



NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)

No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.

Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref.: NT/103379/18-05

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Report No: NDT/RT/180320-01/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Tenaga Tiub Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Lean Solution Cooler	IQI type :	ASTM 1B
Job No:	TTEC 17195	Film Manufacturer/Type :	FUJI 100(classII)
Material:	SA 516 GR70	Density :	2.2-3.8
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	355mm
Acceptance Code:	ASME Sect. VIII DIV.1 : 2015 Ed.+Tema 9TH Ed.	Source Side of Object to Film Distance:	(25.4+3)mm
Examination Date:	04 April 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	SWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
E-1506								
CS4 R1 (WN89)	28.4	3	710	25.4	1-2	Por	Accept	

End of Report

Legend:

Ti: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Date: 05 April 2018



Client Representative:

Name:
Date:



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Report No: NDT/RT/180320-02/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Tenaga Tiub Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Surface Condenser	IQI type :	ASTM 1B
Job No:	TT 17146	Film Manufacturer/Type :	FUJI 100(classII)
Material:	SA 516 GR 70	Density :	2.2-3.8
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	400mm
Acceptance Code:	ASME Sect. VIII DIV.1 : 2015 Ed.+Tema 9TH Ed.	Source Side of Object to Film Distance:	(15.9+3)mm
Examination Date:	04 April 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	SWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
E-54-01A								
LS 2 (WN220)	18.9	3	—	15.9	0 - 1	LF	Reject	
					1 - 2	Por / Sur	Accept	Visual AR
					2 - 3	Por	Accept	AR
					3 - 4	Por / SI	Reject	
					4 - 5	Por	Accept	
					5 - 6	Por	Reject	

End of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
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Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Client Representative:

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

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Date: 05 April 2018

Date:





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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Tenaga Tiub Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Surface Condenser	IQI type :	ASTM 1B
Job No:	TT 17146	Film Manufacturer/Type :	FUJI 100(classII)
Material:	SA 516 GR 70	Density :	2.2-3.8
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	400mm
Acceptance Code:	ASME Sect. VIII DIV.1 : 2015 Ed.+Tema 9TH Ed.	Source Side of Object to Film Distance:	(15.9+3)mm
Examination Date:	04 April 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	SWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
E-54-01A								
LS 1 R1 (WN220)	18.9	3	-	15.9	6 - 7 8 - 9	Por SI / Por	Reject	

End of Report

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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Tenaga Tiub Sdn. Bhd.	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Welding Procedure Specification (WPS) TT/WPS/397/2018	IQI type :	ASTM 1B
Job No:	—	Film Manufacturer/Type :	FUJI 100(Class II)
Material:	SA 312 TP 316	Density :	2.0-3.5
Welding Process :	GTAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	88.9mm
Acceptance Code:	ASME Sect. IX ; 2017 Ed.	Source Side of Object to Film Distance:	(15.24+3)mm
Examination Date:	04 April 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
TT/WPS/397/2018 TP - 1 (WN356)	18.24	3	88.9	15.24	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 3	NRI	Accept	
					3 - 0	NRI	Accept	

End of Report

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TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
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Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Client Representative:

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Name:

Date: 05 April 2018

Date:





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Client and Testing Particulars

Client :	Tenaga Tiub Sdn. Bhd.	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Welding Procedure Specification (WPS) TT/WPS/397/2018	IQI type :	ASTM 1B
Job No:	-	Film Manufacturer/Type :	FUJI 100(Class II)
Material:	SA 312 TP 316	Density :	2.0-3.5
Welding Process :	GTAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	88.9mm
Acceptance Code:	ASME Sect. IX ; 2017 Ed.	Source Side of Object to Film Distance:	(15.24+3)mm
Examination Date:	04 April 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Weder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
TT/WPS/397/2018								
TP - 2 (WN356)	18.24	3	88.9	15.24	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 3	NRI	Accept	
					3 - 0	NRI	Accept	

End of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
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Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Client Representative:

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Name:

Date: 05 April 2018

Date:

