WELDING PROCEDURE SPECIFICATION (WPS)

Procedure No. IM-26  Rev. 5  Date 3/18/04  Supporting PQR IM-26

Code: ASME Section IX  AWS D1.1  AWS D1.6  AWS D1.2  OTHER

Welding Process: SMAW  FCAW  GMAW  GTAW  OTHER

Type: MANUAL  SEMI-AUTOMATIC  AUTOMATIC  MACHINE

Joint Design:
Type: Groove  Single  Double Weld  Root Opening: 1/16" - 3/8"  Root Face Dimension: 0 -.030
Groove Angle: 25° - 40°  Radius (J-U): N/A  Back Gouging: Yes  No  Method: 
Backing: Yes  No  Backing Material (Type): A36
Metal  Non-Fusing Metal  Non-Metallic  Other
Retainers: Yes  No  Metal  Non-Fusing Metal  Non-Metallic  Other

Position:
Position of Groove: 3G  Fillet: N/A  Vertical Progression: Up  Down

Base Metals:
Specification ASTM Grade: A36  ASME/ AWS P-No. 1  Group No. 1
Specification ASTM Grade: A36  ASME/ AWS P-No. 1  Group No. 1
Thickness Range: ASME Section IX: Groove 3/16 - 8"  Fillet Unlimited  Diameter Pipe: N/A
AWS D1.1: Groove 1/8" - Unlimited  Fillet Unlimited  Diameter Pipe: N/A

Filler Material:
AWS Specification (SFA): 5.20  AWS Classification: E71T-1  F No. 6  A No. 1
Size: 1/16  Type: Tubular  Consumable Insert: N/A
Weld Metal 'T' Range: ASME Section IX: Groove 3/16 - 8"  Fillet Unlimited  Diameter Pipe: N/A
AWS D1.1: Groove 1/8" - Unlimited  Fillet Unlimited  Diameter Pipe: N/A

Electrical Characteristics:
Transfer Mode (GMAW): Short-Circuiting  Globular  Spray
Current: AC  DCEP  DCEN  Pulsed
Electrode Diameter (Range): .035  180-220  18-22
.045  184-225  18-22
1/16  198-242  20-23
Tungsten Electrode (GTAW): Size: N/A  Type: N/A
Electrode Wire Feed Speed Range: 176 - 215 ipm

Shielding
Flux Trade Name: N/A  Gas(es): CO2
Electrode-Flux Class: N/A  Mixture(%): 100  Flow Rate
Gas Cup Size: N/A  Trailing: N/A  20 - 37 cfm
Backing: N/A

Preheat:
Preheat Temperature: Min 50°F
Interpass Temperature: Min 50°F  Max 350°F
Preheat Maintenance 50°F

Postweld Heat Treatment:
Initial Cleaning Method: Sand Blast / Grind
Interpass Cleaning: Chipping / Grinding / Brushing
Peeing: Not Allowed
Angle: N/A°  Other: N/A
Contact Tube to Work Distance: 1 - 1 1/2"  No weld pass shall exceed 1/2" in thickness

Technique:
Stringer or Weave Bead: Stringer
Multi-pass or Single Pass (per side): Multi-pass
Number of Electrodes: 1
Electrode Spacing: Longitudinal: Lateral: N/A
Oscillation: N/A
Travel Speed (range): 7.5-12.5 ipm

Welder Name Darrell Davis
Employee No. 0412

Authorized by Darrell Davis  Title QA Manager / CWI  Date 4/7/2004