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| **PIPE, MACHINERY AND PRESSURE VESSEL WELD RECORD**QA FORM 20C (WORK PLANNING TO FILL IN BLOCKS/EVALUATE BLOCK OPTIONSIDENTIFIED BY A ♦ PRIOR TO RELEASE) | Page | 1 | of | **\_\_\_\_** |
| **♦**1. SHIP **♦**HULL NO.  | **♦**2. JCN  | **♦**3. LWC/SHOP  | **♦**4. CWP/REC SER NO.  |
| **♦**5. SYSTEM/COMPONENT | **♦**6. FABRICATION STD:  278 250-1500-1 | **♦**7. WELD CLASS  | **♦**8. JT DESIGN | **♦**9. SSMAP/JT ID DWG & REV | **♦**10. JOINT NO.[ ]  MARK JNT |  |
| 11. PART  NO. 1 | **♦**DESCRIPTION  | **♦**SIZE (NPS) | **♦**SCHED/CLASS  |  PART NO. 2  | **♦**DESCRIPTION  | **♦**SIZE (NPS) | **♦**SCHED/CL. |
| **♦**DWG NO. & REV.  | **♦**PC. NO.  | **♦**MATL. | **♦**DWG NO. & REV. | **♦**PC. NO. | **♦**MATL. |
| INSTALLATION | 12. PART NO. 1 NEW | EXISTING EXST MATL MKS GEN MATL TEST MATERIAL MRKS/TEST RESULT:  | PART NO. 2NEW | EXISTING EXST MATL MKS GEN MATL TEST MATERIAL MRKS/TEST RESULT: |
| **NEW MATERIAL** (INCLUDING CONSUMABLE INSERTS, BACKING MATERIAL, ETC.) |
| 13. PART NO.  | 14. DESCRIPTION | 15. LEVEL I NO./OTHER TRACEABILITY NUMBER/ MATERIAL/SPECIFICATION MARKINGS  | 16. FITTER/INSPECTOR (Signature, Badge, Date) |
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| 17. PART  | WALL THICKNESS: | **♦**20. FITUP  | 21. VERIFICATION |
| **♦**18. REQD  | 19. ACTUAL  | PREWELDNDTCOMP | JOINT DESIGNINSTALLED  | FITUP: SAT | **FITUP AFTER TACK** **SAT****♦ NA**  | FITTER (Signature, Badge, Date) |
| NO. 1 | **♦**Nom:**♦** Min: | Min: |
|
| NO. 2 | **♦**Nom:**♦** Min: | Min: | **♦**NA  |  | INSPECTOR (250-1500-1 welds) (Signature, Badge, Date) |
| WELDING | 22. WELD PROC/REV/CH & TECH DATA SHEET   | 23. POSITIONHFP VFP OOP | 24. MIN PREHEATTEMP:MAX INTERBEAD/INTERPASS TEMP: | 25. FABRICATION LOCATION: SHOP/BLDG \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**SHIPBOARD**COMPT: FRAME LEVEL P C S |
| 26. LAYER(S)(T/R/I/F) | 27. FILLERTYPE | 28. FILLER SERIAL NO.(e. g., Level I No.) | 29. WELDER (Signature, Badge, Date) |
|  |  |  | SAT |  |
|  |  |  | SAT |  |
|  |  |  | SAT |  |
|  |  |  | SAT |  |
| **♦**30. STRESS RELIEF REQD  YES NO | 31. PROCEDURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEMPERATURE: DURATION HR MIN | 32. HEAT TREATER (Signature, Badge, Date) |
| 33. WELDING COMPLETE, SURFACE IS PREPPED AND READY FOR FINAL NDT, AND JOINT NUMBER IS PERMANENTLY MARKED NEAR JT IF “MARK JT” BOX IN BLOCK 10 IS CHECKED. | WELDER or FITTER (Signature, Badge, Date) |
| **WELD INSPECTIONS**: (I) = INTERMEDIATE, (F) = FINAL # = PREWELD INSPECTION (EXCAVATION, END-PREP, ETC.) ## = NUCLEAR ONLY |
| **♦**34. **ACCEPTANCE STANDARD**:  | **♦**CLASS |
| **♦**35. INSP  | **♦**36. INSPECTION TYPE | 37. PROCEDURE USED | 38. INSPECTOR (Signature, Badge, Date) |
| **♦**\_\_\_\_\_\_\_#NA | **♦**5X RTPT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**TACK ##NA  | **♦**VT 5X PT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**ROOTNA | **♦**VT 5X PT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**BKGOUGENA | **♦**5X PT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**PT/MT (I)NA | **♦**PT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**VT (F)NA | **♦**OUTSIDE (ALL VTs) INSIDE INACCESSIBLE  INSIDE PARTIAL INSIDE INSP |  | SATREJ |
| **♦**PT/MT (F)NA | **♦**24 HR. MTPT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | SATREJ |
| **♦**PT/MT-ID NA (F) | **♦**PT TYPE II-C MT EQPT NO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ INACCESSIBLE PARTIAL INSP DONE |  | SATREJ |
| **♦**RT (F) NA | **♦**8 HR.60 360 100%  |  | SATREJ |
| 39. **REMARKS (SHOP REMARKS ALSO)** |
| **FINAL****DISPOSITION** | 40. SUPERVISOR (Signature, Badge, Date) | 41. LOCAL GOVERNMENT INSP./QAS (Signature, Badge, Date) |
| **PIPE, MACHINERY AND PRESSURE VESSEL WELD RECORD - CONTINUATION SHEET**QA FORM 20C-1SHIP: DWG/JCN: JOINT NO.: PAGE OF |
| WELD HISTORY (CONTINUATION SHEET) T = TACK R= ROOT I = INTERMEDIATE LAYER F = FINAL  |
| 42. LAYERT/R/I/F | 43. FILLERTYPE | 44. FILLER SERIAL NO. (MIC NO.) | 45. WELD TEMPS DEG FPREHEAT INTERPASS  | 46. WELDER (SIGNATURE/DATE) |
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| WELD INSPECTIONS (CONTINUATION SHEET) I = INTERMEDIATE F= FINAL |
| 47. INSPECTION | 48. INSPECTION TYPE | 49. PROCEDURE USED | 50. INSPECTOR (SIGNATURE/DATE) |
|  |  |  | [ ] SAT[ ] REJ |
|  |  |  | [ ] SAT[ ] REJ |
|  |  |  | [ ] SAT[ ] REJ |
|  |  |  | [ ] SAT[ ] REJ |
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| 51. REMARKS |

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| **PIPE, MACHINERY AND PRESSURE VESSEL WELD RECORD – WELD DEFECT REPAIR SHEET**QA FORM 20C-2 SHIP: DWG/JCN: JOINT NO.: PAGE OF |
| 52. DEFECT DESCRIPTION |
| [ ]  CRACK | [ ]  INCOMP INSERT FUSION | [ ]  INCOMPLETE FUSION | [ ]  ARC STRIKE | [ ]  ROUNDED |
| [ ]  SLAG | [ ]  CRATER PIT | [ ]  BURN THRU | [ ]  WELD SPLATTER | [ ]  OTHER: (ENTER BELOW) |
| [ ]  POROSITY | [ ]  INTERNAL CONCAVITY | [ ]  MELT THRU | [ ]  ROOT EDGE FUSION COND |  |
| [ ]  UNDERCUT | [ ]  INTERNAL CONVEXITY | [ ]  TUNGSTEN | [ ]  LINEAR |  |
| [ ]  OXIDATION | [ ]  CENTERLINE CREASE | [ ]  INCOMPLETE PENETRATION | [ ]  LINEAR DISPOSED |  |
| 53. DEFECT LOCATION(S) AND EXTENT[ ]  SEE SKETCH IN REMARKS | 54. INSPECTOR (SIGNATURE/DATE) |
| **DEFECT REPAIR** |
| 55. TYPE OF REPAIR[ ]  GRIND ONLY[ ]  GRIND AND WELD[ ]  WELD ONLY[ ]  OTHER (SEE REMARKS) | 56. REPAIR LOCATION(S) AND EXTENT[ ]  SEE SKETCH IN REMARKS | 57. WELD PROC AND REV/CH[ ]  NA[ ]  SAME AS ORIGINAL | 58. EXCAV NDT REQUIRED[ ] Y (MARK REQD INSP BLK 65/66)[ ] N | 59. ROOT PASS INSP REQUIRED[ ] Y (MARK REQD INSP  BLK 65/66)[ ] N |
| 60. LAYERT/R/I/F | 61. FILLERTYPE | 62. FILLER SERIAL NO. (MIC NO.) | 63. PREHEAT/INTERPASS TEMP | 64. WELDER (SIGNATURE/DATE) |
|  |  |  | [ ]  SAT |  |
|  |  |  | [ ]  SAT |  |
|  |  |  | [ ]  SAT |  |
| **REPAIR INSPECTIONS** |
| REPAIR WELD REQUIRES THE SAME INSPECTIONS AS THE ORIGINAL WELD. CARRY OVER ALL REJECTED OR VOIDED INSPECTIONS FROM PAGE 1. |
| 65. INSPECTION | 66. INSPECTION TYPE | 67. PROCEDURE USED | 68. INSPECTOR (SIGNATURE/DATE) |
| [ ] EXCAV[ ] NA | [ ] 5X [ ] PT TYPE IIC [ ] MT/EQUIP NO.: |  | [ ] SAT[ ] REJ |
| [ ] ROOT[ ] NA | [ ]  VT [ ] 5X [ ] PT TYPE IIC [ ] MT/EQUIP NO.: |  | [ ] SAT[ ] REJ |
| [ ] BACKGOUGE[ ] NA | [ ] 5X [ ] PT TYPE IIC [ ] MT/EQUIP NO.: |  | [ ] SAT[ ] REJ |
| [ ] PT/MT ( I )[ ] NA | [ ] PT TYPE IIC[ ] MT/EQUIP NO.: |  | [ ] SAT[ ] REJ |
| [ ] VT (F)[ ] NA | [ ] OUTSIDE (ALL VTs) [ ] INSIDE INACCESSIBLE[ ] INSIDE [ ] PARTIAL INSIDE INSP |  | [ ] SAT[ ] REJ |
| [ ] PT/MT(F)[ ] NA | [ ] PT TYPE IIC[ ] 24 HOUR MT/EQUIP NO.: |  | [ ] SAT[ ] REJ |
| [ ] PT/MT – ID(F)[ ] NA | [ ] PT TYPE IIC [ ] MT/EQUIP NO.:[ ] INACCESSIBLE [ ] PARTIAL INSP DONE |  | [ ] SAT[ ] REJ |
| [ ] RT (F)[ ] NA | [ ] 8 HOUR[ ] 60 [ ] 360 [ ] 100% |  | [ ] SAT[ ] REJ |
| 69. REMARKS |