 2016

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Drawings	AutoCAD 2020 / Revit / Navisworks 2021, DWG Format (preferred)
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As-Built Drawings	1) Blacklined PDF files of all as-built seller generated drawings and documents. Red lined PDFs of owner / buyer generated drawings (P&IDs for DCS controlled equipment). Red lined PDFs for other seller generated documents (such as weld maps, piping isometrics, weld logs, etc.)
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	2) Control Drawings, AutoCAD 2020 / Revit / Navisworks 2021, Plant 3D 2021 (.DWG preferred)
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3-D Model	.RVT or 3D DWG is preferred <b><u>in addition to</u></b> .NWC, alternative formats (such as .STP) can be agreed to in the Purchase Order. (See Section 12 below, Code 'D16' for additional details on this requirement.)
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- All other document formats must be pre-approved by Fluor at least ten (10) working days prior to initial submittal by Supplier being submitted to Fluor Document Control.
- Minimum document size shall be A4 for most documents / data. Lists (i.e. equipment, instrument, alarm and interlock, etc.) should be generated for printing as A3. All drawings and data shall be clearly legible and readable when printed at the normal size of the generated document. General arrangement drawings and flow diagrams (i.e. Piping and Instrumentation Diagrams) shall be generated for printing as A1 without loss of detail, unless an exception is previously agreed upon in writing
- Files shall not be write protected or secured from copying or combining in any way. If documents are secured or password protected, Supplier will be requested to remove and resubmit.
- As much as possible, drawings should be submitted in monochrome (black & white) only, unless specifically requested otherwise by Buyer. This does not apply to any of the Installation, Operating, and Maintenance manuals and specific documents.
- As much as possible, PDF files must be text searchable or scanned Optical Character Recognition (OCR) from images of handwritten, typewritten or printed text.



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Documents must be converted in PDF so that they can be read on screen without needing to rotate any page.
- Electronic files must be generated directly from their native software tool. If only a scanned image is available it must be of good clear quality
- Document electronic size must be limited to prevent from transmission problems. Anything over 15mb must be split correctly and or pre-approved by Fluor PDDM.
- A document having more than one sheet must be defined as only one electronic file under one common document reference in PDF format, with as many sheets as necessary merged in the file. The common document reference must appear on each page of the document.

### 6.7 DOCUMENT NUMBERING

All Supplier documents shall bear the following documents numbers:

- Fluor document numbers
- Supplier's own document number
- Client Numbering, as required, in the purchase order

The document numbers are to be controlled by Supplier's document management system.

Document number shall not be changed after the document has been submitted and accepted by Fluor.

Supplier shall ensure that a single electronic file does not contain multiple document numbers.

Supplier shall assign a unique Fluor document number in each of the following specific cases:

- Any Document with a unique Supplier/Fluor Document number
- Any Document that requires individual revision control
- A single document may only contain one revision
- Each data sheet to describe a single Component except and only to the degree that multi-tag data sheets are permitted where a single data sheet defines an assembly of items such as a valve that includes position switches.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Each drawing related to wiring and terminations to describe a single enclosure.
- Sheet numbers shall not be used unless pre approval is received from Fluor.

### 6.8 FLUOR DOCUMENT NUMBERING STRUCTURE

The structure of the Fluor Document Number is the PO/Contract Number-Sequence Numbers starting at 00001.

Discipline Code	-	PO Number	-	Sequence Number
4	-	0701	-	00001

Example number: 4-0701-0001\_R1.pdf

### 6.9 ELECTRONIC FILE NAMING

All electronic files must adhere to the following electronic file naming convention

- *Document Number\_Revision Number*
- *Example: 4-0701-0001\_R1*

### 6.10 SUPPLIER'S OWN DOCUMENT NUMBER

Supplier is encouraged to use any of their own document numbering system, this number can/will be captured in CWX via the DDR and IBTS Forms. Seller's VTOP files must be numbered in accordance with Section 10.

### 6.11 CLIENT DOCUMENT NUMBER

Supplier should assume that the Client will have their own unique document numbering system that must be on all documents and tracked in CWX via the DDR and IBTS Forms.

If a Client Document Number system is to be used it will be specified.

### 6.12 REVISION CODES

Revision codes will be per Supplier standard and will have an associated description that is clear on what the revision entails, i.e., Revision A – "Issued for Review" or Revision 0 – "Issued for Construction".

### 6.13 VOIDING DOCUMENTS OR DRAWINGS

Below are example reasons that a document or Drawing may be voided.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- The Document or Drawing is no longer needed (caused for instance by a scope or design change) or the content of the Document or Drawing has been incorporated into another Document or Drawing.
- The Document or Drawing is assigned a new document number because it contains information that has been transferred to another Document or Drawing.

Supplier shall execute the following steps when a document or drawing is VOIDed:

- On drawings, the word "VOID" shall be placed across the face of the drawing area. All other documents, it shall be placed on the first page.
- Documents that are voided because they contain information that has been transferred to another document shall have the following note placed near the title or title block: "See document no. "XXX" and the new document shall reference the previous number ("XXX") for traceability. All original Title block and revision history information shall be retained in the new Document. The original document number shall be noted in the revision history table of the new document. The new Document's revision shall be set to one increment higher.
- Supplier shall transmit the Document to Fluor and to any other organization to which it has previously been transmitted.
- The Supplier's DDR shall be updated to show that the Document has been voided and if applicable that the contents have now been applied to another document.

Document numbers of voided documents or Drawings shall not be reused unless specifically authorized by Fluor.

### 6.14 AS-SUPPLIED - CERTIFIED FINAL AND AS-BUILT DOCUMENTATION

The requirement of this section applies to any final documentation including as-supplied, certified finals or as-built where applicable, and as required by Purchase Order.

Where required, Supplier shall develop and submit to Fluor all final documentation which fulfils Purchase Order requirements.

Any proposed deviation from Fluor requirements shall be clearly indicated to Fluor for review. Fluor acceptance of any deviation from the final documentation requirements of the PURCHASE ORDER is strictly limited to official Change Order processes.

In order for Documentation to qualify as as-supplied, certified final or as-built it must represent the actual equipment at the time of its issue. This includes but is not limited to compliance with the items below:

- The Document shall represent Supplier, manufacturer or supplier's component as-supplied and any aspect that may have been modified by Supplier or any of its Subcontractors.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- The Document shall represent the actual installed/supplied state of each Component or structural object within allowable tolerances.
- All dimensional non-conformances exceeding the specified tolerances must be noted and noted as accepted or corrected on the appropriate drawing and resubmitted as As-Built status.
- The Document shall represent the proper attribute information about items shown on or referenced by the document.
- The Document shall include the changes or modifications made for constructability, access, or operability during fabrication, commissioning, or handover to operations (as applicable).
- The Document shall represent any changes that may represent a safety hazard to someone working on a system (e.g., changing electrical terminations for a motor lead in a junction box).
- The Document shall conform to the electronic format requirements. Manually updated paper copies are not acceptable.
- If the Document was generated by a system such as the 3D design system, Intelligent P&ID system, etc., the final modifications shall be made in the authoring application, never to the extracted document even in native format.

### 7. Submission of Electronic Documents and Data

#### 7.1 COREWORX

ALL SUBMISSION WILL BE SENT USING THE FLUOR COREWORX PLATFORM.

- Access to Coreworx Website: Upon receipt of a Purchase Order, Supplier will also receive an e-mail from Fluor requesting information needed to register for access to the Coreworx website. Upon submission of the required information, Supplier will receive an e-mail with further instructions on how to access the Coreworx website.

#### 7.2 SUPPLIER INBOUND TRANSMITTAL (IBTS) FORM

000.206.F0550 Supplier/Subcontractor Submission Form (IBTS)

#### 7.3 SUPPLIER TRANSMITTAL NUMBER (IBTS)

Supplier transmittal numbering will follow the structure below:

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

PO Num-ber		Inbound Transmittal		Transmittal ID		Sequence No.
NNNNN	-	AAAA	-	AAA	-	NNNN

**Where:**

**Sending Company:** Purchase Order Number to be provided.

**Inbound Transmittal Supplier:** IBTS

**Transmittal ID Character:** TRN

**Sequence Number:** 4 digit sequence starting at 0001

**Example:** 4-0701-IBTS-TRN-0001

**Format Description:** "A" indicates an alpha character, "N" indicates a numeric character. Required embedded hyphens are shown.

### 7.4 ELECTRONIC TRANSFER OF DRAWINGS, DOCUMENTS, MANUALS

Electronic Drawings, Documents and Manuals shall be uploaded to the Coreworx website in accordance with specific instruction provided by Project Document and Data Management (PDDM) Group.

- Email notification, with transmittal (not actual documents), shall additionally be sent to Fluor's PDDM group only to notify that documents with associated metadata have been uploaded to Coreworx, at:

**Project Document and Data Management (PDDM) – North Star DSM Expansion Project**

[Fujifilm.DSM.PDDM@Fluor.com](mailto:Fujifilm.DSM.PDDM@Fluor.com)

**OR**

**Project Document and Data Management (PDDM) – North Star DPM Project**

[Fujifilm.Fillfinish.PDDM@Fluor.com](mailto:Fujifilm.Fillfinish.PDDM@Fluor.com)

Suppliers will be required to email notification to the proper project above to ensure that the document is logged in correctly and transmitted to the correct project team.

Suppliers shall provide a separate email for each Purchase Order Submission. Subject line of the email shall include Supplier name and Purchase Order number (include project number A8WQ or A8WR for DSM or DPM project respectively).

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

In all cases document submissions shall be uploaded to Coreworx with an electronic transmittal.

- Return of Documents from Fluor: Fluor will review Supplier documents for conformance to Fluor requirements. **Such review shall not be construed to relieve or mitigate Supplier's responsibility for accuracy or adequacy of design, materials and/or equipment represented thereon. Notification to proceed does not constitute acceptance nor relieve Supplier of any liability. Acceptance is accomplished under the terms of the Purchase Order.**

In all cases, an electronic transmittal will be returned to Supplier of all documents submitted to Fluor marked as follows:

- **A1 Data Complete - No Comments - Do Not Resubmit**
- **A2 Data Complete – With Comments – Do Not Resubmit**
- **B1 Data Complete - With Comments - Proceed - Resubmit**
- **B2 Data Incomplete - With Comments - Proceed - Resubmit**
- **C1 Data Incomplete - With Comments - Hold Work - Resubmit**
- **D1 Received For Info Only - No Comment - Do Not Resubmit**
- **D2 Received For Info Only – With Comments – Do Not Resubmit**
- **V1 Void**
- **Q1 Quality**

All documents returned with B1, B2, C1 or Q1 status code shall be resubmitted with corrections as requested on the document. In the event of disagreement, the Supplier shall contact Fluor immediately to resolve differences. Acceptance of changes shall not relieve Supplier of any contractual obligations to Fluor.

Fluor will forward to Supplier, via the secure Coreworx website, a copy of the transmittal and Adobe Acrobat .pdf files showing the status code assigned.

Unless otherwise specified in the Contract or Purchase Order, all documents submitted to Buyer / Owner for review shall allow for a **2 week (10 working days)** review cycle. Seller's schedule and quoted delivery shall accommodate this review period.

Unless otherwise specified in the Contract or Purchase Order, all documents returned to Supplier with comments must be resubmitted to Fluor **within 10 working days** after receipt by Supplier ('10 working days to be agreed upon between the Buyer and Supplier at kickoff meeting, to be held after award of the contract).

Reviewed documents having received a C1 status code to which the Supplier originates changes shall be resubmitted to Fluor for review. These documents shall not be

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

included in the final Documentation/Manuals without previously being reviewed by the Fluor.

Supplier shall not modify a Document that has been issued for Fluor review until either Fluor comments have been returned or if applicable, the time allocated to Fluor review by the Contract/Agreement has expired.

A brief description in tabular form of each revision shall be given with the authority and date of the revision in the title block. Terms such as "Latest Revision", "General Revision" or "Per Buyer Comment" shall not be used.

### 8. Supplier Catalogue Information

Supplier catalogue information which is not under the control of the Supplier should include the following information:

- Cover Sheet from Introduction Email Package
- Equipment package number
- Purchase Order number
- Fluor Document number
- Revision
- List of applicable tag numbers
- Process Module tag number(s)

PDFs and/or scanned images shall adhere to the requirements of this specification.

### 9. Document Quality Requirements

All reporting, receiving, inspection, testing and submitted documents are to follow Good

Documentation Practice (GDP). These general guidelines for these are as follows.

#### 9.1 INDUSTRY STANDARDS FOR RECORDING DATA DURING TESTING ARE REQUIRED FOR DOCUMENTATION INTEGRITY AND TO PREVENT MISINTERPRETATION.

- All manual entries shall be clearly printed and legible.
- Dates shall be recorded as Day Month Year (ex: 01Jan2021 or 01Jan21) Hyphens or spaces between day month year are acceptable, but not required.
- Use black or blue indelible ink. Red ink is ONLY acceptable for red-lined as-built drawings (such as Buyer / Owner P&IDs, weld maps, isometrics, etc.)

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Correct any entry errors with a single line through the error; initial and date each correction. Add notation as to the reason for the correction with initials and date of person who made the correction.
- Corrections should be made by the person making the original entry at the time of the original entry when possible. A correction not made at the time of the original entry requires a comment explaining the correction delay with initials and date of the person who made the correction.
- Partial cross outs of words, dates, numbers, etc. are not acceptable. Always cross out and correct the entire word, date, number, etc. for the entry.
- Do not use correction fluid or other correction mediums.
- Do not “obliterate” or write over entries or data. The original information must be legible.
- Initial/sign each entry or page.
- Do not use ditto marks or arrows.
- Do not back date any entry / entries. When adding an entry after the date, use the current date with an explanation of why the data entry was not initially completed.
- Record data while performing an operation, not after.
- Review acceptability of data before signing. If unacceptable, explain what action will be taken.
- Fill in all spaces. Mark unused spaces as “N/A” or line with initial and date.

### 9.2 ALL SUBMITTALS OF DOCUMENTATION SHALL MEET THE FOLLOWING QUALITY REQUIREMENTS.

- Legibility and contrast of the documents shall be such that every line, number, letter and character shall be clearly legible.
- Reproduction quality shall be of such clarity that a third generation copy will be legible and readable.
- Documentation shall be right reading from the image side and shall have dark lines on a light background (positive).
- Documentation shall be typed and arranged in a neat professional manner. Handwritten documents are acceptable if they comply with all other requirements.
- Documents, when applicable, shall contain a table of contents, list of figures, and tables of applicable reference or complementary documents.



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- White-out or correction fluids are not allowed. Line thrus will be used with a single straight line so entries are legible using black or blue indelible ink. Corrections/changes shall be signed and dated by person making change/correction, with a succinct reason for the change.
- Document date is to reflect actual issue dates. No "back dating" allowed.
- Where practical all drawings shall be to scale. Dimensions "not to scale" shall be indicated by a wavy line under the dimension.
- Where applicable all drawings shall indicate "North" and shall list all related reference drawings.

### 10. Final Documentation Manuals

Seller shall compile final documentation of the fabricated or installed equipment in the form of electronic Turnover Packages (TOP). Final TOPs (VTOP or CTOP) are compilations of the final documents related to the material supplied as part of a purchase order or contract for use in the installation, operation, maintenance, and validation of the supplied material. This section defines the minimum contents and format of each TOP.

Where systems (i.e. skids, equipment modules, packaged equipment, etc.) are supplied by Seller, TOPs shall be organized by Process Module Numbers. Where individual pieces of equipment (vessels, pumps, filters, etc.) are fabricated to be incorporated into a Process Module by Others or supplied as individual pieces of equipment for installation at site by Construction, the final documentation provided by the Seller shall be organized by Equipment Tag Numbers. Where multiple bulk goods such as valves, instruments, etc. are manufactured as a lot, one TOP may satisfy multiple tag numbers.

Completeness and correctness of the TOP is critical to the validation, operation, and maintenance of the equipment. All documentation required per column IX of the Supplier Drawing and Data Commitment (SDDC) Form is required to be included in the TOP.

Final TOP Document Packages must be provided in electronic format via PDF. All electronic documentation must be true and exact copies of the documentation generated or supplied by sub-suppliers (i.e. paper documentation received with components). Where documents are originally generated in electronic format by the Seller, the native formats shall be included in the electronic documentation as well.

All Final Documentation Manuals will require a table of contents to be pre-approved by Buyer and Owner prior to the manuals being submitted. Multiple items on a Purchase Order shall not be combined into a Final Document data book, unless agreed with the Buyer when Table of Contents is submitted. It is intended that the table of contents and format of the TOP mirrors the SDDC Codes.

#### 10.1 FINAL DOCUMENT MANUAL (TOP) FORMAT AND CONTENT

- Electronic copies of Final Vendor (or Contractor) Turnover Package (VTOP / CTOP) shall be submitted as one compiled Acrobat .PDF file containing the full contents of each data book which shall be bookmarked per Table of Contents or

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

by section. Bookmarks shall be hyperlinked. Where file size exceeds 500 MB, the PDF shall be broken into multiple files. Traceability and connectivity must be maintained for multiple files.

- Electronic filenames shall follow the following convention: {Process Module Number of Equipment Tag Number} [C/V]TOP\_{month and year} {seller name}-{sequential number}.
  - Example 45-BR-12345 CTOP\_NOV2020-FLUOR-01 (or -02, 03, etc. depending on quantity of files)
- The TOP shall be prepared and submitted for each individual process module number or by tag number (if not provided as part of a system), approval from Buyer must be obtained by Buyer if planning to combine multiple tag numbers into a single TOP.
- The TOP coversheet shall specify Seller name, TOP number, date, process module number and / or equipment tag number, serial number, Buyer's PO number, and all SDDC Codes that are included in the TOP.
- The TOP Index (or Table of Contents) shall reference tag numbers and SDDC codes for each line.
- The TOP shall include applicable SDDC codes and pertaining equipment/instrument tags (must be searchable) at top of each submittal document.
- The TOP shall include SDDC code(s) and equipment/instrument tags for each section in PDF Bookmarks
- Material Test Reports (MTRs) shall have original heat number text and be traceable back to a Weld Map or BOM with corresponding heat number.
- The overall intent of the TOP formatting is to be able to find any given document in a reasonable amount of time (i.e. 1 to 2 minutes).

### 10.2 OTHER REQUIREMENTS

- Electronic file copies of data books shall not be restricted from further copying or distribution if Buyer or Owner elects to do so.
- Where Final include documentation submitted as part of the SDDC requirements the data book shall not be submitted until all documents have been returned to the Supplier with Document code A1 or D1. Final documentation manuals shall incorporate any Buyer comments on status B1 documents.

## 11. Documents Shipped with Equipment

One hard copy of the MDR, IOM and Preservation Procedures or a DVD shall be included with the equipment shipment (shipping address per P.O.). The Procedures should be listed on the BOM for the shipment.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 12. Descriptions of dwg/doc Codes

DWG/DOC Codes have been referred to as "SDDC Codes" in the past.

Following is a description of the Supplier PROVIDED information that is REQUIRED for each document type in order for the Supplier to meet his legal obligations and commitments pertaining to the "Supplier Document Submittals" for this Purchase Order.

A submitted document can meet more than one DWG/DOC Code below, in that case state all the applicable codes on the document and in the IBTS Form so completion of the requirement can be tracked in CoreWorx.

#### 12.1 DRAWINGS

##### **CODE:** **DESCRIPTION:**

##### **D01** GENERAL ARRANGEMENT DRAWINGS (Plan, Fabrication and Elevation Drawings)

Drawings shall include:

- Drawing format is to be A0 or A1 (minimum size), CAD generated
- Equipment Dimensions, Weights (total assembled and operating), and Center of Gravity
- Elevations Referenced to Finish Floor Elevation
- Panel Locations
- Piping/Electrical Connection schedule indicating Type of Connections, Sizes, and Ratings.
- Locations (include dimensions with reference points). A reference point will be provided by Purchaser to the Supplier. All piping connections are to be dimensioned from this reference point. Supplier tolerances on the dimensions are to be provided on the drawings. Deviations from these tolerances will be cause for rejection. See FAT Protocol Section.
- Anchor Bolt Requirements including locations and sizes
- Clearances required for major Component Removal
- Equipment Materials of Construction
- Bill of Materials, including call outs with manufacturer / model with significant surface finish and material of construction
- Access for maintenance, removal, etc.
- Breakdown of how units will be shipped, Number of Pieces, Subassemblies, etc.
- Leveling Instructions or Tolerances, and Special Handling Instructions, if any.
- Equipment assembly details, if applicable.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- For equipment with attachments, such as baffles or lugs, detail drawings shall be provided as either a separate D-5 Detail Drawing or as an added page to the main general arrangement.
- Drawing revisions shall be clouded to identify where changes have been made.

### **D02**     PIPING & INSTRUMENTATION DIAGRAMS (P&IDs)

Drawings shall include:

- Drawing format is to be A0 or A1 (minimum size), CAD generated
- Single line Interconnection Diagram of all pieces of equipment.
- Description of all equipment including Design Capacities and Parameters
- Physical data (volumes, material of construction, motor HP sizes, voltage, phases etc.)
- List of all Plant/Facility "services" required including sizes, capacities, temperatures, pressures, flowrates, etc. All line sizes are to be included on the P&IDs. All reducers, tees, connections (tri-clamp, flanged) etc. are to be indicated. All lines are to be numbered and this number is to include pipe material spec. Supplier shall follow Purchaser's standards as agreed to by Purchase Order.
- Instrumentation and Controls (showing interlocks, e-stops, or any other required controls per the client's P&ID lead sheets)
- Directions of Flow
- Set point for regulators and relief devices.
- Process ranges for instruments. Calibration range shall be shown on instrument (ISA) datasheets.
- Identification numbers for all connection points to the equipment.
- Slopes and drainability requirements
- Control limits on provided utilities
- Equipment, Instrument, and Valve tag numbers (Note: Supplier will be required to utilize Purchaser's Tag Numbers. Tag block will be allocated after P.O. is placed.)
- Both automatic and manual valves are to be numbered.
- Type of connections whether welded, tri-clamped, flanged, etc.

### **D03**     FOUNDATION DIAGRAMS AND LOADING REQUIREMENTS (INCLUDING SEISMIC)

Drawings shall include: (If not included in the General Arrangement Drawings, Code D-1)

- Dimensions
- Loading requirements at supporting point.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Wind and Seismic Design Requirements Confirmation
- Any special requirements
- Platform design requirements

### **D04** CATALOG INFORMATION, CUT SHEETS, ETC.

Information shall include:

With Quotation:

- List of sub-suppliers used. Supplier literature / cutsheets for all major pieces / components of equipment being proposed. Literature shall include approximate dimensions, materials of construction, layout considerations, typical utility requirements, etc.
- Completed equipment data sheets

After Purchase Order:

- Cut sheets for all items for which "design drawings / blueprints" will not be supplied (such as valves, instruments, etc). These must include dimensions, locations of piping/electrical connections, types of piping/electrical connections, material of construction, etc.
- Catalog information including cut sheets, manufacturer's standard catalog cutsheets, brochures, illustrations, or other standard descriptive data including sub Supplier information shall clearly include which item, part number(s), etc. that applies. This shall be done by clearly marking the applicable items.
- All sub-supplier's applicable mechanical, electrical, and instrumentation cut-sheets.
- Bill of Materials
- Material Requisitions
- Utility requirements
- C-7 ISA Style Datasheets shall be submitted concurrently
- C-10 Calculations (relief valve sizing, control valve sizing, etc) shall be submitted concurrently

### **D05** DETAIL DRAWINGS

Detail drawings may include:

- Plan and elevation drawings for all "components" which are assembled to achieve a completed, functional piece of equipment and are not shown in adequate detail on the General Arrangement type drawings.
- Bill of Materials for component or detail drawing, including material of construction.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- All space needed for operation and/or maintenance of equipment, including motors, instruments, valves, pump seals, agitators, agitator seals, heat exchangers, drives, electrical power panels, sprayballs, mechanical seals, in-tank couplings etc.
- Areas on design drawings where details must be seen and reviewed to ensure proper quality, mating, assembly, machining, cleanability, etc.
- Cross section views of areas noted above.
- Significant surface finishes
- Connection or weld details with WPS number(s) indicated.
- Details of spray-balls and no-foam inlets.
- Details of all internal baffled and vortex breakers.
- Details of support and lifting lugs with allowable loads
- Critical speed(s)

### **D06**     MECHANICAL SEAL CROSS SECTION. CERTIFIED BY SEAL MANUFACTURER

Drawings are required for ALL mechanical seals included in the scope of equipment package.

- Identified parts list
- Bill of Materials
- Seal Manufacturer's Certification
- Seal Flush Details
- Seal Manufacturer's identification number to facilitate reordering

### **D07**     ELECTRICAL COMPONENTS

Information required for

- All drives used on the equipment, heaters, VFD's, electrical panels, and motor control devices (starters, etc)

Information shall include (as applicable):

- Manufacturer's name
- Model Number, Catalog Number, etc.
- Photo of motor nameplate shall be provided upon receipt of motor at Supplier shop.
- Design characteristics including any efficiencies, HP, RPM, Voltage, Amperage, Cycles, Phase requirements
- Frame size and type of enclosure
- Dimensions
- Bill of Materials including materials of construction

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Insulation class on wiring including insulation classification on items for multiple starts
- Electrical Area Classification
- Electrical component environmental limitations
- Wire Sizes

### **D08**     INSTRUMENT LOCATION DRAWINGS (IF NOT INCLUDED IN THE GENERAL ARRANGEMENT DRAWING, CODE D-1)

Drawings shall include:

- Location in both plan and elevation, of all instrumentation included with Supplier's equipment.
- Buyer / Owner assigned Instrumentation Tag Numbers

### **D09**     INSTRUMENT LOOP/SEGMENT DRAWINGS

Drawings shall include:

- Identity of all components by Buyer assigned tag (instrument) numbers
- Connections and Inter-connection wiring between all associated equipment, local panels, field apparatus, etc
- One loop per drawing or multiple loops per drawing when organized by I/O block or type.
- Drawing format is to be A3 (minimum size), CAD generated
- Terminal Numbers of instrumentation wiring
- Junction boxes
- Wire Colors
- Interconnecting tubing between instrument connections
- Cable Numbers
- Wire Numbers
- Control System I/O

### **D10**     CONTROL PANEL DRAWINGS

Drawings shall include:

- Drawing format is to be A3 (minimum size), CAD generated
- Panel weights and dimensions of assembled panel and supports
- Owner assigned tag numbers shall be shown on the panel drawings
- Terminal Strips
- All Electrical and Instrument Components mounted in the panel
- Main Disconnect/Breaker
- Control transformer

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Wire routing
- Pneumatic tubing routing (if applicable)
- Panel and component mounting dimensions
- Purchaser assigned tag number, node location or component label.
- Anchor bolt data (locations, sizes, etc.)
- Panel Face Layout (Lights, P/Bs, Switches, Instruments, etc.)
- Wire / cable / conduit entry points
- Pneumatic entry points (if applicable)
- Enclosure Panel NEMA Rating
- Bill of Materials
- Area Classification
- Fuse chart, providing the fuse number and rating.

### D11 WIRING SCHEMATICS

Drawings shall include:

- Drawing format is to be A3 (minimum size), CAD generated
- Terminal Strip/Wiring numbering
- Starters, Overloads, Protective Devices
- Transformers
- All electrical components.
- Instrumentation (electrical connections)
- Bill of Materials
- Wiring diagram showing device termination, termination to JB, controller, etc.
- Wire numbers

### D12 INSTRUMENT INSTALLATION DETAILS

For instruments requiring mounting by Purchaser in field - drawings shall include:

- Detailed installation drawing
- Bill of Materials detailing all installation materials required for the installation and who is responsible for supply of materials.

### D13 SKID INTERCONNECTION AND/OR RE-ASSEMBLY DRAWINGS

Interconnection details are required for:

- Communications networks and local data for monitoring and control
- Utility Connections



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Cable Schedules
- Pneumatic / hydraulic schematics

Where equipment is supplied in multiple pieces / skids, drawings shall detail:

- Piping interconnections – See Paragraph D01
- Electrical interconnections– See Paragraph D10
- Instrument interconnections
- Piece numbers for components requiring assembly
- Drainability
- In cases where there are multiple shipped loose pieces a clear Skid/Module Re-Assembly Plan shall be submitted. This shall include markings on physical shipped items in order for a 3<sup>rd</sup> Party to be able to re-assemble.

### **D14**     DETAILS FOR EACH O-RING SEAL

Sketches, drawings and catalog cut sheets shall be provided for each hygienic seal in the proposed equipment showing Hygienic Seal Method. e.g. manway gaskets to ensure no crevices or pooling or potential for biogrowth.

### **D15**     PIPING ISOMETRIC DRAWINGS

Piping isometrics shall include:

- All information required for fabrication and installation such as dimensions support locations, bill of material with material of construction and surface finish, and piece mark details.
- Line number, including Line Class Specification,
- Valve orientations, line slope, pipe supports, and termination points
- Welds identified, including welder identification and bill of materials with make and model of components along with their corresponding heat numbers
- Valves with tag numbers
- Pipe mounted instruments with instrument tag numbers
- Flow direction.
- Slope and elevations
- Weld numbers
- P&ID Number and Sheet Number
- Drawing size shall be A3

### **D16**     3D MODEL IN ELECTRONIC FORM

Provide a 3D Model in electronic form. The format is to be agreed on prior to the Purchase Order placement.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- The model file shall be dated in the filename
- The model file transmittal shall indicate the revision of General Arrangement
- A log including a snapshot and description of the change shall be included with the model transmittal. This is in reference to points of connection and dimensional changes.

### **D17**     General Arrangement Drawing for Recommended Lifting Location and Method

Provide an arrangement drawing showing proper lifting arrangements and methods for safely rigging and / or lifting equipment. Drawings should show details of the following:

- Rigging / lifting details for setting / installing equipment
- Rigging / lifting details for major component replacement
- Proper lifting points and methods if lifting equipment from below
- Recommended slings, spreader beams, frames, etc. and attachment points, angles, dimensions for proper lifting

### **D18**     Rigging and Lifting Details including Load Out & Lifting Procedure

Document is intended to supplement D17 above. This procedure should note any special precautions to be taken or special provisions to be completed prior to lifting or moving the equipment.(such as any mechanical locking devices that need to be secured prior to lifting or moving).

## 12.2 SCHEDULES

### **CODE:**   **DESCRIPTION:**

#### **S01**     PRELIMINARY PRODUCTION SCHEDULE

The Preliminary Production Schedule, supplied with the Quotation, shall include major fabrication milestone dates based upon Supplier's workload, understanding of scope of work, drawing review cycle, and requested delivery date.

As a minimum, Schedule shall include the following milestones/durations:

- Purchase Order Date
- Start of Engineering Design
- Documentation schedule including proposed review cycle including assumed review duration.
- Completion of fabrication
- Inspection and/or Testing Schedule

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- FAT schedule
- Estimated Shipping Time to Jobsite

### **S02** FINAL PRODUCTION SCHEDULE

The Final Production Schedule is the finalized schedule based upon return of reviewed drawings to Supplier. This schedule shall include all major fabrication milestones with durations including but not limited to:

- Material ordering including lead time on components.
- Start fabrication
- "Hold" points during fabrication for PMI, QA, ASME or other specified tests or inspections
- Completion of fabrication
- Documentation Schedule, by Document Code (i.e. D-1, L-1 etc)
- Finalized Inspection and / or Testing Schedule
- FAT Schedule
- Completion of Turn-Over-Packages
- Ship date, duration, and arrival at jobsite
- Site Installation Schedule, if this is included with P.O.

### **S03** INSPECTION AND FACTORY ACCEPTANCE TEST (FAT) SCHEDULE

The Inspection and Factory Acceptance Test (FAT) Schedule may be part of the Production Schedule or supplied separately if a Production Schedule is not required.

The Schedule shall include:

- Details of planned inspection and testing including date, location, duration, type of inspection, type of test, Supplier and Purchaser responsibilities, etc.

### **S04** SHIPPING SCHEDULE AND PACKING LIST

Schedule shall include:

- Final firm shipping dates
- Final firm packing list that are detailed and match purchase order requirements. Packing lists must include details of each loose packed item/component along with associated Owner tag number, as applicable, along with adequate description of the make and model number

**NOTE: PACKING LISTS MUST BE SUBMITTED FOR APPROVAL PRIOR TO SHIPPING ALONG WITH CRATE PHOTOS**

- Number of shipping crates or units

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### **S05**     START-UP AND COMMISSIONING SCHEDULES

Schedule shall include:

- Supplier shall include estimate of start-up and commissioning (S&C) duration
- Supplier assistance on-site noted on the schedule

### **S06**     TRAINING SCHEDULE

Schedule shall include:

- Factory training class offerings, dates, durations, contract information
- On-site training dates, durations, and contract information, if included in the P.O.

## 12.3    CALCULATIONS / DATA SHEETS

## 12.4    LISTS AND INDEXES

### **CODE:   DESCRIPTION:**

#### **L01**     LIST OF RECOMMENDED SPARE PARTS

Complete and provide in Excel and PDF file format (template may be provided by Buyer) the Supplier's recommended parts list, WITH PRICES, for both Startup Requirements and One (1) year normal maintenance:

- Include items to be purchased and kept "in stock" in the manufacturing facility. These items are "consumables" such as fuses, gaskets, lamps, switches, belts, filters, etc., which need replacement on a frequent basis. The recommended spare parts list should also include items that CANNOT BE DELIVERED to the manufacturing facility within 24 hours of verbal telephone order to the Supplier.)
- Strainers, gaskets, etc. required for start-up are to be included as part of Suppliers initial supply.

Information required:

- Proper nomenclature to match drawings
- Part numbers to match drawings
- Quantity required
- Material of Construction
- Surface Finish
- Supplier's part number and nomenclature, when different (if a "buy out" item)
- Individual item/part's delivery time from date of order placement.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Identification of parts recommended for Equipment Startup
- Bill of materials with model and serial number, where applicable.

### **L02**     MANUAL VALVE LIST:

Complete and provide in Excel and PDF file format ("A8WQ Vendor Data Template.xls" template provided by Buyer) the complete list of all tagged manual valves being provided in the purchase order. Provide valve tag number, the applicable Fluor pipe specification item code, function, type, materials of construction, surface finish, size, manufacturer, model number, serial number (if used), only for valves that control critical system process required for validation.

### **L03**     LIST AND / OR INDEX OF DRAWINGS AND DOCUMENTS

Provide a document list or index for all Mechanical, Electrical, Instrumentation, P&ID, and misc. documents/drawings, which will be issued / utilized for this purchase order. The list needs to be a numbered list. Index should include all documents / drawings, by title, in sequential order by document / drawing number, and indicate applicable "Document Code Identifiers" (i.e. D-1, L-3, etc).

### **L04**     INSTRUMENT LIST (INCLUDING AUTOMATED VALVES) AND / OR INDEX

Complete and provide in Excel and PDF file format the "Instrument and IO Index Template.xls" template provided by Buyer for the complete list of tagged instrumentation and control valves being provided. Provide sequential list, by instrument and automated valve tag numbers, of all instruments and automated valves to be used on this purchase order, listed by type (service), and sub-listed by sequential number.

#### **EXAMPLE:**

16C10-AE-021 (Analytical (pH) Sensor)  
16C10-AIT-021 (Analytical Indicating (pH) Transmitter)  
16C10-PI-036 (Pressure Indicator)  
16C10-PIT-020 (Pressure Indicating Transmitter)  
16C10-TE-023 (Temperature Sensor)  
16C10-TIC-023 (Temperature Indicating Controller)  
16C10-XV-031 (Automated Valve)

The Instrument List and / or Index shall be submitted in the form of the attached Excel spreadsheet, and as a minimum shall contain the following fields. Additional fields may be required. Accuracy and completeness of the provided information is imperative. Note that this template also serves as the I/O schedule V08.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Instrument / Automated Valve Tag Number
- Tag Description
- Process Module Number / Parent Tag Number (System number)
- Manufacturer's name
- Manufacturer's model number
- Manufacturer's part number (full re-order number)
- Material of Construction
- Surface finish
- Line size and connection type.
- Line material
- Service Description
- List of calibration sheets
- Specification Number on which the instrument is specified.
- Reference which drawing number each instrument is located on.  
(Instrument installation detail drawing number.)
- Instrument Loop drawing number
- Heat tracing, Instrument and Pipe support data, and Air supply requirements.
- Serial Number
- Electrical drawing number
- Control Panel drawing number
- Input/Output address and type list (AO, AI, DO, DI and RI)

**Note: Additional fields may be required and template will be provided.**

**Accuracy of the provided information is imperative, as the document shall be used for Qualification.**

### **L05**      LIST OF SPECIAL TOOLS FOR MAINTENANCE

Provide a list of any "special tools" required to perform any startup, production, and/or maintenance operations on the equipment being supplied. This list shall include prices.

### **L06**      CONTROL SYSTEM INTER-PROCESSOR COMMUNICATION LIST

Definition of information (type, scan rate, protocol, etc.) "Passed" to another system / controller (if applicable). This list shall indicate what type of information (analog, numerical, ASCII, floating point, etc.) will be

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

transferred and where it will be residing in the system. A table similar to the I/O list may be used.

### **L07**     BILL OF MATERIAL (BOM) OR DETAILED PARTS LIST WITH MATERIALS OF CONSTRUCTION

Provide detailed parts list for all equipment components. This shall include owner tag number / manufacturer / complete model number / material of construction / location. A8WQ Vendor Data Template.xls provided by Buyer may be used to satisfy this requirement.

### **L08**     LIST OF SHIPPED COMPONENTS

Detailed list of all shipped components, showing weights and dimensions of all components in the packed and unpacked state. Include details on any lifting devices (such as lugs) and center of gravity for the components.

### **L09**     DETAILED TAGGED EQUIPMENT PARTS LIST

Complete and provide in Excel and PDF file format ("A8WQ Vendor Data Template.xls" template provided by Buyer) for all tagged equipment / components to be used in this purchase order.

The list shall include the following as a minimum:

- Tag number
- Tag description
- Parent tag (Process Module Number)
- Supplier PO number
- Manufacturer
- Part number (manufacturer's full re-order number)
- Model number (if different than part number)
- Serial number
- Material(s) of construction
- Internal surface finish
- Design Pressure
- Design Temperature
- Design capacity and unit(s)

Accuracy of the provided information is imperative, as this document shall be used for Qualification.

### **L10**     MASTER DATA and DOCUMENT REGISTER

Refer to Section 5 for details.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### L11 ALARMS AND INTERLOCK LIST

The alarm should have the following information:

- Tag Number or Instrument that enable the alarm.
- Description.
- Operating Range (Analog Values).
- Rational

Interlock information shall include:

- Definition of all interlocks and associated messages in the modes of operation. (Interlock might be different depending on the mode of operation).
- Safety trips

### L12 SUB SUPPLIER LIST AND STATUS REPORT

Provide a list of sub-suppliers and status reports for sub-supplier activities and products.

## 12.5 MANUALS AND REPORTS

### CODE: DESCRIPTION:

#### R01 INSTALLATION, OPERATION, MAINTENANCE, AND LUBRICATION MANUALS

Component manuals shall be in English or Danish language. Operating instructions and all safety information for all pressure containing equipment (per PED 2014/68/EU) and all machinery (per Machinery Directive 2006/42/EC) shall be provided in Danish language.

Operation manuals for individual components not falling under PED or the Machinery Directive shall be provided in Danish language when available.

Manuals shall include:

- Copies of all "final" Certified Drawings or "as-built" drawings
- Copies of Supplier data for ALL Supplier furnished equipment, valves, instrumentation, electrical components, etc. including their installation, operation, maintenance and lubrication manuals. All sub-Supplier documentation is to include Purchaser's tag number as a reference.
- Detail technical manuals for the supplied instrumentation.
- Installation guidelines/directives, to include proper equipment lifting, leveling, anchoring, etc.



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Precautions and/or special considerations necessary when starting up initially
- Detailed operating instructions with operating ranges, durations, settings, checklists, etc.
- Step by step startup, operating and shutdown procedures.
- Safety Precautions during operation and/or maintenance of the equipment
- List of all routine, repetitive "preventative" maintenance procedures and frequencies
- List of all "major" preventative maintenance procedures which should be performed during prolonged "off" periods, such as facility shutdowns or holidays.
- Step by step maintenance procedures for all required maintenance and/or repairs.
- Complete spare parts and detailed parts list.
- Lubrication schedules for all individual pieces of equipment.
- List of all different types of acceptable lubricants, where used, and special handling and storage precautions.
- Copies of Manufacturer's Operation/Instruction Manual. It should describe what the system does and how to use it, in everyday language.
- Precautions and/or special considerations necessary when operating the control system (PLC, DCS, microprocessor).
- Operating parameters.
- Step by step instructions necessary to operate the microprocessor.
- Instrument index.

### **R02**     EU CE Certifications, PED Documentation, and ATEX Certification

Provide the appropriate CE certifications and declarations for pressure equipment (PED), packaged equipment, and machinery, all valves, instruments, and electrical components.

- CE certification for PED compliance
- Declaration of Conformity for CE marking
- Declaration of Incorporation for CE compliance
- Risk assessment per EN 12100

Provide a nameplate rubbing or digital picture of applied dataplate with CE marking for each pressure vessel.

Declarations shall indicate the list of Directive(s) and harmonized EN Standard(s) (or other standards) for which the equipment or component has been designed and manufactured.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Declarations to satisfy PED 2014/68/EU and Machinery Directive 2006/42/EC shall be provided in the Danish and English languages. All other certificates shall be in English and / or Danish (preferred) language.

### **R03**      HYDROTEST DATA REPORTS

Provide if not included in PED documentation listed in “R-2” above. Piping is to have pressure test reports for each assembly / piece. System pressure tests need to be reviewed to ensure compliance with specified codes and standards, while maintaining the integrity of the system. Isolation of atmospheric or other vessels to protect these during the system pressure test may be required.

Request for approval to pneumatic test in lieu of hydrostatic testing shall be made to purchaser in writing ten (1) working days prior to testing.

### **R04**      CERTIFIED MILL TEST REPORTS (MTR) WITH HEAT NUMBERS FOR STEEL ALLOYS

Provide signed and dated MTR's with heat numbers in accordance with EN 10204 3.1 or 3.2 for pressure vessels and for hygienic equipment, instruments, piping, and materials that contact process materials and/or CIP/SIP fluids.

- When MTR's are not available, signed and dated Certificates of Conformity / Compliance (COC) in accordance with EN 10204 2.1 may be acceptable with written prior approval of Purchaser. Positive material identification, with a factory calibrated XRF device, shall be required.
- A MTR map is to be included. This is a copy of the ISO's or component drawing produced with the appropriate MTR heat numbers marked for each piece or item.
- MTR's shall be clearly traceable to the component represented by the MTR. Equipment / Component tag numbers shall be added to each MTR for each equipment. Any additional information added to the MTR to identify the components being represented shall be signed and dated by the individual making the comment.
- Certificates shall be signed with original signatures. Typed signatures are not acceptable.

### **R05**      CERTIFICATES OF CONFORMITY (COC) FOR ELASTOMERS, PLASTICS, GLASS, CERAMIC, AND CARBON

Provide COCs in conformance with EN 10204 2.1 for all non-metallic components and elastomers, plastics, glass, ceramic, and carbon for all process contacting surfaces with USP Class VI or FDA CFR 21 certification and ADI free certification.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### R06 INSTRUMENT CALIBRATION SHEETS

Provide calibration sheets for each instrument supplied, including:

- Calibration Certificates traceable to EN or NIST Calibration Standards
- Calibration procedures/protocols.
- Calibration Stickers on all instruments, incorporating all pertinent data
- Calibration results, including as found and as left (final)
- Calibration dates
- Test equipment serial numbers
- Signatures of individuals performing calibration
- Instrument tag numbers

### R07 SEQUENCE OF OPERATION DESCRIPTIONS

Provide description that adequately defines system/circuit operation to allow for review and/or approval of such to alleviate any testing and/or shipping delays.

- Descriptions shall be provided for each individual cycle, if more than one (1) cycle exists.
- Description shall include control loops, alarms, interlocks, operator interfaces, data collection, reports and sequential operations, both automatic and manual.

### R08 QUALITY CONTROL AND ASSURANCE (QC/QA) PLANS

This will document Supplier's internal quality / change management procedures to be used for the item/component/system.

### R09 BOROSCOPING INSPECTION REPORT / CD / DVD / FLASH DRIVE DOCUMENTATION

The boroscoping report and video is to cross-reference the weld map. The video is to identify failed welds and their subsequent repair. Reference specification 999999-ES-QS003 for boroscope requirements. Boroscope video of both manufacturer's weld inspections and 20% 3<sup>rd</sup> party welding inspection shall be retained for all hygienic tubing welds.

### R10 WELDING PROCEDURES, WELDER AND INSPECTOR QUALIFICATIONS

Provide for each different type of welding process to be used during fabrication:

- Welding Procedure Specifications (WPS)

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Procedure Qualification Records (PQR)
- Welder Qualifications
- Weld Inspector / Examiner Qualifications (Both Seller's inspector / examiner and Third Party Examiner's qualifications)
- Welding procedures, welding procedure qualifications, and weld operator qualifications are to be approved by a Notified Body or Competent Third Party.

### **R11**      WELDING FILE DOCUMENTATION AND WELD LOGS

For Hygienic equipment, provide welding file documentation required per Section 7.0 of Specification 999999-ES-QS003 – Welding Requirements for Hygienic Equipment.

For general, non-hygienic piping, provide the following documentation as a minimum:

1. Welding Procedure Specifications (WPS)
2. Welding Procedure Qualification Records (PQR)
3. Welder Qualifications and continuity log
4. Weld inspector / examiner certification
5. NDT (non destructive testing) reports as applicable

### **R12**      CERTIFICATES OF ANALYSIS AND / OR COMPLIANCE FOR PURGE / SHIELDING GAS

Provide gas analysis reports / certification for all purge and shielding gases used for hygienic welding.

### **R13**      WELD MAPS WITH WELDER IDENTIFICATION

Provide process piping isometrics showing all welds and the welder identification for these welds, traceable to the weld logs and to the line number(s) on the P&IDs. This drawing shall also be used to indicate component heat numbers for each component / material.

Also reference D15 – Piping Isometric Drawings for minimum required information on isometrics

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### R14 NDE REPORTS (RT, UT, PT, MT)

Provide signed and dated non-destructive examination (NDE) reports when required by PED or design standard used. Reports may include:

- RT – Radiographic testing
- UT – Ultrasonic testing
- PT – Dye Penetrant testing
- MT – Magnetic Particle testing (carbon steel and other non-hygienic higher alloys as required)

### R15 POSITIVE MATERIAL IDENTIFICATION TEST RESULTS

Positive Material Identification (PMI) documentation to verify materials of construction of the process contact surfaces shall be provided at Factory Acceptance Test. Factory calibration certificate shall accompany the documentation.

### R16 MECHANICAL AND ELECTROPOLISHING PROCEDURES

Provide mechanical and electropolishing procedures that are to be used for this system / package.

### R17: SURFACE FINISH AND / OR ELECTROPOLISH REPORTS AND / OR CERTIFICATES

Surface finish certification is required for all metallic materials in contact with the process fluids and clean utilities. Certificates for bulk goods / commodities (i.e. instruments, valves, tubing and fittings, pumps, standard filter housings, etc.) is acceptable. Custom and large equipment (i.e. tanks / vessels, custom filter housings, agitators, washer and autoclave chambers, etc.) shall be provided with a surface finish map. The locations are to be reviewed with the assigned technical inspector at the time of the inspection. All data points are to be recorded. A certification/counter signature is required.

### R18 CLEANING AND PASSIVATION PROCEDURES

Provide cleaning and passivation procedures that are to be used for this system / package / equipment for review and approval. Procedures shall incorporate the minimum requirements of the specifications provided with the Purchase Order and include chemical and solvents used, concentrations, temperatures, durations, and the methods and materials used. Deionized quality water shall be used for solution make-up and final rinse.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### **R19**      PASSIVATION AND CLEANING REPORTS AND / OR CERTIFICATES

Seller is to provide a passivation report, which addresses method of passivation procedure used. For passivation of a standalone equipment component (i.e. vessel, agitator, filter housing, pump, etc.), certification shall be signed / dated and include the equipment tag and the passivation method / procedure used. For a system passivation, a P&ID is to be marked to indicate what has been included in the system. All removed items such as instruments or other components are to be listed and highlighted on the P&ID. Passivation report and marked up P&ID shall be signed and dated. Certificate shall include documentation verifying chloride rinse water content.

### **R20**      SPRAYBALL (e.g. RIBOFLAVIN) TEST PROCEDURE

Seller shall submit their standard sprayball coverage testing procedure and test forms for review and approval. The procedure shall be in accordance with the minimum requirements of Attachment 01 of Specification 999999-ES-QS004 – Stainless Steel and Higher Alloy Vessels for Hygienic Service.

Executed test results shall also be submitted and follow Good Documentation Practices.

### **R21**      SPRAYBALL TEST RESULTS

Executed sprayball coverage test results shall be submitted and follow Good Documentation Practice. All required test information as defined in Attachment 02 of 999999-ES-QS004 shall be completed on the executed forms. The following shall be submitted with each executed form / results:

- Test instrument calibration records (i.e. pressure gauge, flow gauge, etc)
- Measuring devices shall be calibrated to NIST traceable or EN standards).
- A full description of the operation order if the sprayballs were not operated simultaneously.
- The brand, grade, and lot number of riboflavin (if not recorded on test form)
- The UV wave length of the black light (if not recorded on test form)
- Type / Quality of water used including recent (within 30 days of testing) water analysis

### **R22**      SUPPLIER TURN OVER PACKAGE

See Section 10 of this specification.

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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

**R23**     EQUIPMENT COMPONENT & INSTRUMENT RECEIPT AND INSPECTION REPORTS

Submit receipt verification and inspection reports for Sub-Seller supplied components, instrumentation, valves, fitting, piping, etc., to verify item acceptability prior to installation. Equipment, Component, and Instrument Receipt and Inspection shall be in accordance with ASME BPE DT-10 and shall be completed on the "Subvendor Receipting Template.xls" template included with the Purchase Order.

**R24**     INSPECTION RELEASE CERTIFICATE

Provide the Buyer release certificate / notification with the TOP

**R25**     PACKING AND SHIPPING PROCEDURES

Submit plan and detailed procedures used for packing and crating of equipment. Procedures should identify materials and methods used for crating and shipping of equipment.

**R26**     MANUFACTURER'S ISO 9001 CERTIFICATES

Provide copies of Manufacturer's ISO 9001 certification

**R27**     PROGRESS REPORTS

Submit Progress Reports per the requirements in the Purchase Order. Progress reports should include:

- Drawing and document submittal status
- Material/Procurement status
- Current staffing levels – engineering and fabrication as applicable to project phase
- Activities completed since the last progress report
- Activities in progress
- Activities forecast (to complete and to start)
- Issues and concerns (open and/or new) which are impacting or may potentially impact the project (from a cost and schedule standpoint)
- Updated schedule showing progress of activities
- Photos showing fabrication process as applicable to project phase

**R28**     INSPECTION TEST PLAN

Submit Inspection and Test Plan for review / approval as identified in Purchase Order documents

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 12.6 CONTROL SYSTEM DATA

Documents provided within this section are required to support Control Systems (PLC/DCS/Microprocessor). These documents are to supplement documents provided to comply with above sections. If documents have been supplied above that meet the requirements of this section, those documents may be dual coded and submitted as such. Duplicate documents are not needed.

#### **CODE: DESCRIPTION:**

##### **V01 SOFTWARE DEVELOPMENT DOCUMENTATION**

Provide the following information:

- Description of development environment utilized to create the "final" PLC / Microprocessor program/configuration.
- Hardware utilized in the Software Development efforts.
- Development Software and utilities (all with revision levels)
- All computer files generated by the software development process that contain or document the final PLC / Microprocessor software. These files will be supplied in their native software formats and submitted through Coreworx for turnover to Owner.
- Source code must be written according to Supplier's quality system and to industry standards.
- Include loop tags, setpoints, alarm limits, controller action, tuning parameters, etc
- Software files for instrumentation and VFD's shall include Device Configuration Settings that can be either in a native device backup file or documented in human readable form in pdf, Microsoft Excel or Microsoft Word.

##### **V02 SOFTWARE SOURCE CODES**

Provide source code documents including:

- Electronic copies of Source Codes listed above. (On CD, DVD, or Flash Drive).
- Version control of code is required and shall be submitted with each revision of the code.
- Annotations to provide understanding of logic structure and function.
- PC, PLC AND HMI backups with annotations in English.

##### **V03 SOFTWARE TEST PROTOCOLS**

This is step by step "plan" to demonstrate that the system being delivered does what it was designed to do.



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Include the following:

- Step by step directions of test procedure.
- Blank set of "results" files/charts/tables. (This will be filled in during the actual testing, with actual data received/achieved during the testing.)
- Descriptions of what instrumentation/microprocessors this protocol pertains to, including model and serial numbers.
- Parameters or acceptable ranges of results .
- This document shall be provided prior to Factory Acceptance Testing

### **V04**      MAINTENANCE MANUALS

Provide the following:

- Complete descriptions/Supplier literature detailing specifics of the system the Supplier is supplying for this equipment.
- Number of levels of security available.
- Description of capabilities of each successive level of security

### **V05**      SECURITY SYSTEM SPECIFICATION

Specification shall address passwords, keylocks and data encryption, etc. See GAMP & 21CFR Part 11 for requirements.

Provide the following:

- Hardware Security Technique
- Software Security Technique
- Security Levels and Privileges
- Unique User Identification

### **V06**      INSTRUMENT CALIBRATION PROCEDURES

Including:

- Copies of Manufacturer's Calibration instructions (detailed, step by step).
- Required frequency of calibration (weekly, monthly, quarterly, yearly, etc.).
- List of Calibration Instrumentation and/or tools necessary to perform the required calibrations. (Instrumentation utilized to perform this function MUST be NIST Traceable).

### **V07**      OPERATOR / USER MANUAL

No special knowledge of computer systems should be required for understanding manuals.

Include:

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Copies of Manufacturer's Operation/Instruction Manual. It should describe what the system does and how to use it, in everyday language.
- Precautions and/or special considerations necessary when operating the control system (PLC, DCS, microprocessor).
- Calibration Procedures, control diagrams, manufacturer's data sheets, and system access (SECURITY features) and specifications.
- Operations parameters
- Instrument Tag Numbers (if applicable)
- Step by step instructions necessary to operate the microprocessor.

### **V08**     INPUT / OUTPUT (I/O) SCHEDULE

Includes:

- Logical names/tags
- Input/Output Module tag numbers
- Input/Output Devices' tag numbers
- Input/Output hardware addresses
- Reference drawing numbers
- Channel assignments tag numbers
- Electronic copy in native format is required

Also includes DCS Interface Data with I/O:

- Whenever a package skid PLC interfaces with the DCS, a precise definition of the data to be exchanged for purpose of setup parameterization, process interlocks, data logging and trending, alarm reporting, operators' events and actions, etc. will be required. A document providing design input to the DCS shall be submitted by the skid PLC supplier. The DCS Supplier shall then prepare a formal interface control specification.

### **V09**     SYSTEM ARCHITECTURE AND HARDWARE CONFIGURATION DIAGRAM

Include overall system architecture.

Include, but not limit, diagrams of switch settings, jumper settings, cable connections, rack loading, and module layouts.

Provide a description of the hardware on which the software resides and how it is to be connected to any existing system or plant equipment. This document defines the requirements for related hardware and methods of control.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### **V10**     OEM SOFTWARE LICENSES AND ORIGINAL DISKETTES / CD / DVD / FLASH DRIVE AND MANUALS

This consists of the Supplier submitting all software original diskettes and manuals from all software installed. This includes, but not limited to, runtime versions of the operator interface software, virus software and operating system software installed in the PC.

### **V11**     CERTIFICATION OF SOFTWARE COMPLIANCE WITH 21CFR PART 11

Provide certification of compliance with FDA regulation for electronic records and electronic signature, when applicable.

## 12.7    SYSTEM, OPERATIONAL, AND VALIDATION DOCUMENTS

### **CODE:**   **DESCRIPTION:**

#### **F01**     FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Describes the detailed function of the equipment or system (i.e. what the system will do). A preliminary version of the FRS may be produced as part of the quote in response to the RFQ. Further revisions of the FRS are prepared in conjunction with the user. The FRS links to Operational Qualification which tests all of the functions specified.

The FRS is a design output specification which describes the functions of the systems, including but not limited to client tag numbers, control loops, alarms, interlocks, operator interfaces, data collection, reports and sequential operations, both automatic and manual.

This document is typically initially generated by the Purchaser for systems controlled by the Purchaser's control system. The document is initiated by the Supplier for PLC controlled systems. This must be submitted and approved prior to creating the Detailed Design Specification.

#### **F02**     DETAILED DESIGN SPECIFICATION

The Detailed Design Specification explicitly addresses how the requirements set forth in the Functional Requirements Specification are to be implemented. Adequate information shall be provided for someone other than the designer to implement the code and integrate the hardware along with the equipment.

The Detailed Design Specification defines how each requirement will be met, and is written predominantly by the Seller's system developer/designer. Particular

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

emphasis is given to control limits and alarms. The emergency shutdown sequence is to be addressed. The Detailed Design specification is to address the safe re-start of the system after emergency shutdown. Copies of all screens on the operator interface terminal are to be included.

The Detailed Design Specification becomes the basis for the Factory Acceptance Testing Protocol. This document requires Owner approval prior to the commencement of code writing when the code writing is by the Seller. When the code writing is by the Buyer, the schedule of the development of the Detailed Design Specification needs to be integrated with the overall schedule.

### **F03**      FACTORY ACCEPTANCE TEST (FAT) PROTOCOLS AND PROCEDURES

These protocols define the details of the individual procedures and tests that will be part of the overall acceptance testing. If required "With Quotation", Supplier shall submit a listing of standard tests performed with brief description of testing procedure. For PLC controlled package systems, Supplier shall submit a detailed FAT protocol developed specifically for purchased equipment to test the complete operation of the equipment for user review and approval prior to FAT testing. For DCS controlled equipment in which the software is provided by Others, the Seller shall develop an FAT protocol for equipment package to test the system(s) to the level attainable without software.

The FAT Protocol is to contain the following minimum information, if applicable:

- Table of contents.
- "Archived" test documentation/results.
- Signature log of FAT participants
- Overview of testing to be done.
- Dimensional checks and static inspections. Red-lined drawing to be included with checks versus designed dimensions noted. Surface finish measurements including map.
- Copies of all screens on the HMI
- Operational tests if utilities are different from those specified. The capacity / attributes of the available utilities are to be noted and any expected deviations noted.
- Alarm tests.
- Shutdown sequences, emergencies, out of specification readings. Restart of the system after these shutdowns
- Riboflavin, passivation (typically done after the FAT), electropolish or other test protocols.
- Test results.
- Deviations and corrections required.

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Punchlist of items to be resolved.
- Listing of items not addressed, particularly field interfaces or interconnections not in place.
- Signature spaces for each test is required, counter signatures are required.

### NOTE:

- The FAT is not permitted to proceed without a signed copy in hand. The name and number of Protocol Approvers will be provided.
- All tests are to be identified with pass/fail criteria. The protocol will not be acceptable without this.
- The FAT Protocol is to mirror the Functional Requirements Specification (FRS) and Detailed Design Specifications (for Seller supplied PLC controlled equipment).
- The FRS and Detailed Design Specification must be reviewed and signed prior to the FAT Protocol being submitted for review.
- The software will be Rev. 0 at the end of the FAT. Any changes after the FAT will have to be made under Change Control. Prior to Revision 0, all revisions are to be identified and logged.

### **F04** COMPLETED FAT RESULTS AND DOCUMENTS

Provide copies of signed, executed FAT protocols, and all attachments to executed protocol (i.e redlined drawings, test instrument calibration records, water quality analysis, etc.).

### **F05** COMPLETED FAT PUNCHLIST

Punch list developed during the FAT is to be completed and the results verified. The punch list is to be signed off and included in the FAT binder. Individual sign off on each item is required.

### **F06** SITE ACCEPTANCE TEST PROTOCOLS AND PROCEDURES

- Protocols will be similar to FAT, only without any simulated inputs and executed after equipment installation using site utilities after start-up and commissioning activities.
- Protocol is to be developed jointly by Purchaser and the Supplier.

### **F07** PLATE AND TUBING WELD AND POLISH SAMPLES

This code applies to custom equipment such as vessels, skidded process equipment and is not intended to be applied to bulk commodities or standard off-the-shelf components (pumps, filter

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

housings, etc.). Seller shall provide samples as applicable to their equipment scope as described below. These samples will serve as reference for acceptance during equipment inspections.

Seller shall provide a 150 mm x 150 mm x 10 mm thick sample coupon with a butt weld in the middle. The weld shall be ground smooth and flush on one side with the sample polished to the internal surface finish specified on the equipment datasheet (including electropolish if required). The opposite side, the weld shall be left in the as-welded condition, color cleaned, with plate polished to match the external surface finish specified on the equipment datasheet. This sample is used as a reference for interior of vessels, custom filter housings, autoclaves, washers, etc.

Seller shall provide a 100 mm x 100 mm x 6 mm thick plate with another plate 100 mm x 50 mm H x 6 mm thick welded perpendicular with a 7 mm fillet weld on both sides of the perpendicular plate. One of the fillet welds shall be color cleaned only and the other shall be ground and polished to a 5 – 6 mm radius with the plates polished and blended to the weld. This sample is used as a reference for exterior surface finish of vessels, structural skid / frame welds, etc.

For equipment supplied with jacketed vessels, Seller shall submit a sample of the vessel jacket attachment welds, whether half pipe or dimple. Sample size shall be a minimum of 150 mm x 150 mm and be indicative of the Seller's standard finished product.

For equipment with hygienic piping / tubing (i.e. process skid), Seller shall provide a 2 inch tube with an orbital weld left in the as welded condition. No internal or external surface conditioning or cleaning shall be done on the tubing sample. For equipment with tubing larger than 2 inches, Seller shall provide a sample coupon for each larger size in the as welded condition. This sample is used as reference for hygienic piping weld quality.

For skid mounted equipment, Seller shall provide a welded sample of the corner of the equipment frame using 50 mm square structural tubing with the welds ground smooth and flush (or as specified on the equipment datasheet) and structural tubing polished to the value specified on the equipment datasheet. This sample is used as a reference for skid / structure polishing and is intended to be indicative of the appearance of the finished structural frame.

### **F08**     MATERIAL SAFETY DATA SHEETS (SDS)

Provide Safety Data Sheets for all fluids supplied with the equipment, such as, gear / lubrication oil(s), hydraulic oil(s), chemicals, storage

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

solutions, etc. In some instances SDS sheets for solids, such as activated carbon, silica, etc. when provided by Sellers shall be provided.

**F09**      SUPPLIER WARRANTY STATEMENT AND SUPPLIER PURCHASE ORDERS

Provide a statement of manufacturer's warranty for supplied equipment. Provide copies of all Purchase Orders (may be unpriced) for all tagged components (equipment, valves, instruments, piping specialty items).

**F10**      LONG TERM STORAGE INSTRUCTIONS

Provide long term storage instructions for maintaining equipment stored or installed without start-up for periods of 6 months or more. Instructions shall identify preventative maintenance activities / procedures required to maintain non-running equipment in working order prior to start-up to maintain equipment warranty. Activities / procedures shall apply to the entire scope of equipment supplied by the Seller and shall include instructions for rotating equipment (pumps, agitators, blowers, compressors, etc. – such as rotation by hand on “X” frequency), specialized instrumentation (such as maintaining sensors in OEM packaging / solutions)

### 12.8 ELECTRICAL DATA – FOR ELECTRICAL REQUISITION PACKAGES ONLY

**CODE:**    **DESCRIPTION:**

**E01**      CTs AND VTs CALCULATIONS

CT and VT calculations shall be performed to confirm CT and VT types and ratings are suitable for the intended duty and in compliance with the required standards. Consideration shall be taken for the different classes of CTs and VTs for metering and protection as required.

**E02**      PROTECTION CTs AND VTs CURVES

Protection CT and VT curves shall be produced in A4/A3 size based on calculations carried out under code E01 to verify the CTs and VTs are suitable for the intended duty.

**E03**      ELECTRICAL PANEL TERMINATION DIAGRAMS

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- Terminal strip with wiring numbering
- Description of terminal circuit
- Proposed cables for terminations

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- All electrical components as connected to terminals
- Bill of Materials
- Wiring diagram showing device termination

### **E04**     ELECTRICAL SCHEMATIC DIAGRAMS

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- Wiring diagram showing all electrical components and interconnections including those to external users
- Description of all electrical components and functionality
- Wiring numbering consistent with Termination Diagrams under code E03
- Bill of Materials

### **E05**     PROTECTION, CONTROL & METERING DIAGRAM

Single Line Diagram which shows all the protection, control and metering functions. Drawings shall include as a minimum the following:

- Drawing format is to be A1 (minimum size), CAD generated
- Diagram is to show all electrical components and single line connections to demonstrate the required protection, control and metering functionality including to external locations
- Show all interlocks and protection logic
- Description of all electrical components and functionality
- Bill of Materials

### **E06**     TERMINAL BLOCK DIAGRAM

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- Block diagram showing interconnections between panels including terminal numbers

### **E07**     ELECTRICAL DATA SHEET

Supplier standard data sheet to include all information required to specify the Electrical equipment and demonstrate compliance with the material requisition and associated Electrical specifications.

### **E08**     ASSEMBLY/SUBASSEMBLY DRAWINGS INCLUDING INSTALLATION AND ERECTION PROCEDURES

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- Erection diagrams showing all assemblies and subassemblies



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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

- Include Installation and Erection Procedures

### **E09**     SUPPORT DETAILS INCLUDING LOCATIONS OF SUPPORTS AND SIZES OF BOLTS

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- Drawing to show support details for all Electrical equipment including details and locations of the supports and their interface with the structure of the building

### **E10**     CABLE ENTRY INSTALLATION DETAILS & ELECTRICAL TERMINATION & HOOK-UP DETAILS

Drawings shall include as a minimum the following:

- Drawing format is to be A3 (minimum size), CAD generated
- General arrangement and detail drawings including sections to show arrangement of cable entries, terminals as referenced in diagrams from code E03 and hook up details
- Appropriate drawing cross references

### **E11**     GENERAL ARRANGEMENT DRAWING - CABINETS, PANELS & JUNCTION BOX LAYOUT

Drawings shall include as a minimum the following:

- Drawing format is to be A1 (minimum size), CAD generated
- Equipment Dimensions, Weights (total assembled and operating), and Center of Gravity
- Panel Locations
- Clearances required for major Component Removal
- Materials of Construction
- Bill of Materials, including call outs with manufacturer / model
- Access for maintenance, removal, etc.
- Breakdown of how units will be shipped, Number of Pieces, Subassemblies, etc.
- Levelling Instructions or Tolerances, and Special Handling Instructions, if any.

### **E12**     GENERAL ARRANGEMENT DRAWING - DIMENSIONAL OUTLINE INCLUDING FOUNDATION AND MOUNTING DETAILS

Drawings shall include as a minimum the following:

- Drawing format is to be A1 (minimum size), CAD generated
- Elevations Referenced to Finish Floor Elevation
- Anchor Bolt Requirements including locations and sizes

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### **E13**     SETPOINT LIST - SETTING DETAILS AND CONFIGURATION FILES FOR RELAYS

- Setpoint tables which provides all setting details for all relays as found on the protection, control and metering diagram – this includes any settings required for enabling specific protection functions and any required for interlocking or blocking functions
- Configuration files for relays to enable quick and easy download of settings into the relays

### **E14**     TERMINATION SCHEDULES

Schedule of all panel terminations as described in Termination Diagrams under code E03

### **E15**     SINGLE LINE DIAGRAMS

Drawings shall include as a minimum the following:

- Drawing format is to be A1 (minimum size), CAD generated
- One line diagram showing all major components (protection, metering, isolation, CTs, VTs, interlocks, circuit breakers, transformers, etc), incoming and outgoing supplies, main equipment ratings, voltages, system earthing, equipment tags, component tags, legend, drawing references and notes as required.

### **E16**     MATERIAL TEST REPORTS (TYPE TEST REPORTS)

- Material test reports for steel, copper, etc as received from sub-supplier for such materials
- May also include, as required, Type Test Reports, for identical equipment instead of undertaking Performance Tests as specified in the respective Electrical specification

## 12.9 SPECIAL DOCUMENTATION

Provide any special documentation as agreed by PO.

## 13. Attachments

Attachment 01: Document Code Description

Attachment 02: Supplier Document Types and Titles

Attachment 03: Supplier/ Subcontractor Coreworx User Guide

Attachment 04: Supplier Drawing and Data Commitment Form

## END OF SPECIFICATION

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### Attachment 01 – Document Code Description

SUPPLIER DOCUMENT CODES	
BOM	BILL OF MATERIAL
CAE	CAUSE AND EFFECT
CAL	CALCULATION
CAT	CATALOGUES
CER	CERTIFICATES
CRV	CURVES
DBD	DESIGN BASIS AND CRITERIA
DBK	BOOKS
DDR	DOCUMENT AND DATA REGISTER
DIA	DIAGRAMS
DST	DATA SHEET
DTL	DETAIL
EHT	EHT ISOMETRICS
EXE	EXECUTION DOCUMENTS
FRM	FORM
GAD	GENERAL ARRANGEMENT DRAWING
IOM	INSTALLATION OPERATION AND MAINTENANCE
ISF	IMPORTERS SECURITY FILING DATA ELEMENTS
ISO	ISOMETRIC
ITP	INSPECTION TEST PLAN
LAY	LAYOUT
LST	LISTS
MDL	MODEL
MSD	MATERIAL SELECTION DIAGRAM
NDE	NON-DESTRUCTIVE EXAMINATION
PFD	PROCESS FLOW DIAGRAM
PID	PIPING AND INSTRUMENTATION DIAGRAM
PLN	PLAN DRAWING
PRC	PROCEDURE
PRV	PRESERVATION
QAD	QUALITY ASSURANCE DOCUMENTS
RPT	REPORT
SCH	SCHEDULE

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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

SUPPLIER DOCUMENT CODES	
SDG	SELLERS DECLARATION OF GOODS AND MATERIALS ORIGIN
SHP	SHOP DRAWINGS
SLD	SINGLE LINE DIAGRAM
SMP	SAMPLES
SPC	SPECIFICATIONS
STD	STANDARD DETAIL DRAWINGS
TRP	TEST REPORTS
WLD	WELDING DOCUMENTS

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### Attachment 02 – Supplier Document Codes and Titles

SUPPLIER DOCUMENT CODES AND TITLES		
Note: This table uses combined Doc Types and Titles. The CWX code is used for Coreworx and on the PDDM templates such as the DDM, IBTS and SDDC.		
<u>CWX TYPE</u>	<u>CODE</u>	<u>DESCRIPTION-TITLE</u>
SUP-BOM-001	BOM	BILL OF MATERIALS
SUP-CAE-001	CAE	CAUSE AND EFFECT
SUP-CAL-001	CAL	ACCELERATION EFFECT CALCULATION
SUP-CAL-002	CAL	ACOUSTIC CALCULATION
SUP-CAL-003	CAL	ACTUATOR SIZING CALCULATION
SUP-CAL-004	CAL	ARCHITECTURAL CALCULATION
SUP-CAL-005	CAL	BATTERY SIZING CALCULATION
SUP-CAL-006	CAL	BEARING SIZING AND LIFE CALCULATION
SUP-CAL-007	CAL	BUILDING CALCULATION
SUP-CAL-008	CAL	CALCULATION REQUIRED FOR AUTHORITY APPROVALS
SUP-CAL-009	CAL	CALCULATION – GENERAL
SUP-CAL-010	CAL	CIVIL CALCULATION
SUP-CAL-011	CAL	CLAMP AND COUPLING DESIGN CALCULATION
SUP-CAL-012	CAL	COMPRESSOR CALCULATION
SUP-CAL-013	CAL	CONTAINMENT CALCULATION
SUP-CAL-014	CAL	CRANE FAILURE MODE CALCULATION
SUP-CAL-015	CAL	DESIGN DATA CALCULATION
SUP-CAL-016	CAL	ELECTRICAL - GENERAL CALCULATION
SUP-CAL-017	CAL	ELECTRICAL LOAD CALCULATION
SUP-CAL-018	CAL	EQUIPMENT SIZING CALCULATION
SUP-CAL-019	CAL	EXCHANGER THERMAL RATING CALCULATION
SUP-CAL-020	CAL	FIRE EXTINGUISHMENT CALCULATION
SUP-CAL-021	CAL	FLOW METER CALCULATION
SUP-CAL-022	CAL	FLOW SIZING CALCULATION
SUP-CAL-023	CAL	FOUNDATION FIELDBUS - PROFIBUS CALCULATION - ASI OR DEVICENET DESIGN
SUP-CAL-024	CAL	HEAT EMISSION - LOAD OR LOSS CALCULATION
SUP-CAL-025	CAL	HEAT TRACE CALCULATION
SUP-CAL-026	CAL	HVAC CALCULATION
SUP-CAL-027	CAL	HYDRAULIC CALCULATION
SUP-CAL-028	CAL	INSTRUMENT CALCULATION
SUP-CAL-029	CAL	INSTRUMENT POWER CABLE SIZING AND IS CALCULATION

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-CAL-030	CAL	LATERAL AND TORSIONAL CRITICAL SPEED AND RESPONSE CALCULATION
SUP-CAL-031	CAL	LIFTING LUG CALCULATION
SUP-CAL-032	CAL	LIGHTING CALCULATION
SUP-CAL-033	CAL	LINE OF SIGHT RADIO CALCULATION
SUP-CAL-034	CAL	LUBE AND SEAL OIL SYSTEM SIZING CALCULATION
SUP-CAL-035	CAL	MECHANICAL STRENGTH CALCULATION
SUP-CAL-036	CAL	MEMORY AND CPU LOADING CALCULATION
SUP-CAL-037	CAL	PILE LOADING CALCULATION
SUP-CAL-038	CAL	POWER CONSUMPTION CALCULATION
SUP-CAL-039	CAL	POWER LOAD AND TRANSFORMER SIZING CALCULATION
SUP-CAL-040	CAL	POWER SYSTEM ANALYSIS CALCULATION
SUP-CAL-041	CAL	PRESSURE DROP CALCULATION
SUP-CAL-042	CAL	PRESSURE PARTS CALCULATION
SUP-CAL-043	CAL	PRESSURE VESSELS AND TANKS CALCULATION
SUP-CAL-044	CAL	PROCESS CALCULATION
SUP-CAL-045	CAL	PROCESS OR UTILITY CALCULATION
SUP-CAL-046	CAL	PULSATION DAMPENER CALCULATION
SUP-CAL-047	CAL	PUMP CALCULATION
SUP-CAL-048	CAL	RELIABILITY AND AVAILABILITY DATA CALCULATION
SUP-CAL-049	CAL	RELIEF VALVE OR RUPTURE DISC CALCULATION
SUP-CAL-050	CAL	SAMPLE PROBE WAKE CALCULATION
SUP-CAL-051	CAL	STRESS ANALYSIS CALCULATION
SUP-CAL-052	CAL	STRUCTURAL CALCULATION
SUP-CAL-053	CAL	SYSTEM HEAD LOSS CALCULATION
SUP-CAL-054	CAL	THERMAL MOVEMENTS CALCULATION
SUP-CAL-055	CAL	THERMOWELL CALCULATION
SUP-CAL-056	CAL	TORSIONAL CALCULATION
SUP-CAL-057	CAL	TRANSPORT LINE DISTANCE-VELOCITY LAG TIME CALCULATION
SUP-CAL-058	CAL	UNBALANCED FORCE CALCULATION
SUP-CAL-059	CAL	UTILITY CONSUMPTION CALCULATION
SUP-CAL-060	CAL	VALVE CALCULATION INCLUDING SIZING AND TORQUE
SUP-CAL-061	CAL	VENTILATION SYSTEM CALCULATION
SUP-CAL-062	CAL	VIBRATION CALCULATION
SUP-CAL-063	CAL	WALL THICKNESS VERIFICATION DRAWING CALCULATION

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-CAT-001	CAT	GENERAL CATALOG INFORMATION
SUP-CAT-002	CAT	ELECTRICAL SPECIFICATION AND CATALOG
SUP-CAT-003	CAT	HVAC EQUIPMENT CATALOG
SUP-CAT-004	CAT	MECHANICAL SPECIFICATION AND CATALOG
SUP-CAT-005	CAT	PRESSURE TEMPERATURE CHART
SUP-CER-001	CER	CALIBRATION CERTIFICATE
SUP-CER-002	CER	CANADIAN REGISTRATION NUMBER - CRN - LETTER AND RECORD
SUP-CER-003	CER	CERTIFICATE OF COMPLIANCE - CONFORMITY
SUP-CER-004	CER	CERTIFICATION - IEC-EX
SUP-CER-005	CER	CERTIFICATION - NRTL
SUP-CER-006	CER	COMPONENT - ASSEMBLY BALANCE CERTIFICATE
SUP-CER-007	CER	DELEGATED-DESIGN SERVICES CERTIFICATION
SUP-CER-008	CER	ELECTRICAL CERTIFICATION
SUP-CER-009	CER	FIRE SAFETY CERTIFICATION
SUP-CER-010	CER	FIREPROOFING APPLICATIONS CERTIFICATE
SUP-CER-011	CER	HAZARDOUS AREA TEST CERTIFICATE
SUP-CER-012	CER	INSPECTION RELEASE CERTIFICATE
SUP-CER-013	CER	INSTALLER CERTIFICATE
SUP-CER-014	CER	INSTRUMENT CERTIFICATION
SUP-CER-015	CER	LIFTING OR WEIGHING EQUIPMENT TEST CERTIFICATE
SUP-CER-016	CER	MANUFACTURER CERTIFICATE
SUP-CER-017	CER	MATERIAL AND MILL CERTIFICATE
SUP-CER-018	CER	NACE CONFORMANCE CERTIFICATE
SUP-CER-019	CER	NUCLEAR CERTIFICATE
SUP-CER-020	CER	OTHER CERTIFICATE
SUP-CER-021	CER	PERFORMANCE TEST CERTIFICATE
SUP-CER-022	CER	PRESSURE TEST CERTIFICATE
SUP-CER-023	CER	PRODUCT CERTIFICATE
SUP-CER-024	CER	PSV CERTIFICATE
SUP-CER-025	CER	QUALIFICATION CERTIFICATION
SUP-CER-026	CER	REFRACTORY INSTALLATION CERTIFICATE
SUP-CER-027	CER	SURVEY CERTIFICATE
SUP-CER-028	CER	TDG CYLINDER CERTIFICATE
SUP-CER-029	CER	TYPE TEST CERTIFICATE
SUP-CER-030	CER	WELDING CERTIFICATE

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-CRV-001	CRV	BATTERY CHARGE - DISCHARGE CURVE
SUP-CRV-002	CRV	CIRCUIT BREAKER AND FUSE CURVE
SUP-CRV-003	CRV	COMPRESSOR CURVE
SUP-CRV-004	CRV	CRANK - EFFORT CURVE
SUP-CRV-005	CRV	CURRENT - POTENTIAL - POWER TRANSFER CURVE
SUP-CRV-006	CRV	ELECTRICAL PROTECTION CURVE
SUP-CRV-007	CRV	FAN CURVE
SUP-CRV-008	CRV	HVAC CURVE AND SELECTION DATA
SUP-CRV-009	CRV	LIGHTING PERFORMANCE CURVE
SUP-CRV-010	CRV	MOTOR AND ENGINE CURVE
SUP-CRV-011	CRV	PUMP CURVE
SUP-CRV-012	CRV	SPEED - TORQUE CURVE
SUP-CRV-013	CRV	TURBINE CURVE
SUP-CRV-014	CRV	VALVE PERFORMANCE CURVE
SUP-DBD-001	DBD	PERFORMANCE AND DESIGN CRITERIA
SUP-DBK-001	DBK	FABRICATION DATA BOOK
SUP-DBK-002	DBK	FINAL PROGRAM DOCUMENTATION
SUP-DBK-003	DBK	MANUFACTURING DATA BOOK
SUP-DBK-004	DBK	MODULAR DATA BOOK
SUP-DDR-001	DDR	MASTER DATA AND DOCUMENT REGISTER
SUP-DIA-001	DIA	BLOCK DIAGRAM
SUP-DIA-002	DIA	CONCEPTUAL NETWORK DIAGRAM
SUP-DIA-003	DIA	ELECTRICAL CONNECTION DIAGRAM
SUP-DIA-004	DIA	ELECTRICAL SCHEMATIC DIAGRAM
SUP-DIA-005	DIA	ELECTRICAL TIE-IN DIAGRAM
SUP-DIA-006	DIA	HVAC DIAGRAM
SUP-DIA-007	DIA	HYDRAULIC CONNECTION DIAGRAM
SUP-DIA-008	DIA	INSTRUMENT LOOP DIAGRAM
SUP-DIA-009	DIA	INSTRUMENTATION AND TELECOMMUNICATION SYSTEM SCHEMATIC
SUP-DIA-010	DIA	INSTRUMENTATION TIE-IN DIAGRAM
SUP-DIA-011	DIA	LOGIC DIAGRAM
SUP-DIA-012	DIA	MEMORY MAP
SUP-DIA-013	DIA	MISCELLANEOUS DIAGRAM
SUP-DIA-014	DIA	OVERHEAD LINE PHASING DIAGRAM
SUP-DIA-015	DIA	PANEL STRIP REPORT



## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-DIA-016	DIA	PIPING SCHEMATIC DIAGRAM
SUP-DIA-017	DIA	PNEUMATIC CONNECTION DIAGRAM
SUP-DIA-018	DIA	PROTECTION CONTROL AND METERING DIAGRAM
SUP-DIA-019	DIA	SYSTEM HARDWARE CONFIGURATION - ARCHITECTURE DIAGRAM
SUP-DIA-020	DIA	TERMINAL BLOCK DIAGRAM
SUP-DIA-021	DIA	WIRING DIAGRAM
SUP-DST-001	DST	ELECTRICAL DATA SHEET
SUP-DST-002	DST	GENERAL DATA SHEET
SUP-DST-003	DST	HVAC DATA SHEET
SUP-DST-004	DST	INSTRUMENT DATA SHEET
SUP-DST-005	DST	LUBE DATA SHEET
SUP-DST-006	DST	LUBRICATION DATA SHEET
SUP-DST-007	DST	MECHANICAL DATA SHEET
SUP-DST-008	DST	NOISE DATA SHEET
SUP-DST-009	DST	PIPING DATA SHEET
SUP-DST-010	DST	SAFETY DATA SHEET - SDS
SUP-DTL-001	DTL	ARCHITECTURAL DETAIL
SUP-DTL-002	DTL	ASSEMBLY OR SUBASSEMBLY DRAWING
SUP-DTL-003	DTL	AUXILIARY DETAIL
SUP-DTL-004	DTL	CIVIL DETAIL
SUP-DTL-005	DTL	COORDINATION DRAWING
SUP-DTL-006	DTL	ELECTRICAL DETAIL
SUP-DTL-007	DTL	EQUIPMENT DETAIL
SUP-DTL-008	DTL	FABRICATION DETAIL
SUP-DTL-009	DTL	FIRE AND GAS LAYOUT - MAPPING
SUP-DTL-010	DTL	FLOOR OPENING DETAIL
SUP-DTL-011	DTL	GENERAL DETAIL
SUP-DTL-012	DTL	HEAT TRACING DETAIL
SUP-DTL-013	DTL	HEATING - VENTILATION - AIR CONDITIONING - HVAC DETAIL
SUP-DTL-014	DTL	INSTALLATION DETAIL
SUP-DTL-015	DTL	INSTRUMENT DETAIL
SUP-DTL-016	DTL	INSULATION DETAIL
SUP-DTL-017	DTL	INTERNAL DETAIL
SUP-DTL-018	DTL	LEVEL SETTING SKETCH
SUP-DTL-019	DTL	LINE OF SIGHT COMMUNICATION TOWERS DETAIL
SUP-DTL-020	DTL	LINING OR COATING DETAIL

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-DTL-021	DTL	MULTICABLES TRANSIT ARRANGEMENT
SUP-DTL-022	DTL	NAME PLATE DETAIL
SUP-DTL-023	DTL	NOZZLE OR CONNECTION DETAIL INCLUDING LOADS
SUP-DTL-024	DTL	RADIOACTIVE SOURCE ISOLATION DETAIL
SUP-DTL-025	DTL	RIGGING AND LIFTING DETAIL
SUP-DTL-026	DTL	SEALING DETAIL
SUP-DTL-027	DTL	SECTION DETAIL
SUP-DTL-028	DTL	SHIPPING DATA
SUP-DTL-029	DTL	STRUCTURAL DETAIL
SUP-DTL-030	DTL	SUPPORT DETAIL
SUP-DTL-031	DTL	VALVE DETAIL
SUP-DTL-032	DTL	WALL OPENING DETAIL
SUP-EHT-001	EHT	ELECTRICAL HEAT TRACING - EHT ISOMETRIC
SUP-EXE-001	EXE	PROJECT EXECUTION PLAN
SUP-FRM-001	FRM	MANUFACTURER DATA REPORT - ASME U- FORM
SUP-GAD-001	GAD	ALLOWABLE FLANGE LOADING DRAWING
SUP-GAD-002	GAD	AUXILIARY EQUIPMENT DRAWING
SUP-GAD-003	GAD	AUXILIARY MISCELLANEOUS DRAWING
SUP-GAD-004	GAD	CABINETS - PANELS - JUNCTION BOX LAYOUT
SUP-GAD-005	GAD	CONTROL PANEL GENERAL ARRANGEMENT
SUP-GAD-006	GAD	CONTROL SYSTEMS DRAWING
SUP-GAD-007	GAD	CIVIL STRUCTURAL ARCHITECTURAL - CSA DRAWING
SUP-GAD-008	GAD	DIMENSIONAL OUTLINE DRAWING
SUP-GAD-009	GAD	ELECTRICAL DRAWING
SUP-GAD-010	GAD	FOUNDATION LOADING DRAWING
SUP-GAD-011	GAD	GENERAL ARRANGEMENT PLAN
SUP-GAD-012	GAD	MECHANICAL DRAWING
SUP-GAD-013	GAD	MISCELLANEOUS DRAWING
SUP-GAD-014	GAD	PIPING DRAWING
SUP-GAD-015	GAD	RIGGING AND LIFTING DRAWING
SUP-GAD-016	GAD	SECTION AND ELEVATION DRAWING
SUP-IOM-001	IOM	CONFIGURED SOFTWARE - CD - DVD OR EQUIVALENT MEDIA
SUP-IOM-002	IOM	INSTALLATION OPERATION AND MAINTENANCE MANUAL
SUP-IOM-003	IOM	MAINTENANCE DATA
SUP-IOM-004	IOM	PRODUCT SAFETY MANUAL
SUP-IOM-005	IOM	SPECIAL INSTALLATION INSTRUCTIONS

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-ISF-001	ISF	IMPORTERS SECURITY FILING DATA ELEMENTS
SUP-ISO-001	ISO	PIPING ISOMETRIC
SUP-ITP-001	ITP	INSPECTION TEST PLAN
SUP-LAY-001	LAY	EARTHING OR GROUNDING LAYOUT
SUP-LST-001	LST	APPROVED SUBCONTRACTORS LIST
SUP-LST-002	LST	CABLE SCHEDULE
SUP-LST-003	LST	EQUIPMENT LIST
SUP-LST-004	LST	EXPERIENCE OR REFERENCE LIST
SUP-LST-005	LST	HSE RISK REGISTER
SUP-LST-006	LST	INPUT-OUTPUT - I-O LIST
SUP-LST-007	LST	INSTRUMENT INDEX
SUP-LST-008	LST	INTERFACE MEMORY MAP
SUP-LST-009	LST	LINE LIST
SUP-LST-010	LST	LIST OF EXCEPTIONS TO SPECIFICATION
SUP-LST-011	LST	LUBRICATION LIST
SUP-LST-012	LST	MASTER LIST OF QUALIFIED WELDERS
SUP-LST-013	LST	MATERIAL TAKE OFF - MTO
SUP-LST-014	LST	MISCELLANEOUS SCHEDULE
SUP-LST-015	LST	MISCELLANEOUS LIST
SUP-LST-016	LST	NAME PLATE
SUP-LST-017	LST	NETWORK INTERFACE LIST
SUP-LST-018	LST	OVERHEAD LINE STRINGING TABLE
SUP-LST-019	LST	OVERHEAD LINE STRUCTURE LIST
SUP-LST-020	LST	PACKING - SHIPPING LIST
SUP-LST-021	LST	PANEL - JUNCTION BOX - CABINET SCHEDULE
SUP-LST-022	LST	PUNCH LIST
SUP-LST-023	LST	RANGE - ALARM - TRIP SETTINGS LIST
SUP-LST-024	LST	RECOMMENDED SPARE PARTS LIST
SUP-LST-025	LST	SCHEDULE OF BOUGHT OUT ITEM LIST
SUP-LST-026	LST	SETPOINT
SUP-LST-027	LST	SHIPPED LOOSE ITEM LIST
SUP-LST-028	LST	SMALL POWER LOAD LIST
SUP-LST-029	LST	SPECIALTY ITEMS LIST
SUP-LST-030	LST	SUB SUPPLIER CONTACT LIST
SUP-LST-031	LST	TERMINATION SHEDULE
SUP-LST-032	LST	UTILITY CONSUMPTION LIST

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-LST-033	LST	VALVE INDEX
SUP-MDL-001	MDL	3D MODEL FILE
SUP-MSD-001	MSD	MATERIAL SELECTION DIAGRAM
SUP-NDE-001	NDE	HARDNESS TEST PROCEDURE
SUP-NDE-002	NDE	LIQUID PENETRANT TEST PROCEDURE
SUP-NDE-003	NDE	NON-DESTRUCTIVE EXAMINATION - NDE MAP
SUP-NDE-004	NDE	NON-DESTRUCTIVE EXAMINATION - NDE PROCEDURE
SUP-NDE-005	NDE	POSITIVE MATERIAL IDENTIFICATION - PMI PROCEDURE
SUP-PFD-001	PFD	FLOW DIAGRAM
SUP-PID-001	PID	PIPING AND INSTRUMENTATION DIAGRAM
SUP-PLN-001	PLN	LOCATION PLAN
SUP-PLN-002	PLN	PLAN - GENERAL
SUP-PLN-003	PLN	PLOT PLAN
SUP-PRC-001	PRC	BOLT TORQUING-TIGHTENING PROCEDURE
SUP-PRC-002	PRC	CABLE WIRING PROCEDURE
SUP-PRC-003	PRC	CHEMICAL CLEANING PROCEDURE
SUP-PRC-004	PRC	CONCRETE STRENGTH TEST PROCEDURE
SUP-PRC-005	PRC	CORROSION TEST PROCEDURE
SUP-PRC-006	PRC	CRITICAL PITTING TEMP TEST PROCEDURE
SUP-PRC-007	PRC	CYBER SECURITY IMPLEMENTATION PROCEDURE
SUP-PRC-008	PRC	DIMENSIONAL INSPECTION PROCEDURE
SUP-PRC-009	PRC	ELECTRICAL TEST PROCEDURE
SUP-PRC-010	PRC	ENCLOSURE INTEGRITY TEST PROCEDURE
SUP-PRC-011	PRC	ENVIRONMENTAL TEST PROCEDURE
SUP-PRC-012	PRC	FACTORY ACCEPTANCE TEST - FAT PROCEDURE
SUP-PRC-013	PRC	FIELD SUPPORT PROCEDURE
SUP-PRC-014	PRC	GALVANIZING PROCEDURE
SUP-PRC-015	PRC	GAS BLANKETING PROCEDURE
SUP-PRC-016	PRC	HEAT STRAIGHTENING PROCEDURE
SUP-PRC-017	PRC	INSTALLATION AND ERECTION PROCEDURE
SUP-PRC-018	PRC	INSTRUMENT TEST PROCEDURE
SUP-PRC-019	PRC	INTERNAL CLEANING AND FLUSHING PROCEDURE
SUP-PRC-020	PRC	INTERNAL LINING PROCEDURE
SUP-PRC-021	PRC	LONG TERM STORAGE PROCEDURE
SUP-PRC-022	PRC	MANUFACTURING - FABRICATION PROCEDURE
SUP-PRC-023	PRC	MARKETING PROCEDURE

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-PRC-024	PRC	MARKING PROCEDURE
SUP-PRC-025	PRC	MATERIAL RECEIVING PROCEDURE
SUP-PRC-026	PRC	MECHANICAL RUN TEST PROCEDURE
SUP-PRC-027	PRC	OTHER TEST PROCEDURE
SUP-PRC-028	PRC	PACKAGE STRING TEST PROCEDURE
SUP-PRC-029	PRC	PACKAGING - PRESERVATION - SHIPPING PROCEDURE
SUP-PRC-030	PRC	PACKING AND LOADING - INCLUDING LOAD TEST - PROCEDURE
SUP-PRC-031	PRC	PERFORMANCE TEST PROCEDURE
SUP-PRC-032	PRC	POSITIVE MATERIAL IDENTIFICATION - PMI - PROCEDURE
SUP-PRC-033	PRC	POST WELD HEAT TREATMENT PROCEDURE
SUP-PRC-034	PRC	PRE-COMMISSIONING - COMMISSIONING PROCEDURE
SUP-PRC-035	PRC	PRESSURE AND LEAK TEST PROCEDURE
SUP-PRC-036	PRC	PULSATION ANALYSIS PROCEDURE
SUP-PRC-037	PRC	REPAIR PROCEDURE
SUP-PRC-038	PRC	SAFETY PLAN PROCEDURE
SUP-PRC-039	PRC	SHOP FIRE PROOFING PROCEDURE
SUP-PRC-040	PRC	SHORT TERM STORAGE PROCEDURE
SUP-PRC-041	PRC	SITE ACCEPTANCE TEST - SAT PROCEDURE
SUP-PRC-042	PRC	SITE CUT PENETRATION PROCEDURE
SUP-PRC-043	PRC	SITE RADIO SIGNAL COVERAGE PROCEDURE
SUP-PRC-044	PRC	SURFACE PREPARATION - PAINTING - COATING PROCEDURE
SUP-PRC-045	PRC	SYSTEM CONFIGURATION PROCEDURE
SUP-PRC-046	PRC	SYSTEM TEST PROCEDURE
SUP-PRC-047	PRC	TRACEABILITY - MATERIAL - WELD - NON-DESTRUCTIVE TESTING - NDT - ETC PROCEDURE
SUP-PRC-048	PRC	VALVE BACKSEAT TEST PROCEDURE
SUP-PRC-049	PRC	VALVE CAVITY RELIEF TEST PROCEDURE
SUP-PRC-050	PRC	VIBRATION OR NOISE LEVEL TEST PROCEDURE
SUP-PRV-001	PRV	PRESERVATION AND HANDLING PROCEDURE
SUP-QAD-001	QAD	BARGE TRIM - STABILITY
SUP-QAD-002	QAD	CERTIFYING AUTHORITY RELEASE NOTE - WAIVER
SUP-QAD-003	QAD	CONTRACTOR QUALITY MANUAL
SUP-QAD-004	QAD	FIRE ALARM SYSTEM VERIFICATION
SUP-QAD-005	QAD	INSTALLATION CHECKLIST
SUP-QAD-006	QAD	JURISDICTIONAL MANUFACTURING DATA REPORT
SUP-QAD-007	QAD	JURISDICTIONAL REGISTRATION REQUIREMENTS - ABSA - CRN - ETC

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-QAD-008	QAD	QMS CERTIFICATIONS - ISD - ASME - ABSA - CSA - API ETC
SUP-QAD-009	QAD	QUALITY ASSURANCE DOCUMENT
SUP-QAD-010	QAD	QUALITY PLAN
SUP-QAD-011	QAD	QUALITY MANUAL
SUP-RPT-001	RPT	ATMOSPHERIC CONDITION REPORT
SUP-RPT-002	RPT	CODE DATA REPORT
SUP-RPT-003	RPT	DIMENSIONAL REPORT
SUP-RPT-004	RPT	MANUFACTURER DESIGN REPORT
SUP-RPT-005	RPT	NAME PLATE RUBBING OR REPORT
SUP-RPT-006	RPT	NON-CONFORMANCE REPORT - NCR
SUP-RPT-007	RPT	PRESSURE TRANSIENT REPORT
SUP-RPT-008	RPT	PROGRESS REPORT
SUP-RPT-009	RPT	SOILS AND GEOTECH REPORT
SUP-RPT-010	RPT	STRUCTURAL REPORT
SUP-RPT-011	RPT	SUB ORDER STATUS REPORT
SUP-RPT-012	RPT	TOPOGRAPHIC SURVEY REPORT
SUP-RPT-013	RPT	TRANSPORTATION STUDY - REPORT
SUP-SCH-001	SCH	BUILDING PERMIT SCHEDULE
SUP-SCH-002	SCH	ENGINEERING SCHEDULE
SUP-SCH-003	SCH	ERECTION SCHEDULE
SUP-SCH-004	SCH	FABRICATION SCHEDULE
SUP-SCH-005	SCH	MANUFACTURING SCHEDULE
SUP-SDG-001	SDG	SELLERS DECLARATION OF GOODS AND MATERIALS ORIGIN
SUP-SHP-001	SHP	ERECTION DRAWING
SUP-SHP-002	SHP	GRATING ERECTION DRAWING
SUP-SHP-003	SHP	GRATING PIECE DRAWING
SUP-SHP-004	SHP	HVAC SHOP DRAWING
SUP-SHP-005	SHP	PLATE SCHEDULE
SUP-SHP-006	SHP	SHOP BILL OF MATERIALS
SUP-SHP-007	SHP	SHOP DRAWING - OTHER
SUP-SHP-008	SHP	SPOOL DRAWING
SUP-SHP-009	SHP	STRUCTURAL STEEL CONNECTION DETAIL
SUP-SHP-010	SHP	STRUCTURAL STEEL ERECTION DRAWING
SUP-SHP-011	SHP	STRUCTURAL STEEL FABRICATION SHOP DRAWING
SUP-SHP-012	SHP	STRUCTURAL STEEL PIECE DRAWING
SUP-SLD-001	SLD	SINGLE LINE DIAGRAM

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-SMP-001	SMP	PRODUCT SAMPLE
SUP-SMP-002	SMP	SAMPLE
SUP-SPC-001	SPC	ACKNOWLEDGEMENT OF TECHNICAL PURCHASE SPECIFICATION
SUP-SPC-002	SPC	ANALYZER NETWORK CONNECTION AND SETUP SPECIFICATION
SUP-SPC-003	SPC	DESIGN CRITERIA FOR FLOW AND PRESSURE MEASUREMENTS
SUP-SPC-004	SPC	DESIGN SPECIFICATION
SUP-SPC-005	SPC	HMI GRAPHICS DESIGN TEMPLATE
SUP-SPC-006	SPC	HVAC CONTROL SYSTEM SOFTWARE SPECIFICATION
SUP-SPC-007	SPC	PROGRAMMING AND CONFIGURATION TOOLKIT AND TEMPLATES
SUP-SPC-008	SPC	SEQUENCE OF OPERATION AND EQUIPMENT FUNCTIONAL DESCRIPTION
SUP-SPC-009	SPC	SOFTWARE LICENCE AGREEMENT
SUP-SPC-010	SPC	SYSTEM CONFIGURATION INCLUDING DATABUS INTERFACE - MEMORY MAPPING - HMI DISPLAY
SUP-SPC-011	SPC	SYSTEM DESCRIPTION
SUP-SPC-012	SPC	SYSTEM SOFTWARE CONFIGURATION
SUP-SPC-013	SPC	TRANSMITTER CONFIGURATION
SUP-STD-001	STD	STANDARD DETAIL
SUP-STD-002	STD	STANDARD INSTALLATION DETAIL
SUP-TRP-001	TRP	ANALYZER TEST REPORT
SUP-TRP-002	TRP	CALIBRATION TEST REPORT
SUP-TRP-003	TRP	COMPATIBILITY TEST REPORT
SUP-TRP-004	TRP	CONCRETE STRENGTH TEST REPORT
SUP-TRP-005	TRP	CRYOGENIC TEST REPORT
SUP-TRP-006	TRP	FACTORY ACCEPTANCE TEST - FAT - REPORT
SUP-TRP-007	TRP	FIELD TEST REPORT
SUP-TRP-008	TRP	FINAL CERTIFIED ACCEPTANCE TEST RECORD
SUP-TRP-009	TRP	FIRE SAFETY TEST REPORT
SUP-TRP-010	TRP	FUNCTIONAL TEST REPORT
SUP-TRP-011	TRP	HEAT TREATMENT TEST REPORT
SUP-TRP-012	TRP	HVAC EQUIPMENT TEST REPORT
SUP-TRP-013	TRP	IMPACT TEST RECORD
SUP-TRP-014	TRP	INSPECTION REPORT
SUP-TRP-015	TRP	INSTALLATION REPORT
SUP-TRP-016	TRP	LOW TEMPERATURE IMPACT TEST FOR LOW TEMPERATURE CARBON STEEL

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

SUPPLIER DOCUMENT CODES AND TITLES		
SUP-TRP-017	TRP	MANUFACTURER TEST REPORT
SUP-TRP-018	TRP	MATERIAL TEST REPORT - MTR
SUP-TRP-019	TRP	NON-DESTRUCTIVE EXAMINATION - NDE RECORD
SUP-TRP-020	TRP	NON-DESTRUCTIVE EXAMINATION - NDE REPORT FOR LIFTING DEVICES
SUP-TRP-021	TRP	NOISE REPORT
SUP-TRP-022	TRP	PACKAGE STRING TEST REPORT
SUP-TRP-023	TRP	PAINTING - COATING REPORT
SUP-TRP-024	TRP	PDA - PILE - TEST REPORT
SUP-TRP-025	TRP	PERFORMANCE TEST REPORT
SUP-TRP-026	TRP	PILE TEST REPORT
SUP-TRP-027	TRP	POSITIVE MATERIAL IDENTIFICATION - PMI RECORD
SUP-TRP-028	TRP	PRE-FACTORY ACCEPTANCE TEST - PRE-FAT - TEST REPORT
SUP-TRP-029	TRP	PRESSURE TEST RECORD
SUP-TRP-030	TRP	PRESSURE - LEAK TEST RECORD
SUP-TRP-031	TRP	PRODUCT TEST REPORT
SUP-TRP-032	TRP	RADIOACTIVE LEAKAGE TEST RESULTS FROM SOURCE CONTAINMENT
SUP-TRP-033	TRP	RESEARCH REPORT
SUP-TRP-034	TRP	SITE ACCEPTANCE TEST - SAT - REPORT
SUP-TRP-035	TRP	SURFACE TEMPERATURE TEST REPORT
SUP-TRP-036	TRP	TEST AND BALANCE REPORT
SUP-TRP-037	TRP	TEST EQUIPMENT CALIBRATION REPORT
SUP-TRP-038	TRP	VALVE PERFORMANCE CERTIFICATE - SET PRESSURE
SUP-TRP-039	TRP	VIBRATION TEST REPORT
SUP-TRP-040	TRP	GENERAL - MISCELLANEOUS TEST REPORT
SUP-WLD-001	WLD	WELD PROCEDURE INCLUDING QUALIFICATION (WPS - PQR)
SUP-WLD-002	WLD	WELD REPAIR PROCEDURE
SUP-WLD-003	WLD	WELD MAP
SUP-WLD-004	WLD	WELDING DATA
SUP-WLD-005	WLD	WELDING PLAN



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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

**Attachment 03 – Supplier / Subcontractor Coreworx User Guide**

**CORE•WORX**

**SUPPLIER/SUBCONTRACTOR COREWORX USER GUIDE**

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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 2.0 Purpose

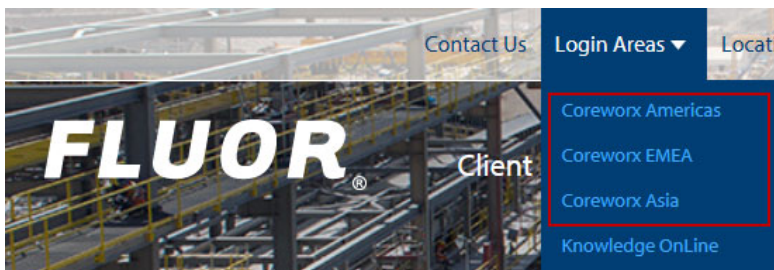
Welcome to the Supplier/Subcontractor Coreworx (CWX) User Guide. This document will provide the basics for getting started and can be retained for easy reference.

### 3.0 HOW TO LOG IN TO COREWORX

Coreworx requires the use of Microsoft Internet Explorer web browser (version 7 or higher). Other web browsers (Firefox, Safari, Google Chrome) are not supported.

#### 3.1 SYSTEM ACCESS - [HTTPS://WWW.FLUOR.COM](https://www.fluor.com)

Depending on Fluor Home Office of your project, select the appropriate Coreworx login link. It may be helpful to bookmark the URL for the appropriate Coreworx link for future reference.



#### 3.2 LOGIN ID AND PASSWORD

If you are an existing Coreworx user (or prior Projects OnLine user), use your current Coreworx login information to gain access to the system. If you are a new user, you will receive separate email notifications with a Login ID and a password. **Coreworx passwords are valid for and are required to be changed every 90 days.**

## CORE•WORX

Login

Login ID:

Password:

[Contact help desk for password assistance](#)

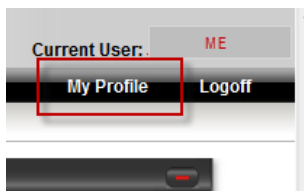
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## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 3.3 INITIAL LOGIN

First time users will need to agree to a System Access Agreement in order to proceed.

Review your profile periodically. Click on 'My Profile' at the top right of your screen and the window will expand displaying your current Coreworx profile information. Confirm that all information is accurate and update if your information changes.



### 3.4 PASSWORD RESETS

Please refer to the introductory email(s) you received for instructions for resetting your CWX password. If you encounter issues with resetting your password, please contact the Enterprise Help Desk (EHD). Click the link 'Contact help desk for password assistance' on the login screen to find the phone numbers and the email address for the EHD.

When contacting the EHD, always provide your name, CWX Login ID, email address and phone number. Also provide the EHD a specific description of the issue you are experiencing. If you are contacting them through email, include screenshots whenever possible.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 4.0 GETTING STARTED

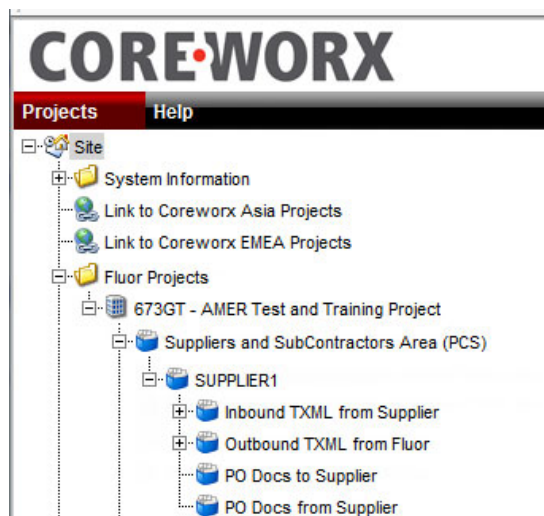
Below are the basic instructions for getting started in Coreworx. If you are experiencing internet browser related issues, please see the Coreworx Web Client Configuration Guide (section 4).

More in-depth information is available for review via the Online Help and Information Centre. After login, please click 'Help', as depicted below, to access help topics, including information about the Document Management System (DMS). Additional general information can also be found under the System Information folders.



### 4.1 NAVIGATION

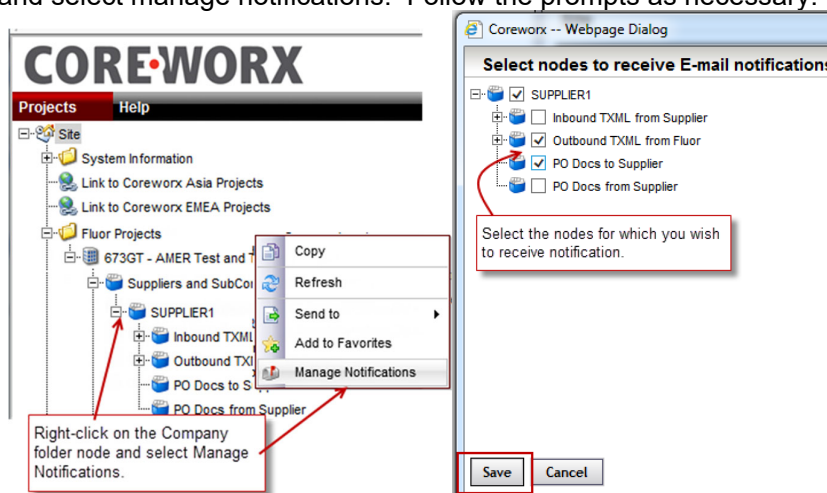
The basic folder structure of Coreworx is simple and easy to use. Navigate through the folder structure by clicking on the '+' symbol next to the folder or by clicking on the folder itself. Please note the referenced folder structure is a default template and may vary between offices and projects.



## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

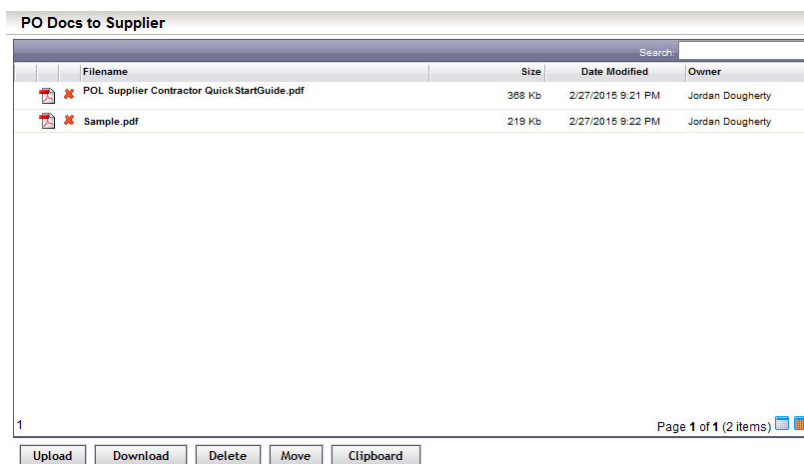
### 4.2 EMAIL NOTIFICATION

Coreworx allows you to subscribe to any folder within a navigation tree. You will be notified by e-mail of any activity (such as new files uploaded) in the folders you select. To turn email notification on, simply right click on the node and select manage notifications. Follow the prompts as necessary.



### 4.3 DOWNLOADING DOCUMENTS

When you locate the folder containing the file(s) you need, click on the file icon or file name and you will be prompted to either open or save the file. By holding down 'Ctrl', you can select multiple documents. The 'Download' button allows you to download the selected files as a ZIP file. Follow the 'Save'/'Save As' prompts as necessary.



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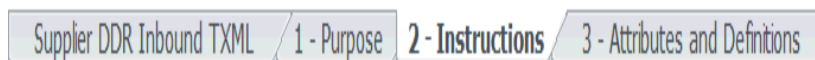
## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

### 4.4 INBOUND TRANSMITTAL DOCUMENT & DATA REGISTER (IBTDDR) SUBMISSION

The first submittal for the project will be the IBTDDR file below which is provided by Fluor Project Document & Data Management (PDDM) in the introduction email referred to in 000.206.01100. The file attached will be named as per the example below:

SUPPLIER-IBTDDR-XXXXX\_GT671r3\_16Nov2018

The instruction on how to use the IBTDDR file is provided in the file itself. The files contain multiple tabs in the excel file (as shown below). Refer to tab '2 – Instructions'.



### 4.5 INBOUND TRANSMITTAL DOCUMENT SUBMISSION (IBTS)

All submittals for the project will be done using the IBTS file below which is provided by PDDM in the introduction email referred to in 000.206.01100. The file attached will be named as per the example below;

SUPPLIER-IBTS-00001-XXXXX\_GT671r3\_16Nov2018

The instruction on how to use the IBTS file is provided in the file itself. The files contain multiple tabs in the excel file (as shown below). Refer to tab '2 – Instructions'.

SUPPLIER-IBTS-00001-XXXXX\_GT671r3\_16Nov2018

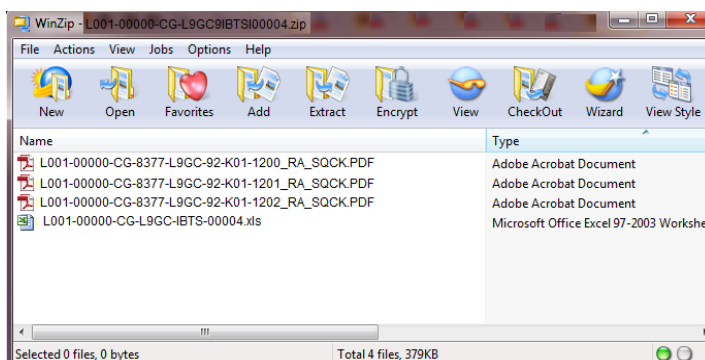


## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

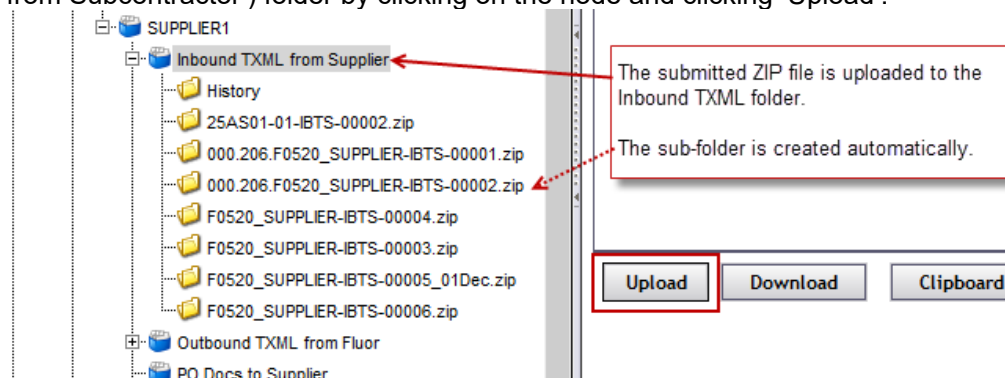
### 4.6 ZIP FILES AND UPLOADING FILES TO COREWORX

As a supplier or subcontractor, you will be required to create a ZIP file containing the documents/files ready for submission as well as the supplied IBTS Spreadsheet.

ZIP file naming convention should be agreed by Fluor project Document Control and the Supplier/Subcontractor contact prior to first document submission. Both the ZIP file and the IBTS spreadsheet must contain the 'IBTS' detail as part of the file name.



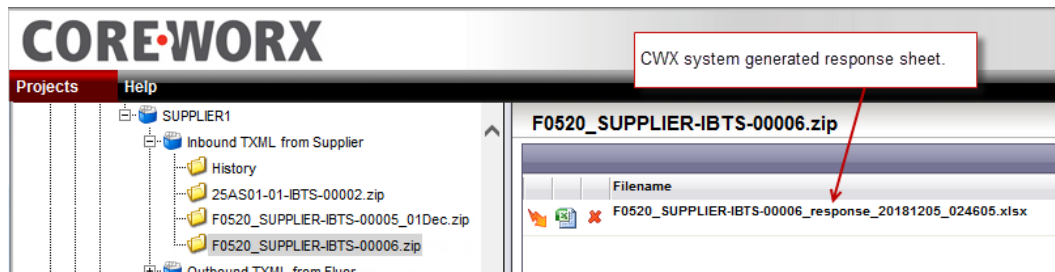
Upload the ZIP file into the 'Inbound TXML from Supplier' (or 'Inbound TXML from Subcontractor') folder by clicking on the node and clicking 'Upload'.





## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

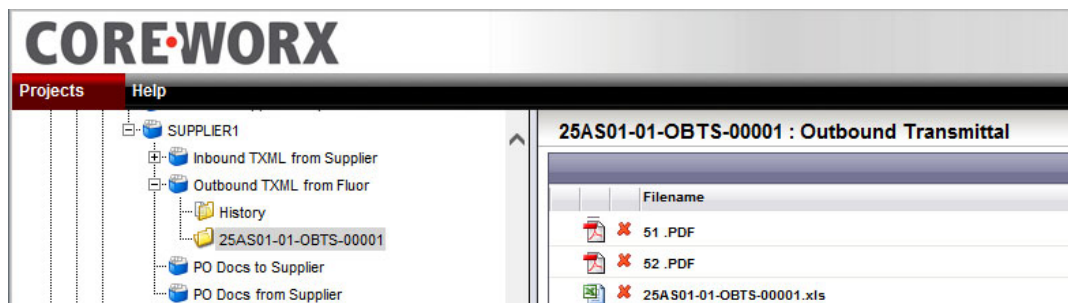
Once the submission is processed, the CWX system will also create a response sheet to the original IBTS, which captures the details of the upload and identifies a successful submission or highlights any errors in the submission.



### 4.7 OUTBOUND TRANSMITTAL (OBTS) AND DOWNLOADING FILES

After the completion of the review of the submitted documents, statused documents will be uploaded by Fluor PDDM to the 'Outbound TXML from Fluor' folder node.

If you have set up the 'Manage Notifications' subscription to that folder in CWX, you will receive an email that a new folder node has been created. Download the statused documents and OBTS spreadsheet. Update and resubmit as required.



## 5.0 COREWORX WEB CLIENT CONFIGURATION GUIDE

This guide is for non-Fluor users of Coreworx. It has been prepared to document the system requirements for using Coreworx and to provide information to assist with the resolution of common network and Internet Explorer restrictions that inhibit use of Coreworx.

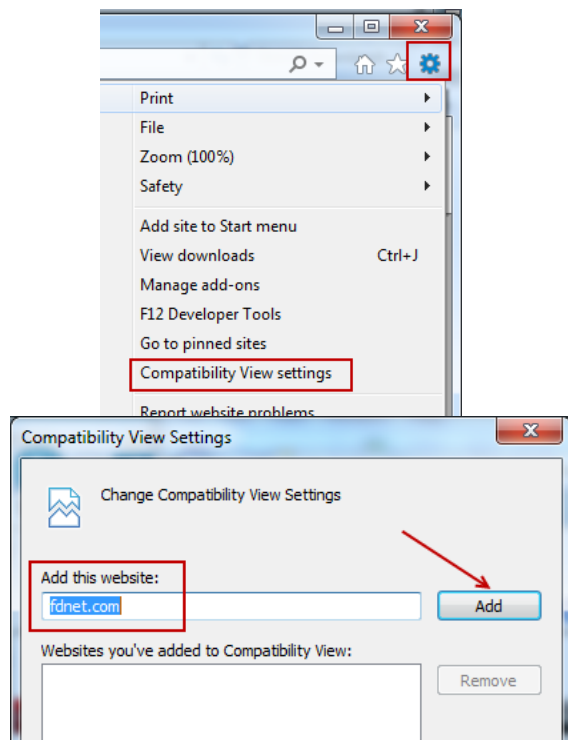
### 5.1 GENERAL SYSTEM REQUIREMENTS

Coreworx requires the use of Microsoft Internet Explorer version 7 or higher. Other web browsers (Firefox, Safari, Google Chrome) are not supported.

If using an Internet Explorer browser later than 10, see below to resolve the 'Unsupported Browser' error message.

To fix this, in the Internet Explorer browser, navigate to Tools -> Internet Options -> Compatibility View settings. Add 'fdnet.com' to the 'Compatibility View settings'.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION



Also in Internet Explorer browser, navigate to Tools -> Internet options and ensure under General Tab - Browsing History 'Delete browsing history on exit' is unchecked.

### 5.2 NETWORK/FIREWALL REQUIREMENTS

Networks/Firewalls are typically controlled by a company's Information Technology, Computer or Network group. The following ports are required:

- Port 80
- Port 443

If you attempt to access Coreworx from the internet and are unable to do so, please have your local IT Systems team verify that port 443 is open on the firewall to support the Secure Socket Layer (SSL) communications.

### 5.3 INTERNET EXPLORER ACTIVEX CONSIDERATIONS FOR MULTIPLE FILE UPLOAD

Coreworx includes advanced components that provide functionality not normally possible in an Internet browser, such as multiple file upload.

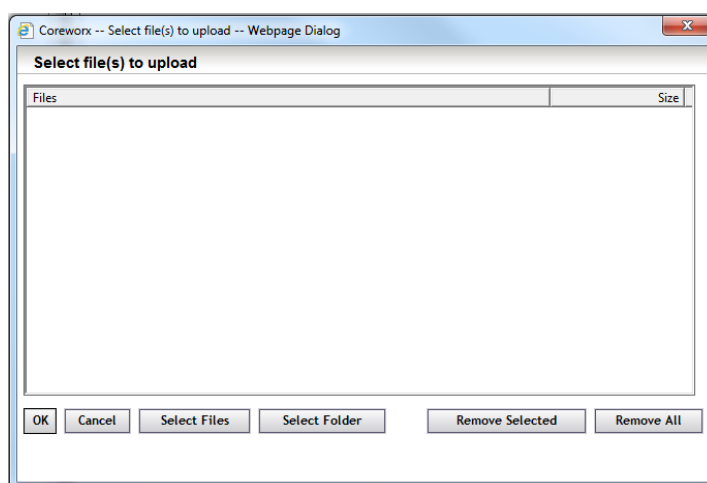
To fully utilize these features, you will require two components or 'ActiveX controls'. Some browser configuration may be required to allow the installation of ActiveX controls from the Coreworx web site.

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

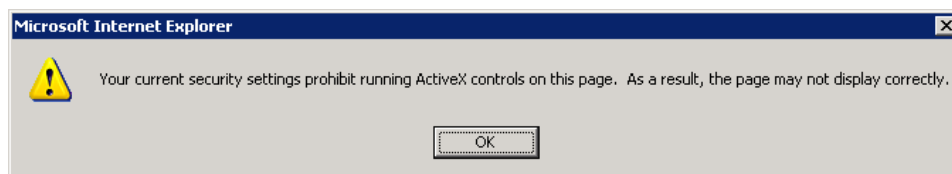
Coreworx can be operated without 'ActiveX controls' installed, however with the following limitations:

- Upload is limited to one file at a time.
- There is no upload progress indicator.

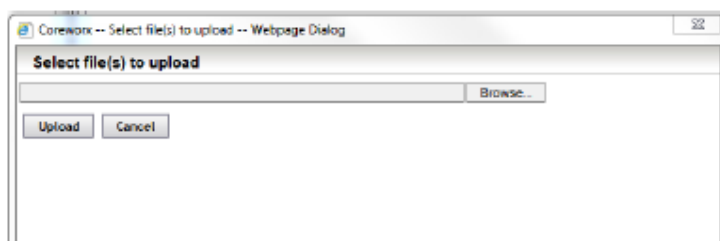
With ActiveX controls installed, you will see the multiple upload screen shown below.



If the ActiveX control is NOT installed, you will see an error message, and then the fallback upload screen.



As shown below, this allows you to upload files one at a time, with no progress indicator.

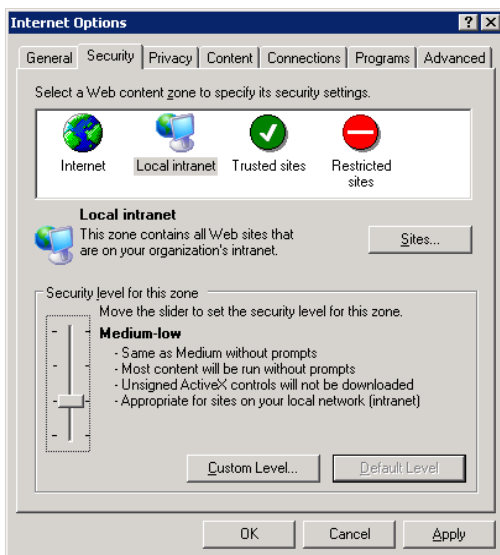


Procedure to allow ActiveX installation:

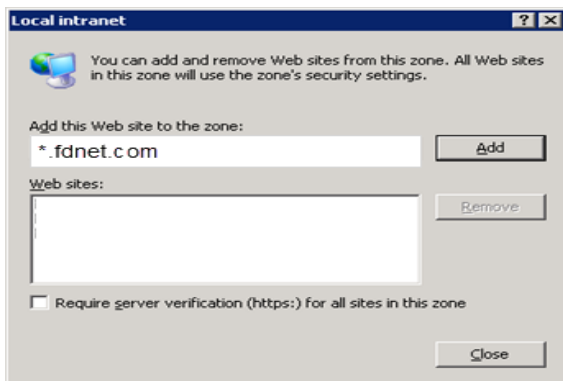
## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

This procedure will adjust your Internet Explorer settings so that ActiveX controls can be installed and used while accessing the Coreworx website.

In the Internet Explorer browser, click the 'Tools' menu and select 'Internet Options'. Click on the 'Security' tab, and select the 'Local Intranet' icon.



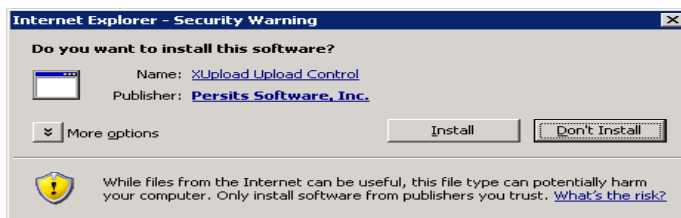
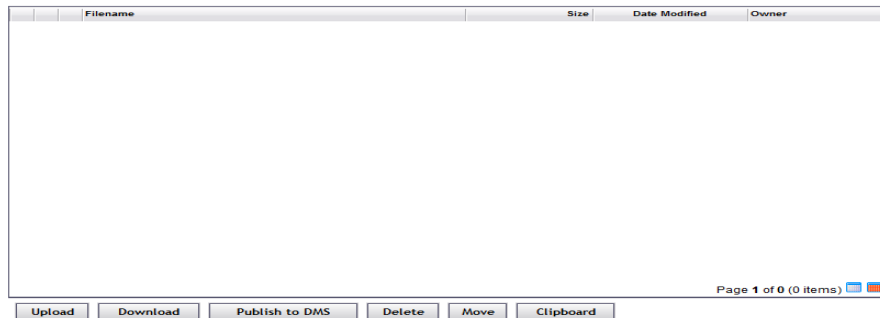
If you do not see the security level slider set to 'Medium-low', click 'Default Level' to reset it. Now click Sites.



In the 'Add this Web site to the zone' box, the browser should have automatically entered the Coreworx address. If not, type it in. Click Add. Click Close and OK.

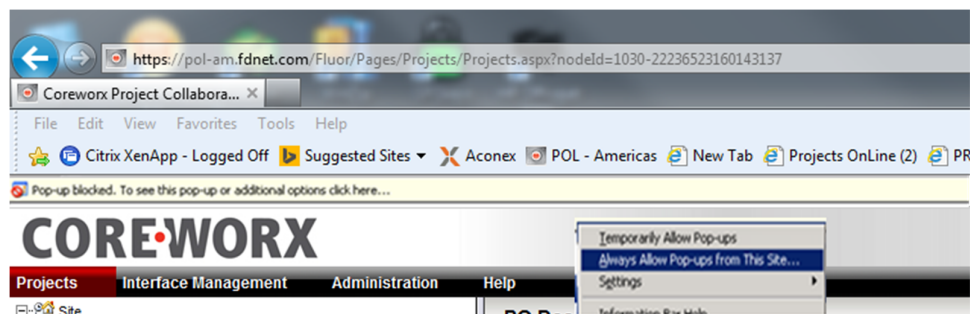
You will be prompted to install the ActiveX control when clicking on the upload button from any document folder screen as follows:

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION



- Click 'Install', and multiple file upload will be enabled.
- Pop-up windows must be enabled for Coreworx.

If you see a yellow bar telling you pop-ups are blocked, click the bar and select 'Always allow pop-ups from this site'.



---

## SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION

Some companies have restrictions on users being able to place sites in the Local Intranet zone and/or being able to download ActiveX controls. If this is the case, packages are available for download that can be evaluated and installed on your computer by your IT group. Please contact the Fluor Project Information Manager, or your Fluor Contact, for further assistance.

### 6.0 GETTING HELP

***Note: As our system name is in transition, Projects OnLine (POL) is used interchangeably in with Coreworx (CWX).***

Project specific questions can be directed to PDDM (see section 6) and/or the project contact name located within the 'Welcome to Coreworx' email received from your CWX Coordinator.

Your primary contact for general system assistance should be the CWX Coordinator, as noted in your initial login information email(s) that were received from POL Services. Additional support can be obtained by contacting the Enterprise Help Desk (EHD). Click the link 'Contact help desk for password assistance' on the login screen to find the phone numbers and the email address for the EHD.

### 7.0 Fluor Project Document & Data Management (PDDM) CONTACTS

Any project specific enquiries should be directed to the PDDM team as indicated below.

1) General E-mail Box –

[Fujifilm.DSM.PDDM@fluor.com](mailto:Fujifilm.DSM.PDDM@fluor.com)

Note: PDDM does not support password resets. Please contact the Enterprise Help Desk for password issues (see section 2).

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**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

**Attachment 04 – Supplier Drawing and Data Commitment Form**

**SUPPLIER DATA AND DRAWING COMMITMENT SPECIFICATION**

**FLUOR**<sub>®</sub>

**SUPPLIER DRAWING & DATA COMMITMENT (SDDC) FORM**

Eq. Title

Client: **FUJIFILM**  
Project: **DSM EXPANSION PROJECT**  
Requisition No.:  
Description:  
Buyer Responsible Engineer:  
Revision:  
Revision Date:  
TAG(s):  
Supplier Information  
Name:  
Phone:  
Project Manager & Ext:  
Fax/email:  
Job No:  
Commitment Start Date:

**FORM INSTRUCTIONS:**

**1. Buyer Engineer discipline completes the Drawing & Data Requirement Columns I thru XI with the following:**

- (I) Buyer's Drawing/Data Requirement Reference Number.
- (II) Description of Buyer's Requirements for Supplier Drawing/Data.
- (III) Buyer's Document Code (refer to Note 5 for more information on Buyer Document Codes)
- (IV) Priority Code: Priority 1 = Critical for Buyer's plant design to maintain a cost optimized production schedule.  
HIGHEST PRIORITY DATA!  
Priority 2 = Required to verify compliance with specifications and authorization to proceed with Supplier's fabrication.  
Priority 3 = Required for field installation, operation and maintenance plant data books.
- (V) Corework Type (refer to Note 5 for more information on Buyer Document Codes)
- (VI) Corework Code (refer to Note 5 for more information on Buyer Document Codes)
- (VII) Designate whether or not a drawing or document is required for Commissioning
- (VIII) Designate whether or not an as-built drawing or document is required
- (IX) Designate whether or not a drawing or document is required in Supplier "Turn Over Package" (TOP)
- (X) Type and Quantity = Type and number of copies of data required. P = Print E = Electronic File
- (XI) EXPECTED SUBMITTAL time in weeks After Receipt of Order (ARO) when the Company expects to receive the drawings and data.

**Legend:**

WQ: With Quote  
ARO: After Receipt of Order  
ARAD: After Return of Approved Documents  
AS: After Shipment  
PFAT: Prior to FAT  
PS: Prior to Shipment  
E: Electronic  
P: Paper  
ED: Electronic Disc / Flash Drive

**2. Supplier fills in or confirms Column XII the PROMISED SUBMITTAL time in weeks After Receipt of Order (ARO)**  
Supplier must return the completed form to Buyer with his QUOTATION. Supplier's authorized signature is required to certify his binding commitment.

**3. The Due Date AT BUYER'S OFFICE (Column XIII) will be entered by the BUYER Material Manager discipline at the time the P.O. is issued. The Due Date will be based on the Promised Submittal Time provided by SUPPLIER with his quotation (Column XII) and the Commitment Start Date. After P.O. award, the SUPPLIER must provide the BUYER the Drawings and Data specified on or before the Due Date.**

**4. Supplier's Transmittal Letter shall include the PROJECT NAME, CONTRACT NUMBER, PURCHASE ORDER NUMBER, BUYER'S REFERENCE NUMBER (I) corresponding to Supplier's drawing and data submitted (II).**

**5. Additional instructions to Supplier are in the Specification 999999-ES-QS002 "Supplier Drawing and Data Commitment Specification"**





## SUPPLIER DRAWING &amp; DATA COMMITMENT (SDDC) FORM

Eq. Title

CLIENT: FUJIFILM  
PROJECT: NORTH STAR PROJECT  
REQ. NO.:  
DESCRIPTION:

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_

COMMITMENT START DATE: \_\_\_\_\_

- NOTES:**
1. All engineering data submittals shall be zipped together and uploaded to the Fluor Projects Coreworx Database under the "Inbound TXML from Supplier" folder with a completed IBTS Form. Vendor shall fill out an IBTS Form with each transmittal: for each document in the transmittal, select the main Document Code and Type Descriptions (selected from drop down menus) and assign all SDDC Code(s), Process Module Number(s) and Equipment Tag Number(s) associated with the document.
  2. Electronic transfer of engineering data is acceptable provided the Seller has executed Coreworx Supplier SRW Form 000.107.F5003. If this agreement has not been established, seller shall contact Fluor engineer to arrange for completion of this form.
  3. Include the following on all submittal documents (at top of page):  
Project Name: North Star Project  
PO Number: A8WQ-4-XXXX  
SDDC Code(s): <<Refer to Column III codes below>>  
Process Module Number(s): <<Refer to Bill of Materials>>  
Equipment Tag Number(s): <<Refer to Bill of Materials>>

BUYER'S DRAWING & DATA REQUIREMENT											SUPPLIER'S COMMITMENT		
	I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII	
REV	REF #	DESCRIPTION	DWG / DOC SDDC CODE	PRIORITY	CWX TYPE	CWX CODE TYPE	AS-BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)	
DATA AND DOCUMENTS REQUIRED													
		DRAWINGS											Notes
	1	General Arrangements Drawings,including Dimensions, Piping & Electrical Connection Sizes & Locations, Foundation & Anchor Bolt Locations	D01	1	SUP-GAD-011	GAD	Yes	Yes					
	2	Piping & Instrumentation Diagrams (P&IDs)	D02	1	SUP-PID-001	PID	Yes	Yes					
	3	Foundation Diagrams and Loading Requirements, incl. Seismic	D03	1	SUP-GAD-010	GAD	No	Yes					
	4	Catalog Information, Cuts, Etc. (Inc. Sub-Vendors and Instruments)	D04	2	SUP-CAT-001	CAT	No	Yes					
	5	Detail Drawings (Including Cross Sectional Drawings)	D05	1	SUP-DTL-007	DTL	Yes	Yes					
	6	Mechanical Seal Cross Section, Certified by Seal Manufacturer	D06	1	SUP-CER-023	CER	No	Yes					
	7	Electrical Components	D07	2	SUP-DTL-006	DTL	No	Yes					
	8	Instrument Location Drawings	D08	1	SUP-DIA-010	DIA	Yes	Yes					
	9	Instrument Loop/Segment Drawings	D09	1	SUP-DIA-008	DIA	Yes	Yes					
	10	Control Panel Drawings	D10	1	SUP-GAD-005	GAD	Yes	Yes					
	11	Wiring Schematics	D11	1	SUP-DIA-021	DIA	Yes	Yes					
	12	Instrument Installation Drawings	D12	1	SUP-DIA-010	DIA	No	Yes					
	13	Skid Interconnection and/or Reassembly Drawings	D13	1	SUP-GAD-012	GAD	No	Yes					
	14	Details of each O-Ring Seal	D14	1	SUP-DTL-007	DTL	No	Yes					
	15	Piping Isometric Drawings	D15	1	SUP-ISO-001	ISO	Yes	Yes					
	16	3D Model in Electronic Form	D16	1	SUP-MDL-001	MDL	Yes	Yes					
	17	General Arrangement Drawing for Recommended Lifting Location and Method	D17	2	SUP-GAD-007	GAD	No	Yes					
	18	Rigging and Lifting Details including Load Out & Lifting Procedure	D18	2	SUP-DTL-025	DTL	No	Yes					
	19												
	20	SCHEDULES											
	21	Preliminary Production Schedule	S01	1	SUP-SCH-004	SCH	No	No					
	22	Final Production Schedule	S02	1	SUP-SCH-004	SCH	No	No					
	23	Inspection and Factory Acceptance Test (FAT) Schedule	S03	1	SUP-SCH-002	SCH	No	No					
	24	Shipping Schedule and Packing Lists	S04	1	SUP-LST-020	SCH	No	No					
	25	Startup and Commissioning Schedules	S05	1	SUP-SCH-002	SCH	No	No					
	26	Training Schedule	S06	2	SUP-SCH-002	SCH	No	No					
	27												
	28	CALCULATIONS / DATA SHEETS											
	29	Utility and Electrical Requirements	C01	1	SUP-LST-032	DST	No	Yes					
	30	Allowable Forces and Moments on Nozzles	C02	1	SUP-CAL-043	CAL	No	Yes					
	31	Calculations and Assessments to Satisfy PED	C03	1	SUP-CAL-043	CAL	No	Yes					
	32	Completed Equipment Data Sheets (with Quotes & revised for As-Built)	C04	2	SUP-DST-007	DST	Yes	Yes					As-builts in TOP
	33	Performance Curves and Equipment Calculations as Noted	C05	1	SUP-CAL-047	CAL	No	Yes					
	34	Unbalanced Forces and Moments on Nozzles	C06	1	SUP-CAL-058	CAL	No	No					
	35	Instrument Specification Sheets	C07	2	SUP-DST-004	DST	Yes	Yes					
	36	System Holdup Volume	C08	1	SUP-CAL-043	CAL	No	No					
	37	Seismic / Structural Design Calculations- Must be approved by a certified Danish engine	C09	1	SUP-CAL-052	CAL	No	Yes					
	38	Control Valve / Safety Valve / Rupture Disc Calculations	C10	1	SUP-CAL-049	CAL	No	Yes					
	39	Heat Transfer Calculations	C11	1	SUP-CAL-024	CAL	No	Yes					

Certified By: \_\_\_\_\_

Company: \_\_\_\_\_

Page No.: 1 of 3



## SUPPLIER DRAWING &amp; DATA COMMITMENT (SDDC) FORM

Eq. Title

CLIENT: **FUJIFILM**  
PROJECT: **NORTH STAR PROJECT**  
REQ. NO.:  
DESCRIPTION:

REVISION: \_\_\_\_\_  
DATE: \_\_\_\_\_

COMMITMENT START DATE: \_\_\_\_\_

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PO Number: A8WQ-4-XXXX  
SDDC Code(s): <<Refer to Column III codes below>>  
Process Module Number(s): <<Refer to Bill of Materials>>  
Equipment Tag Number(s): <<Refer to Bill of Materials>>

BUYER'S DRAWING & DATA REQUIREMENT											SUPPLIER'S COMMITMENT		
I	II	III	IV	V	VI	VIII	IX	X	XI		XII	XIII	
REV	REF #	DESCRIPTION	DWG / DOC SDDC CODE	PRIORITY	CWX TYPE	CWX CODE TYPE	AS-BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)	
	40	<b>LISTS AND INDICES</b>											
	41	List of Recommended Spare Parts List	L01	1	SUP-LST-024	LST	No	Yes					
	42	Manual Valve List	L02	2	SUP-LST-033	LST	Yes	Yes					
	43	List and / or Index of Drawings	L03	2	SUP-LST-015	LST	Yes	Yes					
	44	Instrument List / Index	L04	2	SUP-LST-007	LST	Yes	Yes					
	45	List of Special Tools for Maintenance	L05	2	SUP-LST-015	LST	No	Yes					
	46	Control System Inter-Processor Communication List	L06	2	SUP-LST-017	LST	No	Yes					
	47	Bill of Material (BOM) or Detailed Parts List with Material of Construction	L07	2	SUP-BOM-001	LST	Yes	Yes					
	48	List of all Shipped Loose Items	L08	3	SUP-LST-027	LST	No	No					
	49	Detailed Tagged Equipment Parts List	L09	2	SUP-LST-003	LST	Yes	Yes					
	50	Master Data and Document Register	L10	2	SUP-DDR-001	LST	Yes	Yes					
	51	Alarm and Interlock List	L11	1	SUP-LST-015	DDR	No	Yes					
	52	Sub Supplier List and Status Report	L12	1	SUP-LST-015	LST	No	Yes					
	53												
	54	<b>MANUALS / REPORTS</b>											
	55	Installation, Operation, Maintenance and Lubrication Manuals	R01	2	SUP-IOM-002	IOM	No	Yes					
	56	EU CE Certifications, PED Documentation, and ATEX Certification	R02	2	SUP-CER-003	RPT	No	Yes					
	57	Hydrotest Data Reports	R03	2	SUP-CER-022	CER	No	Yes					
	58	Certified Mill Test Reports (MTR) with Heat Numbers for Steel Alloys	R04	2	SUP-CER-017	CER	No	Yes					
	59	Certificates of Compliance (COC) for Elastomers, Plastics, Glass, Ceramic, and Carbon	R05	2	SUP-CER-003	CER	No	Yes					
	60	Instrument Calibration Sheets	R06	2	SUP-CER-001	CER	No	Yes					
	61	Sequence of Operation Descriptions	R07	2	SUP-SPC-008	SPC	No	Yes					
	62	Quality Control and Assurance (QC/QA) Plans	R08	2	SUP-QAD-010	QAD	No	No					
	63	Boroscopy Inspection Report / CD / DVD / Flash Drive Documentation	R09	2	SUP-TRP-014	TRP	No	Yes					
	64	Welding Procedures	R10	2	SUP-WLD-001	WLD	No	Yes					
	65	Welding File Documentation and Weld Logs	R11	2	SUP-WLD-001	WLD	No	Yes					
	66	Certificates of Analysis and / or Compliance for Purge/Shielding Gas	R12	2	SUP-CER-030	CER	No	Yes					
	67	Weld Maps with Welder Identification	R13	2	SUP-WLD-003	WLD	No	Yes					
	68	NDE Reports (RT, UT, PT, MT as applicable)	R14	2	SUP-TRP-017	TRP	No	Yes					
	69	Positive Material Identification Test Results	R15	2	SUP-TRP-018	TRP	No	No					
	70	Mechanical and Electropolishing Procedures	R16	2	SUP-PRC-044	PRC	No	Yes					
	71	Surface Finish and / or Electropolish Reports and / or Certificates	R17	2	SUP-CER-016	CER	No	Yes					
	72	Cleaning and Passivation Procedures	R18	2	SUP-PRC-019	PRC	No	Yes					
	73	Passivation and Cleaning Reports and / or Certificates	R19	2	SUP-CER-016	CER	No	Yes					
	74	Sprayball (e.g. Riboflavin) Test Procedure	R20	2	SUP-PRC-019	PRC	No	Yes					
	75	Sprayball Test Results	R21	2	SUP-TRP-017	TRP	No	Yes					
	76	Vendor Turnover Package	R22	3	SUP-DBK-002	DBK	No	Yes					
	77	Equipment Component & Instrument Receipt and Inspection	R23	2	SUP-TRP-017	TRP	No	Yes					
	78	Inspection Release Certificate	R24	2	SUP-CER-012	CER	No	Yes					
	79	Packaging and Shipping Procedures	R25	3	SUP-PRC-029	PRC	No	Yes					
	80	Manufacturers ISO9001 Certificates	R26	2	SUP-CER-016	CER	No	Yes					
	81	Progress Reports	R27	3	SUP-RPT-008	RPT	No	No					
	82	Inspection Test Plan	R28	1	SUP-ITP-001	ITP	No	Yes					

Certified By: \_\_\_\_\_

Company: \_\_\_\_\_

Page No.: 2 of 3



## SUPPLIER DRAWING &amp; DATA COMMITMENT (SDDC) FORM

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BUYER'S DRAWING & DATA REQUIREMENT											SUPPLIER'S COMMITMENT	
	I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII
REV	REF #	DESCRIPTION	DWG / DOC SDDC CODE	PRIORITY	CWX TYPE	CWX CODE TYPE	AS-BUILT DOCS REQ'D Y/N	REQ'D IN SUPPLIER TOP Y/N	TYPE AND QTY	EXPECTED SUBMITTAL (WEEKS)	PROMISED SUBMITTAL (WEEKS ARO)	DATE DUE AT BUYER'S OFFICE (ARO)
	83	<b>CONTROL SYSTEM DATA</b>										
	84	Software Development Documentation	V01	2	SUP-SPC-012	SPC	No	Yes				
	85	Software Source Codes	V02	2	SUP-SPC-007	SPC	Yes	Yes				
	86	Software Test Protocols	V03	2	SUP-SPC-012	SPC	No	Yes				
	87	Maintenance Manuals	V04	2	SUP-IOM-003	IOM	No	Yes				
	88	Security System Specification	V05	2	SUP-SPC-004	SPC	Yes	Yes				
	89	Instrument Calibration Procedures	V06	2	SUP-PRC-018	PRC	No	Yes				
	90	Operator / User Manual	V07	2	SUP-IOM-002	IOM	No	Yes				
	91	Input / Output (I/O) Schedule	V08	2	SUP-LST-006	LST	Yes	Yes				
	92	System Architecture and Hardware Configuration Diagram	V09	2	SUP-DIA-019	DIA	Yes	Yes				
	93	OEM Software Licenses and Original Diskettes / CD / VDV / Flash Drives and Manuals	V10	2	SUP-IOM-001	IOM	No	Yes				
	94	Certification of Software Compliance with 21 CFR Part 11	V11	2	SUP-CER-003	CER	No	Yes				
	95											
	96	<b>SYSTEM, OPERATIONAL, AND VALIDATION DOCUMENTS</b>										
	97	Functional Requirements Specification	F01	2	SUP-SPC-008	SPC	Yes	Yes				
	98	Detail Design Specification	F02	2	SUP-SPC-004	SPC	Yes	Yes				
	99	Factory Acceptance Test (FAT) Protocols and Procedures	F03	2	SUP-PRC-012	PRC	No	No				
	100	Completed FAT Results and Documents	F04	2	SUP-TRP-006	TRP	No	Yes				
	101	Completed FAT Punchlists	F05	2	SUP-TRP-006	TRP	No	Yes				
	102	Site Acceptance Test Protocols and Procedures	F06	3	SUP-PRC-041	PRC	No	No				
	103	Plate and Tubing Weld and Polish Samples	F07	2	SUP-SMP-001	SMP	N/A	N/A	N/A			
	104	Material Safety Data Sheets (MSDS)	F08	2	SUP-DST-010	DST	No	Yes				
	105	Supplier Warranty Statement and Copies of Supplier Purchase Orders	F09	3	SUP-CER-016	CER	No	Yes				
	106	Long Term Storage Instructions	F10	3	SUP-PRV-001	PRV	No	Yes				
	107											
	108	<b>ELECTRICAL DATA - FOR ELECTRICAL PACKAGE REQUISITIONS ONLY</b>										
	109	CTs an VTs Calculations	E01	2	SUP-CAL-016	CAL	No	Yes				
	110	Protection CTs and VTs curves	E02	3	SUP-CRV-005	CRV	No	Yes				
	111	Electrical Panel Termination Diagrams	E03	2	SUP-DIA-003	DIA	Yes	Yes				
	112	Electrical Schematic Diagrams	E04	2	SUP-DIA-004	DIA	Yes	Yes				
	113	Protection, Control & Metering Diagram	E05	2	SUP-DIA-018	DIA	Yes	Yes				
	114	Terminal Block Diagram	E06	2	SUP-DIA-020	DIA	Yes	Yes				
	115	Electrical Data Sheet	E07	2	SUP-DST-001	DST	Yes	Yes				
	116	Assembly/Subassembly Drawings including Installation and Erection Procedures	E08	2	SUP-DTL-002	DTL	Yes	Yes				
	117	Cable entry installation details & Electrical Termination & Hook-up details	E09	2	SUP-DTL-006	DTL	Yes	Yes				
	118	Support Details including locations of supports and sizes of bolts	E10	2	SUP-DTL-030	DTL	Yes	Yes				
	119	General Arrangement Drawing - Cabinets, Panels & Junction Box Layout	E11	1	SUP-GAD-004	GAD	Yes	Yes				
	120	General Arrangement Drawing - Dimensional outline incl foundation and mounting details	E12	1	SUP-GAD-008	GAD	Yes	Yes				
	121	Setpoint List - setting details and configuration files for relays	E13	2	SUP-LST-026	LST	Yes	Yes				
	122	Termination Schedules	E14	2	SUP-LST-031	LST	Yes	Yes				
	123	Single Line Diagrams	E15	1	SUP-SLD-001	SLD	Yes	Yes				
	124	Material Test Reports (Type Test Reports)	E16	3	SUP-TRP-018	TRP	No	Yes				

Certified By: \_\_\_\_\_

Company: \_\_\_\_\_

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