



Fermi National Accelerator Laboratory

Technical Division-Machine Shop

Procedure Qualification Record	No. Fermi PQR SS-1-001	Date: 1/10/2010
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Revision: Date: Remarks:	In accordance with: <i>WPS-SS-1-001</i>
Welding Process/Weld Type: <i>GTAW/Manual</i>	

Joints (QW-402)	Details:								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Weld Type:</td><td><i>Square Butt Groove</i></td></tr> <tr><td>Backing:</td><td><i>Gas Backing Only</i></td></tr> <tr><td>Root Opening:</td><td><i>None</i></td></tr> <tr><td>Root Face:</td><td><i>.032</i></td></tr> </table>	Weld Type:	<i>Square Butt Groove</i>	Backing:	<i>Gas Backing Only</i>	Root Opening:	<i>None</i>	Root Face:	<i>.032</i>	<p style="text-align: center;"><i>Open Root-Argon Backing</i></p>
Weld Type:	<i>Square Butt Groove</i>								
Backing:	<i>Gas Backing Only</i>								
Root Opening:	<i>None</i>								
Root Face:	<i>.032</i>								

Base Metals (QW-403)	Post Weld Heat Treatment (QW-407)
Material Spec., Type or Grade:	Type: <i>No PWHT performed</i>
<i>SA 240 plate type 304</i> To <i>SA 240 plate type 304</i>	Temperature: <i>None</i>
P Number 8 Group 1 TO P Number 8 Group 1	Time: <i>N/A</i>
Thickness (in.): <i>Groove: .032"-.064"</i>	
Diameter (in.): <i>Plate</i>	

Filler Metals (QW-404)		Gas (QW-408)	Percent-Composition	
SFA Specification	<i>Autogenous</i>	Gas	Mixture%	Flow Rate
AWS Classification:		Shielding <i>Argon</i>	<i>99.99%</i>	<i>15 CFH</i>
Filler Metal F-No.:		Trailing: <i>None</i>		
Weld Metal Analysis A-No.: <i>8</i>		Backing: <i>Argon</i>	<i>99.99%</i>	<i>15 CFH</i>
Size of Filler Metal (in.):		Other: <i>Maintain Argon purge on backside of plate for entire weld. Use alignment fixture to position plates for welding and purging. Non-Pulsing Current</i>		
Weld Deposit "t"(in.):				
Filler Metal Product Form:				

Positions (QW-405)		Electrical Characteristics (QW-409)	
Position of Joint:	<i>Flat-1G</i>	Current/Polarity: <i>DCEN</i>	
Weld Progression:	<i>N/A</i>	Amps: <i>15-40</i>	Volts <i>9-12</i>
Other:		Tungsten Type & Size:	<i>1/16" Ø-3/32" Ø</i>
		Other: <i>Non-Pulsing Current</i>	

Preheat (QW-406)		Technique (QW-410)	
Preheat Temperature:	<i>69° Ambient Temperature</i>	Travel (ipm): <i>As Required</i>	Oscillation: <i>None</i>
Interpass Temperature:	<i>350° F Maximum</i>	String/Weave Bead:	<i>Stringer</i>
Minimum Weld Temp.	<i>32° F</i>	Multiple/Single Pass (per side)	<i>Single</i>
		Multiple/Single Electrode:	<i>Single Electrode</i>
		Nozzle/Gas Cup Size:	<i>#6</i>



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WPS No. Fermi WPS SS-1-001

Tensile Test (QW-150)

Specimen No.	Dimensions	Area (Squared in.)	Ultimate Total Load (lbs.)	Ultimate Stress (PSI)	Failure Type & Location
001	0.0335 x 0.7530	0.0252	2272.0	90200	HAZ/Ductile
002	0.350 x 0.7570	0.0265	2433.0	91800	Adjusted to Weld

Guided Bend Test (QW-160)

Figure Number & Type	Result	Figure Number Type	Result
QW-462.3 (a) Face Bend	Pass	QW-462.3 (a) Root Bend	Pass
QW-462.3 (a) Face Bend	Pass	QW-462.3 (a) Root Bend	Pass

Welder's Name : William Gatfield	ID : 04609N	Weld Stamp : W-12
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Visual Examination: Acceptable	X-ray per ASME Section IX, QW-191.2.
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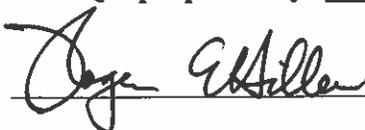
Radiography Conducted By: N/A	
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Tests Conducted by: Exova Inc.	Ref# T914240	Date: 12/07/2009
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Welding of coupon Verified by: Roger Hiller 00362N	Ref.# 11142009-RH	Date: 11/14/2009
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We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

PQR prepared by: Fermi National Accelerator Laboratory

Authorized Representative  1/10/2010 ID# 00362N

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