ASSOCIATION OF AMERICAN RAILROADS

K.B. Dorsey
Executive Director - Tank Car Safety

11/10/2017

SUBJECT: AAR M-1002 Tank Car Facility Certification

Mr. Peter Staveley
Director of Quality
Fort Vale Engineering Ltd
Calder Vale Park Simon Stone
Simon Stone, Lancashire BB12 7ND UK

Dear Mr. Staveley:

The Tank Car Committee directs that you be advised that subject facility is certified as shown below, provided that the facility maintains valid Quality Assurance certification in accord with AAR Specification M-1003 and provided that all outshopped tank cars are in accord with the Federal regulations and M-1002, Specification for Tank Cars. This facility must have the ability to produce this letter upon request.

This certification is only for the facility listed below:

Fort Vale Engineering Ltd
Calder Vale Park Simon Stone
Simon Stone, Lancashire BB12 7ND UK
Station Stencil: FVEK
Expiration Date: 7/11/2023
Activity Code(s): C4 C5
Repair Level (if applicable):
Material Group(s)(if applicable):

The AAR will periodically publish listings of certified facilities. The listing will include the following: Company name, facility location, station stencil, facility activity code(s), material group(s), repair level (if applicable), and expiration date of certification.

Very truly yours,

K.B. Dorsey

cc: D. Guillen, M. Forister

425 Third Street SW, Suite 1000 I Washington, DC 20024 I P (202) 639-2262 I F (202) 639-2930 I KDorsey@aar.org

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

An inspector (individual or team) assigned by the Executive Director – Tank Car Safety representing the Tank Car Committee will use this form to document the inspection performed during initial certification, recertification, annual evaluation, or other evaluations required to obtain and maintain M-1002 tank car facility certification. This form will be used as the basis for recommending approval of an application for certification and recertification or continuance of certification in accordance with AAR Manual of Standards and Recommended Practices, Section C Part III, Specifications for Tank Cars (M-1002). The M-1002 tank car facility certification program meets the prescribed provisions outlined under 49 CFR §179.7(b)(8). Comments, if applicable, are required to be written in each applicable section.

PART 1: GENERAL INFORMATION

1. ☒ Initial Certification Inspection ☐ Recertification Inspection ☐ Annual Evaluation ☐ Other (See Comments)

2. Date Exhibit B-3 and B-3A were Submitted (MM/DD/YYYY): 2/23/2017

3. Is the facility an existing AAR Registered Tank Car Facility? ☒ YES ☐ NO

If "YES", What is the facility's Station Stencil: FVE

Comments: Fort Vale Engineering is Registered Class F Facility; expires 10/28/2019

PART 2: TANK CAR FACILITY INFORMATION

4. Company Name: Fort Vale Engineering Ltd.		
5. Address: Calder Vale Park Simon stone		
6. City: Simon stone	**7.** State/Province: Lancashire	**8.** Zip/Postal Code: BB12 7ND
9. Country: UK		
10. Station Stencil/QA Code: FVEK		
11. M-1002 Expiration Date: Initial Certification		
12. M-1003 Expiration Date: Initial Certification		
13. S-2034 Expiration Date (applicable only to A19 and/or B78): NA		

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 3: PRIMARY CONTACT AT FACILITY		
14. Name: Peter Staveley	**15.** Title: Director of Quality	
16. Office Phone: 0044 1282-687108	**17.** Cell Phone: 0044-7802 876251	**18.** Fax: 0044-1282 687197
19. Email Address: pstaveley@fortvale.com		

PART 4: APPLICANT (AS IDENTIFIED ON THE B-3)		
20. Is the applicant the primary contact at the facility? ☒ YES ☐ NO (IF YES, Skip this Section)		
21. Company Name:		
22. Name:	**23.** Title:	
24. Address:		
25. City:	**26.** State/Province:	**27.** Zip/Postal Code:
28. Country:		
29. Office Phone:	**30.** Cell Phone:	**31.** Fax:
32. Email Address:		

PART 5: RECIPIENT(S) OF CERTIFICATION FROM AAR
33. Select the Recipient(s): ☐ Applicant (Part 4) ☒ Primary Contact (Part 3) (NOTE: This facility must have the ability to produce the certification letter upon request.)

PART 6: INSPECTOR INFORMATION
34. Name(s) and Title: R.G. Ashton BOE General Manager
35. Organization(s): AAR-BOE

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

Comments:

PART 7: INSPECTOR RECOMMENDATION

36. Inspection Date (MM/DD/YYYY): 07/11/2017 - 07/13/2017

37. Has the facility changed scope of work since the last inspection: ☐ YES ☒ NO IF "YES", Complete the following:

a. Did they submit an Exhibit B-3 Change Notification Form to the Executive Director: ☐ YES ☐ NO

Include with this B-2 report a copy of the Exhibit B-3 Change Notification Form.

b. Describe in the "Comments" section the change in scope of work, which includes any changes to tank car activity codes, repair level capability, and/or material group(s).

38. Was the equipment, personnel, and records found to be as listed in the request for initial certification, recertification, or change notification (B-3 and B-3A)? ☒ YES ☐ NO If "NO", explain why under "Comments"

39. Recommend Certification for the following Tank Car Activity Code(s):

☐ A19 Manufacturer of tank cars ☐ B24 Repair of tank cars ☐ B78 Assemble of tank cars

☐ B79 Alteration of tank cars ☐ B80 Conversion of tank cars ☐ B81 Qualification of tank cars

☐ B82 Manufacture of tank car tanks, including support structure, that are moved to and from the facility without trucks (running gear)

☐ B83 Repair tank car tanks that are moved to and from the facility without trucks (running gear)

☐ B84 Qualification of tank car tanks that are moved to and from the facility without trucks (running gear)

☐ B85 Manufacturer of pressure-retaining tank components that are moved to and from the facility without trucks (running gear)

☐ B86 Repair of pressure-retaining tank components that are moved to and from the facility without trucks (running gear)

☒ C4 Manufacturer of tank car service equipment

☒ C5 Reconditioner/repair and qualification of tank car service equipment

☐ C6 Removal and replacement of tank car service equipment (including changing of gaskets)

☐ C7 Removal of interior linings and coatings in tank cars

☐ C8 Installation of interior linings and coatings in tank cars

☐ C9 Qualification of interior linings and coatings in tank cars

☐ C10 Repair of interior linings and coatings in tank cars

☐ C11 Inspection of interior linings and coatings in tank cars

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

40. Recommend Certification for the following material groups (only applicable to tank car tank welding):

☐ MG 1 ☐ TC-128 Included ☐ MG 2 ☐ MG 3 ☐ MG 4 ☐ MG 7

41. Recommend Certification for the following Repair Level Capability (applicable only to B24 and/or B83):

☐ RL1 ☐ RL2

42. Signature of Inspector: R.G. Ashton

Comments: AUDITORS' RECOMMENDATIONS:

FORT VALE ENGINEERING LTD. IS READY FOR GRANTING INITIAL CERTIFICATION FOR ACTIVITY CODES C4 AND C5, THE TECHNICAL DEFICIENCY IDENTIFIED (TIDR FVEK-07117-C-01) DURING THIS AUDIT WAS SATISFACTORILY RESPONDED BY FACILITY AND SUBSEQUENTLY ACCEPTED BY THE AUDITOR.

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 8: PUBLICATIONS			
Items	**Does the facility have the publication?**	**Technical Deficiency**	**Comments**
43. AAR MSRP, Section C, Standard S-2034	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
44. AAR MSRP, Section C Part II, Design, Fabrication, and Construction of Freight Cars, (M-1001)	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
45. AAR MSRP, Section C Part III, Specifications for Tank Cars (M-1002)	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
46. AAR MSRP, Section J, Specifications for Quality Assurance, (M-1003)	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
47. Field Manual of the AAR Interchange Rules	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
48. Office Manual of the AAR Interchange Rules	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
49. Other Publications required by Rule 1.5.b, of the AAR Field Manual of the Interchange Rules	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
50. AAR Circular and Casualty Prevention Circular Letters	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
51. Title 49 Code of Federal Regulations, Parts 171-180	☒ YES ☐ NO	☐ YES ☒ NO	☐ YES
52. Title 49 Code of Federal Regulations, Parts 215, 231	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
53. Transportation Dangerous Goods (TDG) Regulations	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
54. Transport Canada TP14877E	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
Comments:			

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 9: DOCUMENTATION

Items	AAR M-1002 or Title 49 CFR Reference	Document Evaluation	Technical Deficiency	Comments
55. Are Certificates of Construction Form AAR 4-2 properly prepared and filed?	Chapter 1	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
56. Are records of service equipment approvals (AAR Forms 4-3, 4-5, and/or 4-7) current and maintained?	Chapter 1	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
57. Are Exhibit R-1 or R-2 reports properly prepared and filed using the Tank Car Integrated Database (TCID)? If facility is not using TCID, Explain in "Comments:" how the facility is documenting repairs.	Appendix R	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
58. Are reports of tank car, pressure relief valve and/or interior heater system inspections and tests prepared and retained, and reported to the tank car owner?	Appendix D, paragraph 5.0	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
59. Are reports of NDT tests documented for each method used, and are records maintained?	Appendix T, paragraphs 1.20 and 1.21	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
60. If stub sill inspections are performed, are Form SS-3 reports properly prepared and submitted using the Tank Car Integrated Database (TCID)? If facility is not using TCID, Explain in "Comments:" how is the facility documenting stub sill inspections.	Appendix R	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
61. Are Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs), on file for the Material Groups requested?	Appendix W, paragraph 12.0	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

62. Are Exhibit B-1, "Subcontractor Evaluation Sheet", completed, maintained, and are valid? Objective evidence must be provided: either provide an attachment or list in the comment section each subcontractor on the B-1's and the expiration date.	Appendix B, paragraph 2.7, Chapter 1, paragraph 1.6	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
63. For tank car tank plate materials, are mill tests reports available and in compliance with Appendix M specifications?	Chapter 5, Appendix M	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
64. Does the facility have available for review their current M-1002 certification letter and M-1003 certificate? (If NO, explain in comments)	Appendix B	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES

Comments:

56)

a. AAR Approval No. PRD139512 (09/26/2013), Pressure Relief Valve.

b. AAR Approval No. E139513 (09/23/2013), Vacuum Relief Valve.

c. Engineering drawings; available, reviewed, and in use.

59)

NDT Tests Records are documented and maintained for methods; (BT), (PT) and (VT).

62)

a. NDT Level III Services: Institution of Mechanical Engineers, Exhibit B-1, Expires 4/3/2018.

b. NDT Level III Services: iNDT Resources, Exhibit B1, Expires 5/1/2018

64)

M-1002 and M-1003; Initial Certifications.

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 10: FACILITIES					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
65. Are tank car tank materials physically identified and traceable to a mill test report on file with the facility?	Chapter 5, paragraph 5.1.4	☐ YES ☒ NO	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
66. If the facility performs hydrostatic testing, are gauges in compliance, and calibrated, as required?	Appendix D, paragraphs 4.5.1 and 4.5.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
67. Does the facility have the equipment on its premises in operating condition and calibrated to perform all activities they are seeking/maintaining certification for, as required?	Appendix B	☒ YES ☐ NO	N/A	☐ YES ☒ NO	☒ YES
68. Is there proper storage for service equipment, valves and fittings, gaskets, and fasteners?	Manufacturer Guidance/Facility Procedures	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
69. Are all mobile units physically present at the time of M-1003 QA audits and M-1002 inspections?	Appendix B, paragraph 3.4	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
70. If the facility has mobile units does the facility have objective evidence that they operate under the certified facility's M-1003 Quality Assurance Program? Provide a list of all mobile units and their Commodity Code capabilities in Comments.	Appendix B, paragraph 3.4	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Comments:

67)
Observation: At the time of the audit; facility employed appropriate process equipment in a suitable working environment.

68)
Observation: Service Equipment Components i.e. fasteners, gaskets and seals are adequately stored and available.

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 11: WORK IN PROGRESS					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
71. For the activity codes that the facility has requested or is certified to perform, was any work-in-progress observed and/or applicable files reviewed (i.e. manufacturing, repair, qualification/testing, etc.)? If "Yes", provide details under "Comments"	N/A	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO	☒ YES

Comments:

71) WORK IN PROCESS; OBSERVATIONS:
1. Pressure Relief Valve (AAR Approval No. PRD 139512, 09/26/2013).
2. Vacuum Relief Valve (AAR Approval No. E139513 (09/23/2013).

PEOPLE:
a. Assemblers and workers performing leak testing were currently certified in accordance with company written practice.

EQUIPMENT AND MATERIALS:

a. Test Bench with associated test gaskets and seals in excellent condition; (equipment preventive maintenance current).

b. Pressurizing Equipment; industrial gas cylinders (nitrogen) to pressurize valve for testing, in use, maintained and good working condition.

c. Potable water, contamination free for valve seat bubble testing to determine start to discharge pressure and vapor tight pressure.

d. Pressure Gages (4"dia. Min.), graduations are not more than four (4) times the test pressure; (calibration current).

MEASURING AND EQUIPMENT:
a. Pressures gages are calibrated on 6 month interval (calibration current).
b. Light intensity meters and temperature gages are calibrated annually (calibration current).

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PERFORMED DIMENSIONAL CHECKS ON RANDAMLY SELECTED VALVE PARTS IN PROCESS:
a. Valve Body Tube; dimensions checked (8)
b. Body Assembly; dimensions checked (22)
c. Inner Pressure Plate; dimensions checked (18)

All (48) dimensions were within acceptable tolerances.

TEST METHODS REVIEWED AND VARIFIED:

A. Inspection Techniques; Procedure IP8.2/28 available and in use by operator (document current).
Appendix A; Automatic Testing Equipment
Appendix B; Manual Testing
Appendix C; MK3 Super Maxi High Flow Manual Testing Equipment
b. Procedure Qualifications including sensitivity and reliability (reviewed) see (TIDR FVEK-07117-C-01)
c. Test Reports
d. Pressure and medium used
e. Hold and soak time
f. Leak detector used
g. Pressure and temperature gauges used
h. Tracer gases used

ENVIORNMENT:

The plant was climate controlled with overhead lighting at each work station.

Temperature constraints; surface temperature of the valves tested were within the temperature range of the leak solution.

RESPORTING AND MARKINGS REVIEWED AND VARIFIED:

a. AAR station stencil tag applied to valves.

b. Test documents provided to owners (policy and procedure in place).

c. Procedure available and in use

d. Examiner I.D.

e. Date Tested.

f. Facility responsible for test.

g. NDT Method.

h. NDT Equipment used traceable.

i. Test Medium used.

j. Leak detector used.

k. Temperature measuring device used.

l. Examination results (STD and VTP).

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 12: NONDESTRUCTIVE EXAMINATION					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
72. Based on their activity codes, does the facility have available one person qualified and certified in accordance with the company's written practice, for each applicable method employed? If subcontracted, provide the name and expiration date of the NDE technician identified from the B-1.	Appendix B, paragraph 2.6.2.1, 2.6.2.2, Appendix L; Appendix T	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
73. Is the facility's NDT program administered by an NDT Level III? In the comment section provide the name of NDT Level III and date of expiration for each method.	Appendix T, paragraph 1.4.1	N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
74. Are the qualification requirements for the NDT Level III included in the written practice for qualification and certification?	Appendix T, paragraph 1.8.4	N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☐ YES
75. Are the NDT personnel employed by this facility qualified and certified in accordance with a written practice? If subcontracted, identify in the comments the subcontractor and the expiration date identified from the B-1.	Appendix T, paragraph 1.5, and paragraphs 1.6 through 1.17	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
76. Does the facility have written procedures, approved by an NDT Level III, for the NDT methods utilized?	Appendix T, paragraph 1.18.1	N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

77. Have all NDT procedures been qualified and technically approved by an NDT Level III? NOTE: Example of NDT PQR is under Appendix T, Fig. T.1	Appendix T, paragraph 1.19.1	N/A	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO	☒ YES
78. Are all NDT equipment calibrated as required per AAR MSRP Section J (M-1003) and with the company's QA calibration requirements?	Appendix T, paragraph 1.22	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
79. For NDT examinations (RT, PT, MT and UT), are the acceptance criteria and personnel qualification requirements being met?	Appendix W, paragraph 10.0	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
80. Were any NDT examinations observed; and/or applicable reports or records reviewed during this inspection?; If "Yes", provide details under "Comments"	N/A	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
81. Is the technical performance of Level I and II NDT personnel periodically evaluated and documented by an NDT Level III?	Appendix T, paragraph 1.10.2	N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☐ YES
82. Are written procedures (such as work instructions, welding/NDT procedures, etc.), provided to employees, or otherwise available at the work site, to ensure that work on tank cars conforms to M-1002 specification, AAR approval, and the owner's acceptance criteria?	49 CFR §179.7(d)	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
83. Are the NDT visual examination requirements being met?	Appendix T, paragraph 1.8.3	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

Comments: 72)

Steven Brierley; NDT Level II (VT), Expires 06/09/2020.

Roy Fielding; NDT Level II (PT), Expires 06/12/2020.

David Fothergill; NDT Level (II), Expires 06/14/2020.

73)

a. NDT Level III, David Griffin (Institution of Mechanical Engineers) ASNT 72824; (PT), (VT), Expires 11/22.

b. NDT Level III, Roger Walters (iNDT Resources) ASNT 13710; (PT), (VT), (LT), Expires 12/17.

75) See 72)

77) See (TIDR FVEK-07117-C-01)

78)
a. Pressures gages are calibrated on 6 month interval (calibration current).
b. Light intensity meters and temperature gages are calibrated annually (calibration current).

79)
NDT Procedures are current and approved by NDT Level III.
a. Steven Brierley; NDT Level II (VT), Expires 06/09/2020.
b. Roy Fielding; NDT Level II (PT), Expires 06/12/2020.
c. David Fothergill; NDT Level (II), Expires 06/14/2020.

80)

a. Reviewed completed documentation; Bench Leak Test Report; Pressure Relief Valve, Model No. SUPAFLO, P/N 0R4, S/N3, test date 04/06/2017 by Burnley.

b. Reviewed in-complete documented records of valves in process in various stages: Thirty (30) Pressure Relief Valves, Model No's. SUPAFLO, P/N's 0R4 in process.

82)

Work Level Instructions, work orders and instructions are displayed conspicuously in working areas.

83)

NDT technicians qualificatinrecords reviewed and variefied.

PART 13: WELDING PRACTICES					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
84. Based on their activity codes, are all welding, fabrication and construction processes being performed by the facility in accordance with Appendix W?	Appendix W	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
85. Does the facility's quality control program include as a minimum the following? • The designated authority for the administration of the welding quality control program. • A description of the administration and technical supervision for all welders. • A description of the exclusive authority to assign and remove welders without involvement of any other organization. • A requirement for assigning welder identification symbols	Appendix W, paragraph 9.2.3.4	N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
86. If postweld heat treatment is required	Appendix R,	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☒	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

after welding, are the applicable requirements of Appendix R and Appendix W being met?	paragraph 19.0 and Appendix W, paragraph 16.0	☒ N/A	☒ N/A	NO	
87. Are welders and/or welding operators engaged in welding on tank car tanks tested, trained, and performance qualified?, as required by Appendix B, paragraph 2.6.1.1, in accordance with Appendix W, paragraph 11.0?	Appendix B, paragraph 2.6.1.1 and Appendix W, paragraph 11.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
88. Are welders not engaged in welding on the tank car tanks trained and qualified per AAR MSRP, Section C Part II M-1001 (AWS D.15.1)?	Appendix B, paragraph 2.6.1.2	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
89. Are welders and welding operators assigned an identification number, letter, or symbol; and were welds / records observed with properly identified and traceable.	Appendix W, paragraph 9.4 and 14.8	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
90. Are the welder visual acuity requirements being met?	Appendix W, paragraph 14.2.1	N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
91. If a welder's qualification(s) expired, or there is reason to question their ability, does the facility have procedures for the renewal of welder performance qualification procedures?	Appendix W, paragraph 11.8	N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
92. Are flux and/or rod ovens in use to support the operations?		☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
93. Are low hydrogen electrodes (rods) handled in accordance with Appendix W?	Appendix W, paragraph 14.12	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
94. If the facility is currently certified or seeks certification to repair level "RL1" does the facility Demonstrate	Appendix B, paragraph 2.3.6 and 2.3.8 or 2.3.10	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

proficiency in performing welding to tank car tank material, NDT method MT or PT, and postweld heat treatment? This level excludes repairing a through the tank car tank defect (insert or through the shell/head crack). This demonstration must be performed on a tank car tank or test plate and must be performed on a material from a material group for which the facility seeks certification. Attach pictures of the demonstration with the B-2. The following pictures must be provided, at a minimum: set-up, weld, NDT method, and postweld heat treatment pad.					
95. If the facility is currently certified or seeks certification to repair level "RL2" does the facility Demonstrate proficiency in performing welding to tank car tank material, NDT, and postweld heat treatment? This level includes repairing a through the tank car tank defect (insert or through the shell/head crack). This demonstration must be performed on a tank car tank or test plate and must be performed on a material from a material group for which the facility seeks certification. Attach pictures of the demonstration with the B-2. The following pictures must be provided, at a minimum: set-up, weld, NDT method, and postweld heat treatment pad.	Appendix B, paragraph 2.3.7 and 2.3.9 or 2.3.11	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

Comments: 88)
OBSERVED AND VARIFIED:
Functional Welding is limited at this facility; welders, welding procedures and acceptance critiria are in accordance with ASME Section IX Performance and Procedure Qualifcations.

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 14: MANUFACTURING AND REPAIR PRACTICES					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
96. Do tank car materials (plate, studs, bolts and nuts, etc.) comply with the specifications for materials contained in Appendix M? Provide a description under comments of what was observed.	Appendix M	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
97. Are repairs and alterations to, or conversions of, tank car tanks performed in accordance with Appendix R? Provide a description under comments of what was observed.	Appendix R	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
98. Is a hardness test performed after a butt-welded repair on a pressure car tanks that are constructed of Table M.10.1 materials?	Appendix R, paragraph 8.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
Comments:					

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

PART 15: SERVICE EQUIPMENT PRACTICES					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
99. If tank car valves and fittings are manufactured, are the approval and service trial requirements contained in Chapter 1 complied with? Provide the AAR approval number in the "Comment" section for valves and fittings being manufactured.	Chapter 1	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
100. If tank car valves and fittings are manufactured, are the specifications for materials (including threaded fasteners and castings), and the design and application requirements complied with?	Appendix A, paragraph 2.0 and 3.0, and Appendix M, paragraph 4.0	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
101. If pressure relief devices are manufactured, are flow capacity tests performed as required?	Appendix A, paragraph 5.0	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
102. If manufactured or reconditioned, are pressure relief valves, rupture disc devices, frangible discs, liquid and vapor valves, and liquid level control and gauging devices marked in accordance with Appendix A?	Appendix A, paragraph 6.0	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES
103. If the facility performs pressure relief valve, tank and/or interior heater systems testing are gauges in compliance, and calibrated?	Appendix D, paragraphs 4.5.1 and 4.5.2	☒ YES ☐ NO ☐ N/A	☒ YES ☐ NO ☐ N/A	☐ YES ☒ NO	☒ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

104. If the facility installs a valve or fitting on a tank car, does the facility meet the traceability requirements? Provide a description under comments of what was observed and whether this is accomplished through physical means or electronically tied to the serial number of the valve/fitting.	Appendix A paragraph 3.3.8.5?	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
105. If tank car service equipment is qualified, are the applicable stenciling requirements complied with?	Appendix C, paragraph 2.3.3.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
106. Are the maintenance, qualification and test procedures for pressure relief devices in accordance with Appendix D?	Appendix D, paragraphs 3.2.1 and 4.0, (particularly paragraph 4.3, Step 5 regarding inspection of PRVs per the manufacturer's guidelines)	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
107. Are stock pressure relief valves that are not installed and protected from deterioration being retested after 6 months?	Appendix D, paragraph 5.2, line item 11	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
108. If an item of tank car service equipment has been removed, replaced, and/or re-installed, is a leak test performed after reassembly?	49 CFR, §180.509(c)(3) and (j)	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Comments: 99)

a. AAR Form 4-6 Final Product Test Inspection Report No. PRD139512; Service Trial No. ST-445, Approved 12/02/2016.
b. AAR Form 4-6 Final Product Test Inspection Report No. E139513; Service Trial No. ST-446, Approved 12/02/2016.

100)
Performed a cross-check on the BOM to varify threaded fasteners and castings are in compliance with appendix M.

101), 102), 103),
Oberved test performed see 71).

PART 16: INSPECTIONS AND TESTS PRACTICES

Items	AAR M-1002 or Title 49 CFR Reference	Technical Observation	Document Evaluation	Technical Deficiency	Comments
109. If this facility manufactures tank car tanks, are tanks and/or interior heater systems hydrostatic tested and perform in accordance with the outlined procedures?	49 CFR §§179.12(b), 179.100-18 and/or 179.200-22, and Appendix D, paragraph 4.2.1	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
110. Are qualification and maintenance requirements complied with?	49 CFR §§180.509 and 180.511, and the additional AAR requirements contained in Appendix D, paragraphs 2.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
111. Are pressure relief valve gaskets or gasket seals made of elastomeric materials, normally exposed to the lading, replaced when the device is tested?	Appendix D, paragraph 3.4	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

112. At the time of service equipment qualification, do tank cars equipped with bottom outlets have the outlet caps and nozzles inspected for wear?	Appendix D, paragraph 3.6	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
113. Are the hydrostatic test procedures contained in Appendix D complied with?	Appendix D, paragraph 4.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
114. At each tank qualification, are manways on nonpressure cars inspected, maintained and tested?	Appendix D, paragraph 6.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
115. Does the facility use a calibrated GO/NO-GO gauge per ANSI/ASME B1.2, Table 1, or an equivalent calibrated gauge to gauge the major diameter of external eyebolt threads over the nut clamping surface?	Appendix D, paragraph 6.4.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
116. Does the facility inspect manway nozzles for gouges, nicks, and other defects?	Appendix D, paragraph 6.3.1	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
Comments:					

PART 17: MARKING, STENCILING, AND PAINTING PRACTICES					
Items	**AAR M-1002 or Title 49 CFR Reference**	**Technical Observation**	**Document Evaluation**	**Technical Deficiency**	**Comments**
117. Are tank cars marked, including stenciling and stamping, in accordance with Appendix C and the	Appendix C, AAR MSRP Section L,	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

general requirements of the AAR Manual of Standards and Recommended Practices, Section L, Standard S-910?	Standard S-910				
118. If tank car tanks are manufactured or converted, are they properly stamped, and/or have identification plates applied?	49 CFR §§179.100-20(a) or 179.200-24(a), Appendix C, paragraph 3.0, and 49 CFR §179.24	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
119. For insulated carbon steel tank cars, is a protective coating applied to the exterior of the tank and the inside surface of a carbon steel jacket?	Chapter 2, paragraph 2.2.10 and 49 CFR §§179.100-4(a) or 179.200-4(a)	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
120. If repairs require the complete removal of the tank car jacket, is a protective coating applied to the exterior of the shell and the interior of the jacket?	Chapter 2, paragraph 2.2.10 and 49 CFR §180.513(c)	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
Comments:					

PART 18: LINING AND COATING PRACTICES

Items	AAR M-1002 or Title 49 CFR Reference	Technical Observation	Document Evaluation	Technical Deficiency	Comments
121. Unless approved, in writing, by the contracting authority, are all valves and fittings removed when stripping or applying an interior lining or protective coating? IF approved, in	Appendix L, paragraph 2.2.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

writing provide objective evidence with the B-2 as an attachment.					
122. Are the methods prescribed by Appendix L, used for cleaning, application or stripping of linings or coatings? If YES, provide which method(s) in the comment section.	Appendix L, paragraph 2.3	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
123. For activities regulated by 49 CFR Part 180: does the facility have available a qualified coatings inspector?	Appendix L, paragraph 3.1	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
124. For activities regulated by 49 CFR Part 180: are the interior surfaces of tank cars prepared by trained and qualified personnel?	Appendix L, paragraph 3.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
125. For activities regulated by 49 CFR Part 180: are interior coatings and/or linings applied in accordance with the material manufacturer's application procedure and/or the contracting authority's requirements by qualified personnel?	Appendix L, paragraph 3.3	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
126. For activities regulated by 49 CFR Part 180: does the facility follow the inspection and test procedure (including acceptance requirements) established by the coating or lining owner?	49 CFR, §180.509(i),	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
127. Are the requirements of Appendix L, regarding valves and fittings being met?	Appendix L, paragraph 4.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

128. Are the compliance requirements of Appendix L and inspection and test plan being met?	Appendix L, paragraph 5.0 and 49 CFR, §180.509	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
129. Are the application/removal reports prepared, retained and furnished to the car owner?	Appendix L, paragraph 6.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
130. Are the requirements pertaining to coatings and linings applied for corrosive service being met?	Appendix L, paragraph 7.0	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
131. Are the coating/lining qualification stenciling requirements being complied with?	Appendix C, paragraph 2.3.3.3	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
132. If the facility removes and/or replaces tank car service equipment or replaces gaskets (other than non-pressure hinged manway, fill hole or bottom outlet cap gaskets), does the facility obtain and maintain activity code C6?	Appendix L, paragraph 9.2	☐ YES ☐ NO ☒ N/A	☐ YES ☐ NO ☒ N/A	☐ YES ☒ NO	☐ YES
Comments:					

PART 19: 49 CFR HAZARDOUS MATERIALS REGULATION REQUIREMENTS **(THE FOLLOWING ITEMS ARE NOT REQUIRED FOR CERTIFICATION; HOWEVER THEY ARE BEING FURNISHED AS INFORMATION TO FACILITIES PERFORMING TANK CAR ACTIVITIES.)**
Items
133. If tank cars containing the residue of a hazardous material are offered for transportation, are shipping papers prepared in

accordance with 49 CFR Subparts C and G, Part 172?
134. If tank cars containing the residue of a hazardous material are offered for transportation, are they marked and/or placarded in accordance with 49 CFR Subparts D and F, Part 172?
135. Personnel meeting the definition of a "hazmat employee" in 49 CFR §171.8, must be trained, tested and certified as prescribed by 49 CFR Subpart H, Part 172, including General Awareness or Familiarization; Function-Specific; Safety; and, Security Awareness training. Is the facility aware of these requirements?
136. As prescribed by 49 CFR §179.7(e), tank car facility personnel must be trained, tested and certified regarding the facility's Quality Assurance program and procedures in accordance with Subpart H, Part 172. Is the facility aware of these requirements?
137. If applicable to the facility's operations, a transportation Security Plan must be developed and implemented as prescribed by 49 CFR Subpart I, Part 172, and, "hazmat employees" must receive in-depth Security Training as required by 49 CFR §172.704(a)(5),. Is the facility aware of these requirements?
138. Per 49 CFR §180.513(b), Responsibilities of Tank Car Facility; A tank car facility must obtain the permission of the equipment owner before performing work affecting alteration, conversion, repair, or qualification of the owner's equipment per 49 CFR §180.513(b)

PART 20: TDG REGULATIONS AND TRANSPORT CANADA TP14877E STANDARD REQUIREMENTS **(THE FOLLOWING ITEMS ARE NOT REQUIRED FOR CERTIFICATION; HOWEVER THEY ARE BEING FURNISHED AS INFORMATION TO FACILITIES PERFORMING TANK CAR ACTIVITIES IN CANADA.)**
Items
139. Has the facility registered in accord with Transport Canada TP14877E, section 6.1?
140. If tank cars containing the residue of dangerous goods are offered for transportation, are shipping papers prepared in accordance with Part 3 of the TDG Regulations
141. If tank cars contain the residue of dangerous goods, are they marked and/or placarded in accordance with Part 4 of the TDG Regulations?
142. If tank cars are cleaned and purged of dangerous goods, are identification numbers, commodity names, hazard warnings, placards, etc., removed or covered for compliance with Part 4 of the TDG Regulations?

Exhibit B-2: TANK CAR FACILITY INSPECTION AND EVALUATION FORM

143. Have personnel received transportation of dangerous goods training as required by Part 6 of the TDG Regulations?
144. Have personnel received Quality Management System training in accord with Transport Canada TP14877E, section 5?