

<b>Project:</b> Iron Bridge SMPEI Process Plant Construction – Dry Plant		<b>FMG Document No:</b> 662NSC2002-2000-IT-QA-0006		<b>Document No:</b> C292-QU-ITP-0006		<b>Revision:</b> 1		
<b>Project No:</b> C292		<b>Contract No:</b> 662NSC2002-0000-CO-CP-0002		<b>Prepared By:</b> P Thomson		<b>Approved By:</b> W. Bradshaw		
<b>Scope:</b> Piping Installation - Carbon Steel						<b>System / Section:</b>		
<b>Control Point</b>	H = Hold Point (Work must not proceed to the next step until this activity is completed and a signature obtained); W = Witness Point (Notify to permit witness, work can proceed if witness does not attend at agreed time); S = Surveillance (Monitor operations / surveillance of activity); R = Review Documentation (Sign to record review);							
<b>Resp. Person</b>	QC - Quality Inspector; PE - Project Engineer; CQR - Client Quality Representative; CI - Coating Inspector; PM - Project Manager; SS - Site Supervisor; DC - Dimension Checker; WE - Welding Engineer; PP - Pre-processing Personnel							
ACT No.	DESCRIPTION OF ACTIVITY	PROCEDURE / SPECIFICATION REFERENCE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENTATION	RESP. PERSON	CONTROL POINT		REMARKS
						CIVMEC	CLIENT	
<b>1 Submission / Approval of Documentation</b>								
1.1	Submit Piping Installation (Test Plan for FMG Approval)	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 10.3 100-ST-QA-0002 Cl. 2.1	Approved ITP	QC / PE	H / R	R	
1.2	Submit Weld Procedure Specifications (WPS) and Weld Procedure Qualification Records (WPQR) to FMG for Approval	100-SP-PI-0001_Rev 4	100-SP-PI-0001_Rev 4 Cl. 8.4 AS 4041	Approved WPS & WPQR	QC / PE	H / R	R	
1.3	Submit Welder Qualification Records (WQR) to FMG for Approval	100-SP-PI-0001_Rev 4	100-SP-PI-0001_Rev 4 Cl. 8.4 AS 4041	Approved WQR	QC / PE	H / R	R	
<b>2 Calibration</b>								
2.1	Ensure All Inspection, Measuring and Testing Equipment is Calibrated Including: • Welding Consumable Storage Oven; • Welding Consumable Hot Box; • Hydrostatic Testing Equipment; and • Torque Wrenches.	100-SP-PI-0001_Rev 4 Project Quality Management Plan C283-QU-PLN-0001	100-SP-PI-0001_Rev 4 Cl. 9.11 Pressure Gauges Calibrated within 60 Days AS 4041	Nata Calibration Certificates	QC / PE	R	R	
<b>3 Materials Receipt, Inspection &amp; Storage</b>								
3.1	Inspect Supplied and Fabricated Materials Including Pipe, Fittings, Valves, Fasteners, Gaskets and Other Pipe Related Materials for the Following: • Identification/Markings; • End Caps on Valve Ends and Pipe; • Conformance to Specification and Drawings; • Damaged or Missing Components; and • Review Material Certification and Material Traceability Records. <b>NOTE:</b> Non-Conforming Materials Shall be Segregated, Quarantined and an OS&D Report Completed.	100-SP-PI-0001_Rev 4 Project Quality Management Plan C292-QU-PLN-0001 Civmec Material Storage, Handling & Traceability Work Instruction 10-QU-QC-WIN-0010	100-SP-PI-0001_Rev 4 Cl. 8.4	Delivery Dockets Material Certificates OS&D Report	SS / QC / PE	S / R	S	
3.2	Supplied Welding Consumables to be Inspected for the Following and Stored in Accordance with Relevant Specifications and Recommendations: • Damage to Consumables or Packaging; • Contamination with Dissimilar Metals; and • Review Material Certification.	100-SP-PI-0001_Rev 4 Civmec welding Consumable Control Work Instruction 10-QU-QC-0005	100-SP-PI-0001_Rev 4 Cl. 8.4 Manufacturer Recommendations	Delivery Dockets Material Certificates OS&D Report	SS / QC / PE	S / R	S	
3.3	Store Materials to Eliminate Damage and Contamination: • Materials Stored in Designated Laydown Areas or Containers on Wooden Gluts, Pallets or Shelving to Prevent Damage or Ingress of Foreign Material; • End Caps on Valve Ends and Pipe to Remain Until Installation; and • Non-Ferrous Materials to be Segregated and Protected to Prevent Contamination.	100-SP-PI-0001_Rev 4 AS4041 Civmec Material Storage, Handling & Traceability Work Instruction 10-QU-QCWIN-0010	100-SP-PI-0001_Rev 4 Cl. 8.2	Field Inspection Records Signed ITP	SS / QC / PE	S	S	
<b>4 Excavation &amp; Trench Preparation (If applicable)</b>								
4.1	Refer to Underground Services Installation ITP	C292-QU-ITP-0001	C292-QU-ITP-0001	C292-QU-ITP-0001	SS / PE	H / R	R	

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<b>5 Site Welding</b>								
5.1	Complete Fit-up and Preparation of Piping for Welding, Including: • Cutting and Beveling as per WPS; • Dimensional and Orientation Checks; and • Alignment and Root Gap Checks.	100-SP-PI-0001_Rev 4 AS 4041 AS 1579	100-SP-PI-0001_Rev 4 Cl. 8.4 AS 4041 AS 1579	Weld Traceability Records	QC / SS	S / R	S / R	
5.2	Undertake Welding in Accordance with Approved Weld Procedure Specification	100-SP-PI-0001_Rev 4 AS 4041 AS 1579	100-SP-PI-0001_Rev 4 Cl. 8.4 AS 4041 AS 1579	Weld Traceability Records	QC / SS	S / R	S / R	
5.3	Complete Visual Inspection of Completed Weld - 100% visual inspection class 3 Piping	100-SP-PI-0001_Rev 4 AS 4041 AS 1579 AS 4037	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS 1579 AS 4037	Weld Traceability Records	QC	H	S / R	
<b>7 Pipe Installation</b>								
7.1	Installation of Piping, Valves and Other Associated Materials in Accordance with Drawings and Specifications Completing the Following: • Check Pipe Internal Cleanliness is Free From Obstructions, Dirt and Other Foreign Matter; • Check Flange Alignment, Orientation and Level; • Check Pipe Elevations, Plumb and Strains; • Check Bolting & Gasket Size, Type and Quantity; • Check Flanged Connections are Torqued in Accordance with Piping Class Data Sheets; • Check Valve and Instrument Orientation, Type and Nameplate; • Check Vents and Drains Plugged; and • Check Pipe Support Position and Type.	100-SP-PI-0001_Rev 4 Civmec Piping Flange Management Procedure C283-QU-PRO-0002 AS 4041 IFC Drawings	100-SP-PI-0001_Rev 4 Cl. 8.2, 8.4, 9.6, 9.7, 10 & 11 AS 4041 IFC Drawings	FMG C1-PI-ITR-002 PIPING - WELDED STEEL C1-PI-ITR-003 PIPING - THREADED	SS	S / R	S / R	
7.2	Complete Pipeline Identification Banding (where applicable)	100-SP-PI-0001_Rev 4 Cl. 8.2 AS 1345 AS 2700	100-SP-PI-0001_Rev 4 Cl. 8.2 AS 1345 AS 2700	FMG C1-PI-ITR-002 PIPING WELDED STEEL C1-PI-ITR-003 PIPING THREADED	SS	S / R	S / R	
<b>8 Hydrostatic Testing</b>								
8.1	Submit Test Pack for Portion of Piping to be Hydrostatically Tested and Complete Field Inspections: • Field Inspection Records Completed up to Hydrostatic Testing; • Piping adequately supported prior to filling • All Welds are Exposed; • All Flanged Connections Verified; • Area is Barricaded and Appropriately Signed; • Required Valves / Instruments / Equipment Removed or Isolated from Test; • Appropriate High Point Vents are Included in the System; and • System can be Safely Drained.	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems) Hydrotesting Procedure C292-QU-PRO-0003	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS2419 (Firewater Systems)	Hydrostatic Test Pack inc marked up Master PID's FMG C1-PI-ITR-008 PIPING - SERVICE/ LEAK/ PRESSURE TEST	SS / PE	H	H	

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<b>Project No:</b> C292	<b>Contract No:</b> 662NSC2002-0000-CO-CP-0002	<b>Prepared By:</b> P Thomson	<b>Approved By:</b> W. Bradshaw

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8.2	Undertake Hydrostatic Pressure Test in Accordance with Hydrostatic Testing Procedure	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems) Hydrotesting Procedure C292-QU-PRO-0003	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS2419 (Firewater Systems)	FMG C1-PI-ITR-008 PIPING - SERVICE / LEAK / PRESSURE TEST Hydrotest Report	SS / PE	H	H	
8.3	Complete line flushing and drying in accordance with Hydrostatic Testing Procedure (Applicable lines only)	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems)	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS2419 (Firewater Systems)	FMG C1-PI-ITR-007 PIPING - FLUSHING / PURGING Hydrotest Report	SS / PE	H	H	
9	<b>Backfill of Excavation (if applicable)</b>							
9.1	Refer to Underground Services Installation ITP	C292-QU-ITP-0001	C292-QU-ITP-0001	C292-QU-ITP-0001	SS / PE	R	R	
10	<b>Final Inspection</b>							
10.1	Complete Reinstatement Following Hydrostatic Testing and Conduct Final Inspection of Installed Pipe	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems) IFC Drawings	100-SP-PI-0001_Rev 4 Cl. 8.2, 8.4, 9.12 & 11 AS 4041 AS2419 (Firewater Systems) IFC Drawings	Signed ITP Punchlist	SS / PE	H	H	
11	<b>Finalise Documentation</b>							
11.1	Redline Drawings Verified for Relevant Portion of Piping	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 10.2 100-ST-QA-0002 Cl. 2.8	Redline Drawings	QC / PE	R	R	
11.2	Complete Construction Verification & Punchlisting	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 9.1 100-ST-QA-0002 Cl. 9.2	Approved Construction Verification Documentation Signed-off Punchlist	QC / PE	H / R	H / R	

**SIGNATURE IDENTIFICATION REGISTER**

NO	NAME	SIGNATURE	POSITION TITLE	ORGANISATION
1				
2				
3				
4				
5				
6				