



# Fermi National Accelerator Laboratory

Technical Division-Machine Shop

## Welder Performance Qualification Record

|                               |                  |                    |      |               |       |               |      |
|-------------------------------|------------------|--------------------|------|---------------|-------|---------------|------|
| <b>Welder's Name</b>          | William Gatfield |                    |      | <b>FNAL #</b> | 04609 | <b>ASME #</b> | W-12 |
| <b>Welding Process:</b>       | 1st              | GTAW               | Type | Manual        | 2nd   | Type          |      |
| Performed in accordance with: |                  | Fermi WPS SS-1-001 |      |               |       |               |      |

|                |                       |                    |                       |             |           |                   |  |
|----------------|-----------------------|--------------------|-----------------------|-------------|-----------|-------------------|--|
| <b>Joint:</b>  | <b>Fillet:</b>        | Production Weld    |                       | Test Coupon |           |                   |  |
| <b>Groove:</b> | <b>Double-Welded:</b> | Metal Fused        | Metal Non-Fused       | Non-Metal   | Open Root | Consumable-Insert |  |
|                | <b>Single-Welded:</b> | With Solid Backing | Without Solid Backing |             |           |                   |  |

|                           |                       |                   |    |                            |                   |                           |                   |
|---------------------------|-----------------------|-------------------|----|----------------------------|-------------------|---------------------------|-------------------|
| <b>Base Metal:</b>        | <b>Specification:</b> | SA 240            | TO | SA 240                     | ASME P # 8, Gp. 1 | TO                        | ASME P # 8, GP. 1 |
| <b>Plate</b>              |                       | <b>Pipe</b>       |    |                            |                   | <b>Tube</b>               |                   |
| Actual Thickness:.032     |                       | Nominal Diameter: |    | Actual Diameter:           |                   | Overall Diameter:         |                   |
| Qualified Range:.064      |                       | Wt/Schedule:      |    | Qualified Thickness Range: |                   | Wall:                     |                   |
| Qualified Ø Range: 2.875" |                       | Actual Thickness: |    | Qualified Diameter Range:  |                   | Actual Diameter:          |                   |
|                           |                       |                   |    |                            |                   | Qualified Diameter Range: |                   |

|                           |                 |                               |  |                               |  |                             |  |
|---------------------------|-----------------|-------------------------------|--|-------------------------------|--|-----------------------------|--|
| <b>Filler:</b>            | Autogenous-None | <b>1<sup>st</sup> Process</b> |  | <b>2<sup>nd</sup> Process</b> |  |                             |  |
| <b>Specification:</b>     |                 | <b>Class:</b>                 |  | <b>Specification:</b>         |  | <b>Class:</b>               |  |
| <b>Diameter(s):</b>       |                 |                               |  | <b>Diameter(s):</b>           |  |                             |  |
| <b>F #:</b>               |                 |                               |  | <b>F #:</b>                   |  |                             |  |
| <b>Deposit Thickness:</b> |                 | <b>Range Qualification:</b>   |  | <b>Deposit Thickness:</b>     |  | <b>Range Qualification:</b> |  |

|                                      |                        |             |      |                   |          |               |  |
|--------------------------------------|------------------------|-------------|------|-------------------|----------|---------------|--|
| <b>Welding Position:</b>             | Flat                   | If Vertical |      | Uphill            | Downhill |               |  |
| <b>Gas (Type &amp; Composition):</b> | Shielding: Argon 99.9% |             |      | Root Side Backing |          | Argon 99.9%   |  |
| <b>Electrical Characteristics</b>    | Type Current           | AC          | DCEP | DCEN              |          |               |  |
|                                      | Transfer GMAW          | Spray       |      | Globular          | Pulse    | Short Circuit |  |

|                          |              |                         |  |
|--------------------------|--------------|-------------------------|--|
| <b>Visual Inspection</b> |              |                         |  |
| <b>Appearance:</b>       | Satisfactory | <b>Undercut:</b>        |  |
|                          |              | <b>Piping Porosity:</b> |  |

|                               |                |                        |                     |                        |                |
|-------------------------------|----------------|------------------------|---------------------|------------------------|----------------|
| <b>Guided Bend Test</b>       |                |                        |                     |                        |                |
| <b>Type and Figure</b>        | <b>Results</b> | <b>Type and Figure</b> | <b>Results</b>      | <b>Type and Figure</b> | <b>Results</b> |
| 001 Tensile                   | HAZ-Ductile    | 003 Face Bend          | Pass                | 005 Root Bend          | Pass           |
| 002 Tensile                   | WM-Ductile     | 004 Face Bend          | Pass                | 006 Root Bend          | Pass           |
| Test Conducted by: Exova Inc. |                |                        | Lab Test #: T914240 | Date: 12/7/2009        |                |

|                          |      |                  |  |
|--------------------------|------|------------------|--|
| <b>Radiographic Test</b> |      |                  |  |
| <b>Results:</b>          |      | Per ASME IX      |  |
| <b>Radiographer:</b>     | Inc. | <b>Examiner:</b> |  |
|                          |      | <b>Test #:</b>   |  |
|                          |      | <b>Date:</b>     |  |

|   |                          |                          |                                  |
|---|--------------------------|--------------------------|----------------------------------|
| <b>Fillet Weld Test Results</b>                           |                          |                          |                                  |
| <b>Fracture Test:</b>                                     |                          |                          |                                  |
| (Location, Nature, and size of Crack or Tear in Specimen) |                          |                          |                                  |
| <b>Length of Weld:</b>                                    | <b>Length of Defect:</b> | <b>Percent of Defect</b> |                                  |
| <b>Macro Test: Fusion</b>                                 |                          |                          |                                  |
| <b>Appearance: Fillet Size</b>                            | inch                     | X                        | inch                             |
|   |                          |                          | <input type="checkbox"/> Convex  |
|   |                          |                          | <input type="checkbox"/> Concave |
| <b>Test Conducted by:</b>                                 |                          | <b>Lab Test #:</b>       |                                  |

|                             |              |                   |        |                              |             |              |            |
|-----------------------------|--------------|-------------------|--------|------------------------------|-------------|--------------|------------|
| <b>Welding Verified by:</b> | Roger Hiller | <b>Fermi ID #</b> | 00362N | <b>Verification Report #</b> | 11142009-RH | <b>Date:</b> | 11/14/2009 |
|-----------------------------|--------------|-------------------|--------|------------------------------|-------------|--------------|------------|

|   |  |  |           |
|---|--|--|-----------|
| 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 ASME IX-2007 |  | <b>Fermi National Accelerator Laboratory</b> |           |
| <b>By:</b>  |  | <b>Date:</b>                                 | 1/10/2010 |