



Inspection and Test Plan

Customer Name:Nexen c/o Solaris Engineering	Document/DWG#: 35024
Customer PO#: 4500192767	Issue Date: 20/10/14
Work Order #: 35024	Issue By: BJ Syluski
Description: Separator Package	Approved By:
Project Name: d-37-H Well Pad Metering and Separator Pkg.	Rev. #: 0
D = Document Review, M = Monitor, W = Witness, H = Hold Point	

Inspection Level: Customer Representative													
Inspection Level: Bromley QA Inspector													
Inspection Level: A.I.													
Step #	Process/Operation Description	Characteristic	Applicable Procedure	Acceptance Criteria	Verifying Documents/Reference	Frequency	Notes	Inspection Performed By:	Inspection Signoff	Comments	Bromley Q.C.I.	A.I.	Nexen/Solaris Eng.
1	Fabricate Skid	General Fabrication/Design	Nexen Spec. 130-80	CSA W59/Nexen 130-80	Drawings		P. Eng Stamp Req'd	Proj. Manager/Solaris			D		H
		Material Traceability	Nexen Spec. 130-80	CSA G40.21/Nexen 130-80	BOM / MTR's	100%	Verify material complies with BOM/spec. upon receipt	Proj. Manager/QA			D		D
		WPS Review	Nexan Spec. & CSA W59	Nexan Spec. & CSA W59	Nexan Spec. & CSA W59	100%	Verify compliance with applicable spec.	Nexen			D		D,M
		Fit-Up & Alignment	Nexen Spec. 130-80	CSA W59/Nexen 130-80	Drawings	100%		Operator			M		D
		Dimensional Checks	Nexen Spec. 130-80	CSA W59/Nexen 130-80	Drawings	100%		Operator			M		D,M
		Welding Materials Conformance	CSA W59	CSA W48/WPDS	Drawings/WPDS	100%	Verify electrodes and shielding gas conforms to CSA Spec.	Operator / QA			W		W
		Welding Inspection	CSA 178.2/Nexen Spec.		Drawings	100%	All welds per WPDS/CSA W59	QCI / Nexen Insp.			M		M
		Magnetic Particle Insp.	Nexen Spec. 130-80	No weld defects found	NDE Reports	100%	Full MT on all lift lugs	3rd Party			D, W		D
		Sandblast	SSPC-SP6	Nexen Spec. 200-70		100%		QA / Contractor			W		D,M
		Paint	Nexen Spec. 200-70	Nexen Spec. 200-70		100%	Bromley Grey	QA / Contractor			W		D,M
2	Fabricate Piping	General Fabrication / Design		ASME B31.3/ Nexen Spec. 140-02b/120-01	Spool Drawings						D		D
		Material Traceability	ASME B31.3/Bromley QMS/Nexen Spec. 120-01	Nexen Spec. 120-01/Chem. Spreadsheet	MTR's/PO/Nexen Chem. Spreadsheet	100%	Verify compliance with Nexen spec.	Proj. Manager / QA / Supplier		Purchasing to forward Nexen chem. Spreadsheet to all suppliers	D,M		D,M
		WPS Review	Nexen Spec. 120-01 & ASME Sec. IX	Nexen Spec. 120-01 & ASME Sec. IX	Nexen Spec. 120-01 & ASME Sec. IX	100%	Verify compliance with applicable spec.	Nexen			D		D,M
		Fit-Up & Alignment	Bromley WPS/Nexen Spec. 120-05 & 120-05A	Bromley QMS/Nexen Spec. 120-05 & 120-05A	Drawings/WPS	100%		Operator / QA			M		D,M
		Dimensional Checks	Bromley WPS/Nexen Spec. 120-05 & 120-05A	Bromley WPS/Nexen Spec. 120-05 & 120-05A	Drawings	100%		Operator / QA			D,M		D
		Welding Materials Conformance	Bromley QMS/Nexen Spec. 120-05	ASME Sec IX/Nexen Spec 120-05	Drawings/WPS	100%	See Bromley QMS for use and storage of low hydrogen electrodes	Operator / QA			M		D, W
		Welding Inspection	Nexen Spec. 120-05 & 05A/WPS/ASME B31.3	Nexen Spec. 120-05 & 05A/WPS/ASME B31.3	Nexen Spec. 120-05 & 05A/WPS/ASME B31.3	100%	Verify all welds in the pressure envelope conform to specifications	Operator / QA / 3rd party			D,M		D,M
		PWHT	Nexen Spec. 120-05/WPS/ASME B31.3	Nexen Spec. 120-05/WPS/ASME B31.3	Nexen Spec. 120-05/WPS/ASME B31.3	100%	1150F for 60mins.	Proj. Manager / QA			D,M		D



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		NDE	Nexen Spec. 120-06 & 06B/ASME B31.3	Nexen Spec. 120-06 & 06B/ASME B31.3	Drawings/Nexen Spec.	100%	100% RT, 100% MT	QA / NDE Contractor			D		D
		Pressure Testing	Bromley QMS/ASME B31.3	Bromley QMS/ASME B31.3	Drawings/ASMe B31.3	100%	1.5 times design pressure	QA		Pressure test to include instrument drain lines	W,D		H,W
		Painting/Coating	Nexen Spec. 200-70	Nexen Spec. 200-70	Drawings/Nexen Spec.	100%	Bromley Grey	QA / Contractor		See drawing for spools requiring internal coating	M		D,M
3	Fabricate Vessel	General Fabrication / Design		ASME SEC VIII Div. 1/Nexen Spec. 130-02	Drawings / Nexen Spec.						D	D,W	H
		Material Traceability	ASME SEC VIII Div. 1/Bromley QMS/Nexen Spec. 120-01	Nexen Spec. 120-01/Chem. Spreadsheet	MTR's/PO/Nexen Chem. Spreadsheet	100%	Verify compliance with Nexen spec.	Proj. Manager / QA / Supplier		Purchasing to forward Nexen chem. Spreadsheet to all suppliers	D,M	W	D,M
		WPS Review	Nexen Spec. 120-01 & ASME Sec. IX	Nexen Spec. 120-01 & ASME Sec. IX	Nexen Spec. 120-01 & ASME Sec. IX	100%	Verify compliance with applicable spec.	Nexen			D		D,M
		Fit-Up & Alignment	ASME SEC VIII Div. 1/Bromley QMS/Nexen Spec. 130-02	ASME SEC VIII Div. 1/Bromley QMS/Nexen Spec. 130-02	Drawings/WPS	100%		Operator / QA			D,M	D,W	D,M
		Dimensional Checks	ASME SEC VIII Div. 1/Bromley QMS/Nexen Spec. 130-02	ASME SEC VIII Div. 1/Bromley QMS/Nexen Spec. 130-02	Drawings	100%	See ASME SEC VIII Div. 1 & Nexen Spec. 130-02 for tolerances	Operator / QA			D,W	W	D,M
		Welding Materials Conformance	Bromley QMS/Nexen Spec. 120-05	ASME Sec IX/Nexen Spec 120-05	Drawings/WPS	100%	See WPS	Operator / QA			D,M	W	D,M
		Welding Inspection (internal)	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	100%		Proj. Manager / QA / A.I. / 3rd Party Insp.			H,W, D	H,W, D	D,M
		Welding Inspection (external)	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	100%		Proj. Manager / QA / A.I. / 3rd Party Insp.			H,W, D	H,W, D	D,M
		PWHT	Nexen Spec. 120-05/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05/WPS/ASME SEC VIII Div. 1	100%	1150F for 90mins.	QA			D,W	W	D,M
		NDE	Nexen Spec. 120-06 & 06A/ASME SEC VIII Div. 1	Nexen Spec. 120-06 & 06A/ASME SEC VIII Div. 1	Drawings/Nexen Spec.	100%	NDE to be performed AFTER PWHT	Proj. Manager / QA			H,W	W	D,M
		Pressure Testing	Bromley QMS/ASME SEC VIII Div. 1	Bromley QMS/ASME SEC VIII Div. 1	Drawings/ASME SEC VIII Div. 1	100%	1.3 times design pressure	Proj. Manager / QA / A.I. / 3rd Party Insp.			H,W, D	H,W, D	H
		Welding Inspection (final)	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	Nexen Spec. 120-05 & 05A/WPS/ASME SEC VIII Div. 1	100%		Proj. Manager/QA/ A.I./3rd Party Insp.			H,W, D	W,D	D,M
		Painting/Coating	Nexen Spec. 200-70	Nexen Spec. 200-70	Drawings/Nexen Spec.	100%	Bromley Grey	QA / Contractor		See drawing for spools requiring internal coating	M		D,M



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4	Skid Assembly (mechanical)	Skid Layout	Drawings/Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	100%		QA			M		D,W
		Fit-up/Bolt-up	Drawings/Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	100%	Assemble package as per P&ID and Layout drawings	Proj. Manager / QA			M		D,M
		Dimensional Checks	Drawings/Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	Drawings / Nexen Spec. 130-80	100%		Proj. Manager / QA			W		D,M
5	Building Fabrication and Erection	General Fabrication/Design	Drawings / Nexen Spec. 130-80/Spec. 180-50	Drawings / Nexen Spec. 130-80/Spec. 180-50	Drawings / Nexen Spec. 130-80/Spec. 180-50	100%	Fabricate Building as per drawings	Proj. Manager / QA			W		D,M
		Building assembly	Drawings / Nexen Spec. 130-80 / Spec. 180-50	Drawings / Nexen Spec. 130-80 / Spec. 180-50	Drawings / Nexen Spec. 130-80 / Spec. 180-50	100%		Proj. Manager / QA			M		D,M
6	Skid Assembly (I & E)	P&ID	Drawings / Nexen Spec. 130-80/Spec. 180-50	Drawings/130-80/160-02	Drawings/130-80/160-02	100%		Proj. Manager / Contractor		Nexen to supply E&I contractor	M		W
		Pneumatic Test	Drawings/130-80/160-02	Drawings/130-80/160-02	Drawings/130-80/160-02	100%				Nexen to supply E&I contractor	W,D, H		W,H
		Function Test	Drawings/130-80/160-02	Drawings/130-80/160-02	Drawings/130-80/160-02	100%		Proj. Manager / 3rd Party / QA		Nexen to supply E&I contractor	W,D		W
7	Final Inspections	System Cleanliness	Drawings / Nexen Specs.	Drawings / Nexen Specs.	Drawings / Nexen Specs.	100%		Proj. Manager/3rd Party/QA			W		D,M
		Nameplate	ASME Sec VIII Div. 1	ASME Sec VIII Div. 1	ASME Sec VIII Div. 1	100%		Proj. Manager/3rd Party/QA			W		W
		Touch-ups				100%	Touch-ups as req'd/prep for shipment				W		D,M
		Shipment and Delivery				100%					W		H