

**APPENDIX B
CERTIFICATION OF TANK CAR FACILITIES**

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1.0 INTRODUCTION

For the safe, efficient, and uniform interchange of rail equipment in North America, *tank car facilities* must comply with all applicable AAR specifications, standards, recommended practices, and interchange rules.

Additionally, the AAR Tank Car Committee has been delegated by the DOT under Title 49 CFR Subchapter C, Part 179, Subpart A, Section 179.7 to approve the quality assurance program of each *tank car facility* and ensure that the requirements of §179.7 are met.

1.1 Scope

This appendix establishes, for each *tank car facility*, the requirement to obtain and maintain *certification* to the AAR M-1003 Quality Assurance Program, the AAR M-1002 technical *approval* requirements for each *activity*, and the administrative provisions pertaining to *certification*.

For *activities* outside the scope of this appendix, facilities should refer to *MSRP-J*, Specification M-1003, Appendix A, to determine if the *activity* requires additional *certification*.

1.2 Objective

The objective of this appendix is to specify the technical requirements that must be met for AAR *certification* of a *tank car facility*. This is accomplished through evaluation by an AAR *audit* agency of the effective implementation and integration of the *activity* within the *tank car facility* quality assurance program.

1.3 Definitions and Context Meanings

When terms or abbreviations are used in this appendix and are printed in italics, they shall have the meanings stated in Chapter 1.

Unless otherwise specified, chapters and appendices referenced herein are those of Specification M-1002.

2.0 M-1003 QUALITY ASSURANCE PROGRAM REQUIREMENT

Each *tank car facility* must establish and effectively implement a quality assurance program per AAR *MSRP-J*, Specification M-1003.

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3.0 M-1002 TECHNICAL APPROVAL REQUIREMENTS

3.1 Certification Elements

Table B.1 lists the elements that govern the *certification* of a *tank car facility* by the applicable *activity code(s)*, *material group(s)*, *repair level(s)*, and *service equipment* category. Populated cells indicate required elements that must be obtained and maintained in order to be certified to the *activity* listed; blank cells indicate not applicable.

Table B.1 Certification elements for tank car facilities (page 1 of 2)

Activity code	Activity	Technical Approval Dependencies	Material Group Required	Repair Level Required	Service Equipment Category Required
A19	<i>Construction of Tank Cars by Manufacturing</i>	S-2034 ^{a/} , B81, C6i	See paragraph 3.1.2		
B24	<i>Maintenance and Modification of Tank Car Tanks</i>	B81, B25 ^{b/}	See paragraph 3.1.2	RL1 or RL2	
B78	<i>Construction of Tank Cars by Assembly</i>	S-2034 ^{a/} , B81, C6i			
B81	<i>Qualification of Tank Car Tanks</i>	A19, B24, B78 and/or B82			
B82	<i>Manufacture Tank Car Tanks</i>	B81	See paragraph 3.1.2		
B85	<i>Manufacture Tank Car Tank Components</i>		See paragraph 3.1.2		
B87	<i>Maintenance and Qualification of Fuel Tanks for Locomotive Fuel Tenders</i>		See paragraph 3.1.2		
B88	<i>Maintenance and Qualification of Tank Car Stub Sills</i>			RLS	
B89	<i>Maintenance and Qualification of Safety Systems</i>				
C4a	<i>Assemble and Qualification of Tank Car Service Equipment</i>				See paragraph 3.1.4
C4m	<i>Manufacture and Qualification of Tank Car Service Equipment</i>				See paragraph 3.1.4
C5	<i>Maintenance and Qualification of Tank Car Service Equipment</i>				See paragraph 3.1.4
C6i	<i>Install Tank Car Service Equipment, Including Leakage Test</i>	A19 and B78			
C6r	<i>Remove and Replace Tank Car Service Equipment, Including Gaskets, Leakage Test, and Modifications</i>				
C7	<i>Removal of Interior Linings and Interior Coatings in Tank Cars</i>				
C8	<i>Installation and Qualification of Interior Linings and Interior Coatings in Tank Cars</i>				
C10	<i>Maintenance and Qualification of Interior Linings and Interior Coatings in Tank Cars</i>				

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Table B.1 Certification elements for tank car facilities (page 2 of 2)

Activity code	Activity	Technical Approval Dependencies	Material Group Required	Repair Level Required	Service Equipment Category Required
C12	<i>Maintenance and Qualification of Locomotive Fuel Tender Service Equipment</i>				See paragraph 3.1.4

^{a/} Per MSRP-J, Specification M-1003, Appendix A

^{b/} In order to perform *Field Manual* Rule 88.B.2 *maintenance and qualification* per Appendix D

3.1.1 Activity Codes

Table B.1 lists the *activities* that require technical *approval*. Each *activity code* is independent unless otherwise specified in Table B.1.

3.1.2 Material Groups

Table B.2 lists the *approved material groups* from Appendix M. For those *activities* specified in Table B.1, the *tank car facility* must be certified to one or more of the *material groups* listed in Table B.2. Each *material group* is independent, and a *tank car facility* can perform welding only under the *material group(s)* to which it is certified.

Table B.2 Material groups

Group	Reference	Material
Group 1	Appendix M, paragraph 3.1	Carbon steel plate
	Appendix M, paragraph 3.6	Manganese-molybdenum steel plate
	Appendix M, paragraph 3.7	Manganese-silicon steel plate
Group 2	Appendix M, paragraph 3.2	Aluminum alloy plate
Group 3	Appendix M, paragraph 3.3	High alloy steel plate (stainless steel)
Group 4	Appendix M, paragraph 3.4	Nickel plate
Group 5	Open	
Group 6	Open	
Group 7	Appendix M, paragraph 3.5	Nickel alloy steel plate

3.1.3 Repair Level

For those *activities* specified in Table B.1, the *tank car facility* must be certified to the appropriate *repair level* listed in Table B.3. Each *repair level* is independent except that RL2 encompasses RL1 capability. A *tank car facility* can perform weld *repairs* only under the *repair level(s)* to which it is certified.

Table B.3 Repair levels

Repair Level	Description
RL1	This <i>repair level</i> allows a <i>tank car facility</i> to perform all weld purpose codes referenced in Appendix R, Table R.2, with the exception of welding purpose code A, B, H, and I.
RL2	This <i>repair level</i> allows a <i>tank car facility</i> to perform all welding purpose codes referenced in Appendix R, Table R.2.
RLJ	This <i>repair level</i> allows a <i>tank car facility</i> to perform weld <i>repairs</i> to <i>tank car jackets</i> .
RLS	This <i>repair level</i> allows a <i>tank car facility</i> to perform weld <i>repairs</i> to the <i>tank car stub sills</i> , sill pads, and sill-to-pad <i>attachment welds</i> .

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3.1.4 Service Equipment Category

For those *activities* specified in Table B.1, the *tank car facility* must be certified to one or more *service equipment* categories listed in Table B.4. Each *service equipment* category is independent, and a *tank car facility* can perform *activities* only under the *service equipment* category to which it is certified.

Table B.4 Service equipment category

Category	Description
C	<i>Closures</i>
F	<i>Fittings</i>
I	<i>Instruments</i>
S	<i>Safety Relief Devices</i>
V	<i>Valves</i>

3.1.5 Certification Conditions

3.1.5.1 *Tank car facilities* certified to A19 and B82 *activity codes* may subcontract the manufacturing of *tank car tank components* to their own designs and specifications, provided that the *tank car facility* complies with paragraph 3.4. In those circumstances, the manufacturer of the *tank car components* is not required to separately obtain *AAR certification*. Otherwise, B85 is required for the *tank car facility* that manufactures *tank car tank components*.

3.1.5.2 *Tank car facilities* certified to A19 and B78 that are not located in North America must have either a designated *AAR agent* or an *AAR repair facility/repair track* in North America where final acceptance to safety appliances, air brake systems, and *AAR interchange requirements* can be confirmed.

3.1.5.3 *Tank car facility certification* to C7, C8, and/or C10 is required for *interior linings* and *interior coatings* in *tank cars* that transport materials for product purity and those materials that are corrosive or reactive to the *tank car tank* as defined in 49 CFR 180.503.

3.1.5.4 Only *tank car facilities* certified to A19, B24, B78, B81, B82, B88, C6i, C6r, C7, C8, or C10 can replace and/or *repair* the *qualification markings* per 49 CFR 180.515, the *tank car stenciled specification*, and variable identification plate per 49 CFR 179.24 on a *tank car*.

3.1.5.5 *Activity code* B82 applies to the manufacturing of *tank car tanks* moved to and from the facility without trucks (running gear), and, if applicable, includes the underframe and the support structure.

3.1.5.6 *Tank car facility certification* to C8 permits the installer of *tank car interior linings* and *interior coatings* to perform *repairs* as part of the *installation* process; however once the *tank car lining* or coating is qualified, the *tank car facility* must be certified to *activity code* C10 in order to perform *maintenance* and *qualification* to the *tank car interior lining* or *interior coating*.

3.1.5.7 *Tank car facility certification* to A19 does not require *activity code* B24 if *repairs* are performed as part of the *manufacturing* process; however once a *tank car* is certified by the A19 facility (certified *AAR Form 4-2*) the *tank car facility* must be certified to *activity code* B24 in order to perform *maintenance* and *qualification* to that *tank car tank*.

3.1.5.8 *Activity codes* C4m and C5 include welding of *tank car service equipment*, and therefore *certification* to those *activity codes* requires the *tank car facility* to comply with paragraph 3.3.1.2.

3.1.5.9 *Activity code* C4m includes the application of linings or coatings of *tank car service equipment*, if performed.

3.1.5.10 *Activity code* C5 includes the *removal/maintenance* of linings or coatings of *tank car service equipment*, if performed.

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3.1.5.11 *Activity code C5 and C6r include eyebolts.*

3.1.5.12 *Tank car facility certification to B78 does not authorize welding to the tank car tank but does authorize welding to the reinforcing pads and any other tank car pads, provided the tank car facility complies with paragraph 3.3.1.2.*

3.1.5.13 *Activity code C4a covers those facilities that produce new tank car service equipment by way of an assembling process, without any manufacturing processes. Those facilities that have a combination of manufacturing and assembling processes must be certified to C4a and C4m. For example, and by way of clarification, C4a is not intended to cover reconditioning tank car service equipment, which is covered by C5.*

3.1.5.14 *Activity code C4m covers those facilities that produce new tank car service equipment by manufacturing. All components and manufacturing processes of service equipment Category C must be manufactured or performed by a facility that is certified to manufacture or perform them. For example, and by way of clarification, in the case of a manway cover casted at one location and machined and qualified at another location, both such locations must be certified for those activities.*

3.1.5.15 *The leakage test in activity codes C6i and C6r refers to the qualification of the connection of service equipment to the tank car.*

3.1.5.16 *Tank car facility certification to C6r is required for bottom outlet valve caps, magnetic gauging device rods, secondary closures, chains, and flanges external to valves as specified by the original or alternative approved design.*

3.1.5.17 *Repair level RLJ is required only if a tank car facility performs welded repairs to tank car jackets. RLJ can be added to any activity, excluding A19 and B78.*

3.1.5.18 *Repair level RLS excludes pad-to-tank welds. Pad-to-tank welds require B24 certification.*

3.1.6 Exceptions

Tank car facility certification is not required for the following:

3.1.6.1 *Examinations prior to shipping per 49 CFR 173.31(d)*

3.1.6.2 *Conductivity or resistivity examinations of tank car interior linings and coatings prior to shipping*

3.1.6.3 *Replacement/repair of any markings or stencils on tank cars other than those specified in paragraph 3.1.5.4*

3.1.6.4 *Double shelf coupler replacement (i.e., coupler vertical restraint system) in accordance with the Field Manual of the AAR Interchange Rules*

3.1.6.5 *Replacement of gaskets with the correct size as specified by the original or alternative approved design and compatible with the lading on the following service equipment: hinged and bolted manway cover, fill port cover, bottom outlet cap, and quick disconnect dust cap (when used as a secondary closure)*

3.1.6.6 *Replacement of O-rings with the correct size as specified by the original or alternative approved design on gauging device caps and thermometer well housing tubes*

3.1.6.7 *Replacement of the rupture disk with the correct size and pressure rating as specified by the original or alternative approved design, compatible with the lading*

3.1.6.8 *Manufactures of elastomers, gaskets, eye-bolts, and threaded fasteners*

3.1.6.9 *The repair of attachments to jacket pads (see Field Manual of the AAR Interchange Rules, Rule 81)*

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3.1.6.10 The *repair* of draft lugs, striker, draft key slot, and coupler carrier (see *Field Manual of the AAR Interchange Rules*, Rule 81)

3.2 Publications

3.2.1 Each *tank car facility* must have lawful access to the latest versions of the publications below. Information on where to obtain AAR publications can be found in the “Ordering Information” section of this specification.

3.2.1.1 *MSRP*, Section C, Part III, Specification M-1002, “Specifications for Tank Cars”

3.2.1.2 *MSRP*, Section J, Specification M-1003, “Specifications for Quality Assurance”

3.2.1.3 *Field Manual of the AAR Interchange Rules*

3.2.1.4 *Office Manual of the AAR Interchange Rules*

3.2.1.5 Safety and Operations circular letters

3.2.2 Each *tank car facility* certified to A19 or B78 must have lawful access to the latest version of the publications below:

3.2.2.1 *MSRP*, Section C, Standard S-2034, “Car Builder Certification”

3.2.2.2 *MSRP*, Section C, Part II, Specification M-1001, “Design, Fabrication, and Construction of Freight Cars”

3.2.3 Each *tank car facility* must have access to the applicable federal regulations.

3.3 Personnel Qualifications

The following are personnel *qualification* requirements for the special processes associated with technical *approval*.

3.3.1 Welding

3.3.1.1 Personnel engaged in welding on *tank car tanks* must be performance-qualified in accordance with Appendix W, paragraph 11.0.

3.3.1.2 Personnel engaged in all other welding shall be performance-qualified in accordance with the American Welding Society (AWS) Railroad Welding Specification D15.1, latest revision. This includes, but is not limited to, the welding on *tank car jackets*, *stub sills*, and *service equipment*.

3.3.2 Nondestructive Testing (NDT)

Personnel engaged in *NDT* processes must be qualified and certified in accordance with Appendix T, paragraph 1.5.

3.3.3 Interior Lining and Interior Coating

Personnel engaged in *interior lining* and/or *interior coating activities* must be qualified in accordance with Appendix L, paragraph 3.0.

3.3.4 Local Postweld Heat Treatment

Personnel engaged in local postweld heat treatment processes must be qualified in accordance with Appendix R, paragraph 19.3.2.5.

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3.4 Subcontracting

Subject to the limitations in paragraph 3.4.1, a *tank car facility* can *subcontract* with another entity for certain work required to perform an *activity*, provided the *tank car facility* assumes responsibility for all work performed by the subcontractor. A *tank car facility* cannot *subcontract* an *activity*.

3.4.1 A *tank car facility* can *subcontract* only those products, services, and/or equipment listed below:

- *Interior Coating* inspector per Appendix L
- *Interior lining* inspector per Appendix L
- Welding inspector per Appendix W
- *NDT* personnel (level I, II, and III) per Appendix T
- *LPWHT* per Appendix R
- Hardness testing per Appendix W
- Measuring and test equipment calibration
- Internal QA M-1003 *audits*
- Engineering services
- Metallurgical or physical lab services
- Components of *service equipment* categories F, V, S, and I (applicable only to C4a, C4m, C5, and C12)
- Manufacture of tank car tank components per paragraph 3.1.5.1 (applicable only to A19 and B82)

3.4.2 For each subcontracted product, service, and/or equipment, the *tank car facility* must comply with Specification M-1003, Chapter 2, paragraph 2.9 by the following:

3.4.2.1 Evaluating and selecting each subcontractor

3.4.2.2 Documenting the verification method and the results of each subcontractor assessment, including objective evidence

3.4.2.3 Completing an Exhibit B-1 form to attest that each subcontractor meets the requirements of this specification

3.4.2.4 Ensuring on a continuing basis, using the documented verification method(s), that each subcontractor performs work in accordance with this specification

3.4.3 Exhibit B-1 forms are valid for one year from the attest date.

3.4.4 The process in paragraph 3.4.2 must be repeated under the following circumstances:

3.4.4.1 Prior to the expiration date of the current Exhibit B-1 form; or

3.4.4.2 When changes with the subcontractor invalidate the current Exhibit B-1 form.

3.5 Mobile Operations

3.5.1 A *tank car facility* may conduct mobile operations, provided that the following circumstances exist:

3.5.1.1 The *tank car facility* maintains record(s) for each *mobile unit*; and

3.5.1.2 Each *mobile unit* employee is identified and traceable and functions in accordance with the quality assurance program of that *tank car facility*; and

3.5.1.3 Each *mobile unit* is based at and operated from that *tank car facility*; and

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3.5.1.4 Each *mobile unit* must remain under the direction and control of that *tank car facility*; and

3.5.1.5 Each *mobile unit* operates only to *activity code(s)* for which that *tank car facility* is certified to perform.

3.5.2 Notwithstanding anything in paragraph 3.5.1, *mobile units* are not permitted to perform *activity codes* A19, B78, and/or B82.

3.5.3 Each *mobile unit* must be physically present and available for evaluation at every *AAR in-plant audit*.

3.6 Demonstration Capability

To obtain and maintain technical *approval* to this specification, each *tank car facility* must be capable of physically demonstrating the following items:

- The effective implementation of the quality assurance system to support the execution of each *activity* (i.e., *inspection and test plans*)
- The minimum capabilities for each *activity* outlined in this section.

3.6.1 A19—Construction of Tank Cars by Manufacturing

When requested by an auditor, an A19 facility must demonstrate the ability to *construct* a completed *tank car* to an *AAR-approved* design by *manufacturing*. The facility must demonstrate the following:

3.6.1.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR standards, AAR interchange rules, and federal regulations* (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.1.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.1.3 Possession of all applicable *AAR publications* and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.1.4 For the intended demonstration, provision of the *approved AAR Form 4-2* and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.1.5 Proper storage, selection, and traceability of an *approved tank car tank plate* from the applicable *material group(s)* (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.1.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.1.6.1 Rolling flat plate into two ring sections and joining the rings with a longitudinal and circumferential weld

3.6.1.6.2 Fit-up and welding of a tank head to the ring sections

3.6.1.6.3 Fit-up and welding of the *tank car tank* closing seam

3.6.1.6.4 Volumetric inspection (radiography or ultrasonic) of the tank longitudinal and circumferential welds

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- 3.6.1.6.5** Layout, fit-up, and welding of the reinforcing pads to the *tank car tank*
- 3.6.1.6.6** Layout, fit-up, tank shell preparation, and welding of the *nozzles*, sumps, and/or outlet saddles to the *tank car tank*
- 3.6.1.6.7** If applicable, layout, fit-up, and welding of the exterior heater coils
- 3.6.1.6.8** *Assembly* of the body bolsters
- 3.6.1.6.9** Layout, fit-up, and welding of the body bolsters and the *stub sills* to the reinforcing pads
- 3.6.1.6.10** Unit postweld heat treatment
- 3.6.1.6.11** Hydrostatic testing of *tank car tank*
- 3.6.1.6.12** If applicable to the *approved* design, the application of insulation, jacket, head shields, and any other *safety system*
- 3.6.1.7** Final *inspection and test*, including *qualification* stenciling, tank identification plate, and all associated markings on the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)
- 3.6.1.8** Car file preparation, including all *inspection and test* records and signed AAR Form 4-2 (AAR M-1003 QA ELEMENT 2.17)

3.6.2 B24—Maintenance and Modification of Tank Car Tanks

When requested by an auditor, a B24 facility must demonstrate the ability to maintain and modify a *tank car tank*. Demonstration of the following can be performed on either a *tank car tank* or a *tank car tank* test plate.

- 3.6.2.1** The use of *approved inspection and test* procedures, including the acceptance criteria established by the *tank car owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)
- 3.6.2.2** Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)
- 3.6.2.3** Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)
- 3.6.2.4** For the intended demonstration, provision of the *approved* AAR Form 4-2 and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)
- 3.6.2.5** Proper storage, selection, and traceability of an *approved tank car tank* plate from the applicable *material group(s)* (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)
- 3.6.2.6** The use of special processes controlled by qualified personnel and controlled equipment for the following:
 - Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
 - Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
 - Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
 - Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
 - Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
 - Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

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3.6.2.6.1 RL1 or RL2 Demonstration

Demonstration of *repair level* RL1 capability requires, at a minimum, a welder qualified by the facility in accord with Appendix W using the facility's qualified welding procedure specifications (WPS) per Appendix W. If the demonstration is performed on a *tank car tank*, the qualified welder must perform a welded *repair* in accord with Appendix R. In lieu of a *tank car facility* demonstrating *repair level* RL1 capability on a *tank car*, a facility is permitted to use a test plate, provided that the test plate material is from the listed materials in the *material group(s)* identified in the application for *certification*. The test plate must be the contour of a *tank car tank* and be a minimum size of 4 ft in width and 4 ft in height. The qualified welder must perform a horizontal position 2F fillet weld that simulates a weld *attachment* using a material from a *material group* for which the facility seeks *certification*. The fillet weld size must be a minimum 5/16 in., and the length must be a minimum of 12 in. The facility is required to perform and document nondestructive testing using *NDT* methods MT or PT, and set-up of postweld heat treatment as prescribed in Appendix R.

Demonstration of *repair level* RL2 capability requires, at a minimum, a welder qualified by the facility in accord with Appendix W using the facility's qualified welding procedure specifications (WPS) per Appendix W. This capability can be demonstrated by performing a defect *repair* (insert or through shell/head crack) to a *tank car tank*. If the demonstration is performed on a *tank car tank*, the qualified welder must perform the *repair* in accord with Appendix R. In lieu of a *tank car facility* demonstrating *repair level* RL2 capability on a *tank car*, a facility is permitted to use a test plate, provided that the test plate material is from the listed materials in the *material group(s)* identified in the application for *certification*. The test plate must be the contour of a *tank car tank* and be a minimum size of 4 ft in width and 4 ft in height. The qualified welder must perform a double-weld butt joint on a tank shell insert with a 1 in. minimum corner radius. The insert must restore original contour. The minimum size of the insert must be at least 1 ft² in size. The qualified welder must demonstrate, at a minimum, horizontal position 2G and vertical position 3G butt welds. The facility is required to perform and document nondestructive testing using *NDT* methods UT or RT on the double-weld butt joint, and set-up of postweld heat treatment as prescribed in Appendix R.

3.6.2.6.2 If applicable, the use of tooling and fixtures to *remove* deformations of the *tank car tank*

3.6.2.7 Car file preparation, including all *inspection and test* records, and compliance with TCID (AAR M-1003 QA ELEMENT 2.17)

3.6.3 B78—Construction of Tank Cars by Assembly

When requested by an auditor, a B78 facility must demonstrate the ability to *construct* a completed *tank car* to an AAR-approved design by *assembly*. The facility must demonstrate the following:

3.6.3.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.3.2 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.3.3 For the intended demonstration, provision of the *approved* AAR Form 4-2 and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.3.4 Incoming inspection and receipt of the *tank car tank* (AAR M-1003 QA ELEMENT 2.10, 2.14, 2.16, 2.17, as applicable 2.9)

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3.6.3.5 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.3.5.1 If welding the underframe is applicable, the facility must demonstrate the following using special processes controlled by qualified personnel and controlled equipment:

3.6.3.5.1.1 The *assembly* of the body bolsters

3.6.3.5.1.2 Layout, fit-up, and welding the body bolsters to the reinforcing pads

3.6.3.5.1.3 Layout, fit-up, and welding the *stub sills* to the reinforcing pads or full center sill *attachment*

3.6.3.5.2 If applicable, the *assembly/construction* of insulation, jacket, head shields, and any other *safety system*

3.6.3.5.3 If applicable, perform hydrostatic test on a *tank car tank*

3.6.3.6 Final *inspection and test*, including *qualification* stenciling, tank identification plate, and all associated markings on the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.3.7 Car file preparation, including all *inspection and test* records and signed Form AAR 4-2 (AAR M-1003 QA ELEMENT 2.17)

3.6.4 B81—Qualification of Tank Car Tanks

When requested by an auditor, a B81 facility must demonstrate the ability to perform the *qualification* of an *AAR-approved tank car tank*. The facility must demonstrate the following:

3.6.4.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.4.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.4.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

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3.6.4.4 Performance of each of the following *qualification* events, as specified by the associated *activity codes*, using special processes controlled by qualified personnel and controlled equipment:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.4.4.1 For *activity codes* A19 and B78, demonstrate on a *tank car tank* the Visual Inspection, Structural Integrity Inspection, Thickness Test, and *Safety System* Inspection. This shall occur in conjunction with the *inspection and test plan activities* of A19 and B78.

3.6.4.4.2 For *activity code* B82, demonstrate on a *tank car tank* the Visual Inspection and Thickness Test, and, if applicable, the Structural Integrity Inspection when welding the underframe. This shall occur in conjunction with the *inspection and test plan activities* of B82.

3.6.4.4.3 For *activity code* B24, demonstrate on a *tank car tank* or test apparatus the Visual Inspection, Structural Integrity Inspection, Thickness Test, and *Safety System* Inspection.

3.6.4.5 Final *inspection and test*, including the *qualification* event of the *tank car tank* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.4.6 Marking of *tank cars* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.4.7 Car file preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

3.6.5 B82—Manufacture Tank Car Tanks

When requested by an auditor, a B82 facility must demonstrate the ability to *manufacture* a *tank car tank* to an *AAR-approved* design. The facility must demonstrate the following:

3.6.5.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.5.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.5.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.5.4 For the intended demonstration, provision of the *approved AAR* Form 4-2 and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.5.5 Proper storage, selection, and traceability of an *approved tank car tank* plate from the applicable *material group(s)* (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.5.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

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3.6.5.6.1 Rolling flat plate into two ring sections, and joining the rings with a longitudinal and circumferential weld

3.6.5.6.2 Fit-up and welding of a tank head to the ring sections

3.6.5.6.3 Fit-up and welding of the *tank car tank* closing seam

3.6.5.6.4 Volumetric inspection (radiography or ultrasonic) of the tank longitudinal and circumferential welds

3.6.5.6.5 Layout, tank shell preparation, fit-up, and welding of the *nozzles*, sumps, and/or outlet saddles to the *tank car tank*

3.6.5.6.6 Layout, fit-up, and welding of the reinforcing pads to the *tank car tank*

3.6.5.6.7 Unit postweld heat treatment

3.6.5.6.8 Hydrostatic testing of *tank car tank*

3.6.5.7 If welding the underframe is applicable, the facility must demonstrate the following using special processes controlled by qualified personnel and controlled equipment:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.5.7.1 Layout, fit-up, and welding the body bolsters to the reinforcing pads

3.6.5.7.2 Layout, fit-up, and welding the *stub sills* to the reinforcing pads

3.6.5.8 File preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

3.6.6 B85—Manufacture Tank Car Tank Components

When requested by an auditor, a B85 facility must demonstrate the ability to *manufacture tank car tank components* to an *AAR-approved* design. The facility must demonstrate the following:

3.6.6.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.6.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.6.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.6.4 For the intended demonstration, provision of the *approved AAR* Form 4-2 and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.6.5 Proper storage, selection, and traceability of *approved* materials per M-1002 Appendix M (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

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3.6.6.6 The use of special processes controlled by qualified personnel and controlled equipment:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

All *manufacturing* process(es) employed to produce one or more *tank car tank* component, including, as applicable, layout methods, tooling, fixturing, and component fit-up

3.6.6.7 File preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

3.6.7 B87—Maintenance and Qualification of Fuel Tanks for Locomotive Fuel Tender
Reserved

3.6.8 B88—Maintenance and Qualification of Tank Car Stub Sills

When requested by an auditor, a B88 facility must demonstrate the ability to maintain and qualify the *tank car stub sills*, sill pads, and sill *attachment* welds both inboard and outboard of bolsters, of an *approved stub sill* design. The facility must demonstrate the following:

3.6.8.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *tank car owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.8.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.8.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.8.4 *Qualification* demonstration: perform the *qualification* event on a *tank car stub sill* using special processes controlled by qualified personnel and controlled equipment:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.8.5 Utilization of one or more *NDT* methods during the *qualification* process

3.6.8.6 *Maintenance* demonstration: perform a *stub sill* weld *repair* using a welder qualified by the facility in accord with AWS D15.1 using the facility's qualified welding procedure specifications (WPS). This capability can be demonstrated by one of the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

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3.6.8.6.1 *Tank car stub sill*: perform a welded *repair* to a *tank car stub sill* in accordance with the *approved* design provided by the *tank car owner*. Demonstration of *repair level* RLS capability requires, at a minimum, a welder qualified by the facility in accord with AWS D15.1 using the facility's qualified welding procedure specifications (WPS) per AWS D15.1.

3.6.8.6.2 In lieu of a *tank car facility* demonstrating *repair level* RLS capability on a *tank car stub sill*, a facility is permitted to use a test plate, provided the material is from Appendix M. The test plate must be a two-piece tee joint configuration and be a minimum size of 1 ft in width and 1 ft in height. The test plate must be positioned no more than 48 in. from the ground. The qualified welder must perform an overhead position 4F fillet weld that simulates a *stub sill attachment* weld to tank pad. The fillet weld size must be a minimum 3/8 in., and the length must be a minimum of 12 in.

3.6.8.6.3 Utilization of one or more *NDT* methods during the *maintenance* process

3.6.8.7 Final *inspection and test*, including the *qualification* event of the *tank car stub sill* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.8.8 Marking of the stub still *qualification* stencil on the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.8.9 Car file preparation, including all *inspection and test* records, and compliance with TCID (AAR M-1003 QA ELEMENT 2.17)

3.6.9 B89—Maintenance and Qualification of Safety Systems

When requested by an auditor, a B89 facility must demonstrate the ability to maintain and qualify *tank car safety systems*. The facility must demonstrate the following:

3.6.9.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *tank car owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.9.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.9.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.9.4 Proper storage, selection, and traceability of materials (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.9.5 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.9.6 The *maintenance* and *qualification* employed to one or more *safety systems* (thermal protection systems, insulation systems, tank head puncture resistance systems, and systems used to protect discontinuities (e.g., skid protection and protective housing))

3.6.9.7 Car file preparation, including all *inspection and test* records, and compliance with TCID (AAR M-1003 QA ELEMENT 2.17)

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3.6.10 C4a—Assemble and Qualification of Tank Car Service Equipment

When requested by an auditor, a C4a facility must demonstrate the ability to *assemble* and qualify new *tank car service equipment* to an *AAR-approved* design. The facility must demonstrate the following:

3.6.10.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.10.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.10.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.10.4 For the intended demonstration, provision of the *approved AAR* Forms 4-3, 4-5, and 4-7, and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.10.5 If applicable, provision of the associated *AAR* Form 4-4 and/or 4-6 (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.10.6 Proper storage, selection, and traceability of materials per the *AAR-approved* design (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.10.7 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.10.7.1 The *assembly* process(es) employed to produce one or more from each applicable category of *tank car service equipment* (*safety relief devices, valves, fittings, closures, and/or instruments*) for which the facility wants to obtain and maintain *certification*. This includes, as applicable, the layout methods, tooling, fixturing, and component fit-up.

If applicable, utilization of all *NDT* methods employed during the *assembly* process

3.6.10.8 Final *inspection and test*, including the *qualification* event of the *service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.10.9 Marking of the *tank car service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.10.10 File preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

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3.6.11 C4m—Manufacture and Qualification of Tank Car Service Equipment

When requested by an auditor, a C4m facility must demonstrate the ability to *manufacture* and qualify new *tank car service equipment* to an *AAR-approved* design, including the application of linings and coatings, as applicable. The facility must demonstrate the following:

3.6.11.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.5)

3.6.11.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.11.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.11.4 For the intended demonstration, provision of the *approved AAR* Forms 4-2, 4-3, 4-5, and 4-7, and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.11.5 If applicable, provision of the associated *AAR* Form 4-4 and/or 4-6 (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.11.6 Proper storage, selection, and traceability of materials per the *AAR-approved* design (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.11.7 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.11.8 *Manufacturing* process(es) employed to produce one or more from each applicable category of *tank car service equipment* (*safety relief devices, valves, fittings, closures, and/or instruments*) for which the facility wants to obtain and maintain *certification*. This includes, as applicable, the layout methods, tooling, fixturing, and component fit-up.

3.6.11.8.1 If applicable, utilization of all *NDT* methods employed during the *manufacturing* process

3.6.11.8.2 If applicable, the *installation* and *qualification* of a lining or coating to each category of *tank car service equipment*

3.6.11.9 Final *inspection and test*, including the *qualification* event of the *service equipment* demonstration (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.11.10 Marking of *tank car service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.11.11 File preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

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3.6.12 C5—Maintenance and Qualification of Tank Car Service Equipment

When requested by an auditor, a C5 facility must demonstrate the ability to maintain and qualify *tank car service equipment* to an *AAR-approved* design, including the *maintenance* and *qualification* of the lining and coating, if applicable. The facility must demonstrate the following:

3.6.12.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *equipment owner*, that comply with *AAR* standards, *AAR* interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.12.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.12.3 Possession of all applicable *AAR* publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.12.4 For the intended demonstration, provision of the *approved AAR* Forms 4-2, 4-3, and/or 4-5, and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.12.5 Proper storage, selection, and traceability of materials per the *AAR-approved* design (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.12.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.12.7 *Maintenance* process(es) employed to *repair* and/or *recondition* one or more from each applicable category of *tank car service equipment* (*safety relief devices, valves, fittings, closures, and/or instruments*) for which the facility wants to obtain and maintain *certification*. This includes, as applicable, the layout methods, tooling, fixturing, and component fit-up.

3.6.12.7.1 If applicable, utilization of all *NDT* methods employed during the *maintenance* process

3.6.12.7.2 If applicable, the *removal, maintenance, and qualification* of a lining or coating to each category of *tank car service equipment*

3.6.12.7.3 Reserved

3.6.12.8 Final *inspection and test*, including the *qualification* event of the *service equipment* demonstration (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.12.9 Marking of *tank car service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.12.10 File preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

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3.6.13 C6I—Installation of Tank Car Service Equipment, Including Leakage Test

When requested by an auditor, a C6i facility must demonstrate the *installation of tank car service equipment*, including the leakage test, on a *tank car* (associated with A19 or B78 only). The facility must demonstrate the following:

3.6.13.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.13.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.13.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.13.4 For the intended demonstration, provision of the *approved AAR Forms 4-2, 4-3, and/or 4-5*, and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.13.5 Proper storage and selection of materials (*service equipment* and elastomers) (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.13.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.13.6.1 The *installation* process(es) employed to connect one or more categories of *tank car service equipment (safety relief devices, valves, fittings, closures, and/or instruments)* to the *tank car* as specified on the *approved AAR Form 4-2 fittings arrangement* drawing

3.6.13.6.2 The means for traceability when *installing tank car service equipment*

3.6.13.7 Final inspection and leakage test of the *connection* of the *service equipment* to the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.13.8 Marking of *tank car service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.13.9 If applicable, the marking of the *service equipment qualification* stencil on the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.13.10 Car file preparation, including all *inspection and test* records (AAR M-1003 QA ELEMENT 2.17)

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3.6.14 C6r -Removal and Replacement of Tank Car Service Equipment, Including Leakage Test and Modifications

When requested by an auditor, a C6r facility must demonstrate the *removal* and replacement of *tank car service equipment*, including the leakage test and *modifications*. The facility must demonstrate the following:

3.6.14.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *equipment owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.14.1.1 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.14.1.2 The process employed when the *activity* results in a *modification* to the *tank car*:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.14.2 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.14.3 For the intended demonstration, provision of the *approved* AAR Forms 4-2, 4-3, and/or 4-5, and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.14.4 Proper storage and selection of materials (*service equipment* and elastomers) (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.14.5 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.14.6 The process(es) employed to disconnect and reconnect one or more categories of *tank car service equipment* (*safety relief devices, valves, fittings, closures, and/or instruments*). This capability can be demonstrated on either of the following:

3.6.14.6.1 A *tank car*—performed by utilizing the *equipment owner's* instructions and acceptance criteria

3.6.14.6.2 A test fixture—performed by utilizing *approved* acceptance criteria

3.6.14.6.3 The means for traceability when replacing *tank car service equipment*

3.6.14.7 Final inspection and leakage test of the *connection* of the *service equipment* to the *tank car* or test fixture (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.14.8 Marking of *tank car service equipment* (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.14.9 If applicable, the marking of the *service equipment qualification* stencil on the *tank car* (AAR M-1003 QA ELEMENT 2.12, 2.15)

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3.6.14.10 Car file preparation, including all *inspection and test* records, and compliance with TCID for *modifications* to the *tank car* (AAR M-1003 QA ELEMENT 2.17)

3.6.15 C7—Removal of Interior Linings and Coatings in Tank Cars

When requested by an auditor, a C7 facility must demonstrate the *removal of interior linings* and coatings from *tank car tank* plate material. The facility must demonstrate the following:

3.6.15.1 The use of *approved inspection and test* procedures, including the acceptance criteria, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.15.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.15.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.15.4 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.15.4.1 The *removal* and replacement and/or protection of the *tank car service equipment*

3.6.15.4.2 The method(s) employed to *remove* the *interior lining* or coating. The demonstration must include a cleaning method as authorized in Appendix L on a coated or lined test plate of *tank car tank* plate material. The test plate must be the contour of a *tank car tank* shell plate and be a minimum size of 4 ft in width, 4 ft in height, and 7/16 in. thick. The full interior side of the test plate shall be cleaned of lining or coating material and prepared according to *equipment owner's* instructions.

3.6.15.4.3 Utilization of one or more *NDT* methods to measure the thickness of the *tank car tank* after the *removal* of the *interior lining* or coating.

3.6.15.5 Update of the *tank car qualification* stencil for *removal* of the *interior lining* or coating (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.15.6 Car file preparation, including all *inspection and test* records, and, as applicable, compliance with TCID for *modifications* to the *tank car* (AAR M-1003 QA ELEMENT 2.17)

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3.6.16 C8—Installation and Qualification of Interior Linings and Coatings in Tank Cars

When requested by an auditor, a C8 facility must demonstrate the *installation* and *qualification* of *interior linings* and coatings on *tank car tank* plate material. The facility must demonstrate the following:

3.6.16.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *equipment owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.16.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.16.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.16.4 Where *interior linings/coatings* are required by the specification, provision of the *approved AAR Form 4-2* and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.16.5 Proper storage, selection, and traceability of lining and coating material (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.16.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.16.6.1 The *removal and replacement* and/or protection of the *tank car service equipment*

3.6.16.6.2 Utilization of one or more *NDT* methods to measure the thickness of the *tank car tank* prior to *installation* of the *interior lining* or coating

3.6.16.6.3 The method(s) employed to prepare the *tank car tank* and *install* the *interior lining* or coating:

3.6.16.6.3.1 Demonstrate a cleaning/preparation method as authorized in Appendix L on a bare (unlined/uncoated) test plate of *tank car tank* plate material. The test plate must be the contour of a *tank car tank* shell plate and be a minimum size of 4 ft in width, 4 ft in height, and 7/16 in. thick. The cleaning /preparation shall encompass the full interior side of the test plate.

3.6.16.6.3.2 As applicable to the lining or coating type, demonstrate all in-process measurements on the prepared substrate per the *inspection and test* plan.

3.6.16.6.3.3 Using the same test plate from paragraph 3.6.16.6.3.1, demonstrate the *installation* of a new *interior lining* or coating as authorized in Appendix L. The *installation* shall encompass the full interior side of the test plate.

3.6.16.6.3.4 As applicable to the lining or coating type, demonstrate all in-process measurements of the *installation* per the *inspection and test* plan.

3.6.16.7 Final *inspection and test*, including the *qualification* event of the *interior lining* and coating (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.16.8 Marking of the *tank car qualification* stencil for *installation* of the *interior lining* or coating (AAR M-1003 QA ELEMENT 2.12, 2.15)

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3.6.16.9 Car file preparation, including all *inspection and test* records, and, as applicable, compliance with TCID for *modifications* to the *tank car* (AAR M-1003 QA ELEMENT 2.17)

3.6.17 C10—Maintenance and Qualification of Interior Linings and Coatings in Tank Cars

When requested by an auditor, a C10 facility must demonstrate the *maintenance* and *qualification* of *interior linings* and coatings on *tank car tank* plate material. The facility must demonstrate the following:

3.6.17.1 The use of *approved inspection and test* procedures, including the acceptance criteria established by the *equipment owner*, that comply with AAR standards, AAR interchange rules, and federal regulations (AAR M-1003 QA Element 2.3, 2.5, 2.23)

3.6.17.2 Incoming inspection of materials, products, and/or services, including those that are subcontracted (AAR M-1003 QA ELEMENT 2.9, 2.10)

3.6.17.3 Possession of all applicable AAR publications and access to federal regulations (AAR M-1003 QA ELEMENT 2.3, 2.7)

3.6.17.4 Where *interior linings/coatings* are required by the specification, provision of the *approved* AAR Form 4-2 and applicable drawings (AAR M-1003 QA ELEMENT 2.7, 2.24)

3.6.17.5 Proper storage, selection, and traceability of lining and coating material (AAR M-1003 QA ELEMENT 2.9, 2.14, 2.16, 2.24)

3.6.17.6 The use of special processes controlled by qualified personnel and controlled equipment for the following:

- Product (AAR M-1003 QA ELEMENT 2.5, 2.11, 2.13, 2.18, 2.20)
- Personnel (AAR M-1003 QA ELEMENT 2.9, 2.15, 2.22)
- Documents (AAR M-1003 QA ELEMENT 2.5, 2.7, 2.15, 2.17)
- Equipment (AAR M-1003 QA ELEMENT 2.8, 2.9, 2.15)
- Materials (AAR M-1003 QA ELEMENT 2.9, 2.10, 2.13, 2.14, 2.16, 2.18, 2.20)
- Environment (AAR M-1002 QA ELEMENT 2.15, 2.16)

3.6.17.6.1 The *removal and* replacement and/or protection of the *tank car service equipment*

3.6.17.6.2 Utilization of one or more *NDT* methods to measure the thickness of the *tank car tank* prior to *maintenance* of the *interior lining* or coating

3.6.17.6.3 The method(s) employed to prepare the *tank car tank* and maintain the *interior lining* or coating:

3.6.17.6.3.1 Demonstrate a cleaning/preparation method as authorized in Appendix L on a coated or lined test plate of *tank car tank* plate material. The test plate must be the contour of a *tank car tank* shell plate and be a minimum size of 4 ft in width, 4 ft in height, and 7/16 in. thick. The cleaning/preparation shall encompass a minimum area of 1 ft² of the test plate.

3.6.17.6.3.2 As applicable to the lining or coating type, demonstrate all in-process measurements on the prepared substrate per the *inspection and test* plan.

3.6.17.6.3.3 Utilization of one or more *NDT* methods to measure the thickness of the *tank car tank* prior to *maintenance* of the *interior lining* or coating.

3.6.17.6.3.4 Using the same test plate from paragraph 3.6.17.6.3.1, demonstrate the *repair* application of an *interior lining* or coating as authorized in Appendix L. The *maintenance* shall encompass the area prepared in paragraph 3.6.17.6.3.1.

3.6.17.6.3.5 As applicable to the lining or coating type, demonstrate all in-process measurements of the *repair* application per the *inspection and test* plan.

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3.6.17.7 Final *inspection and test*, including the *qualification* event of the *interior lining* and coating (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.17.8 When applicable, update the *tank car qualification* stencil for the *interior lining* or coating (AAR M-1003 QA ELEMENT 2.12, 2.15)

3.6.17.9 Car file preparation, including all *inspection and test* records, and, as applicable, compliance with TCID for *modifications* to the *tank car* (AAR M-1003 QA ELEMENT 2.17)

3.6.18 C12—Maintenance and Qualification of Locomotive Fuel Tender Service Equipment

Reserved.

3.6.19 RLJ—Repair Level for Tank Car Jacket Repair

Listed in this section are the minimum demonstration capability requirements for *repair level* RLJ.

3.6.19.1 Demonstration of *repair level* RLJ capability requires, at a minimum, a welder qualified by the facility in accord with AWS D15.1 using the facility's qualified welding procedure specifications (WPS) per AWS D15.1.

3.6.19.1.1 If the demonstration is performed on a *tank car*, the qualified welder must perform a welded *repair* on an 11-gauge jacket in accordance with the *tank car owner's* instructions.

3.6.19.1.2 In lieu of demonstrating *repair level* RLJ on a *tank car*, a facility is permitted to use a test plate, provided that the test plate material is 11-gauge ASTM A1011. The test plate must be the contour of a typical *tank car* jacket and be a minimum size of 2 ft in width and 2 ft in height. The facility is required to apply a protective coating to the faying surface of the patch prior to welding. The qualified welder must apply a minimum 1 ft² patch of 11-gauge ASTM 1011 lapped and contoured to the test plate. With the top edge of the patch oriented in the horizontal 2F position, the welder must fillet-weld the full circumference of the patch to the test plate. An AWS D15.1 designated trained and qualified inspector must perform nondestructive testing using the AWS D15.1 acceptance criteria.

4.0 ADMINISTRATIVE PROVISIONS

4.1 AAR M-1003 Application System

The AAR M-1003 Application System (the online system) for which facility *certification* is administered and managed resides within the AAR's Quality Assurance Resource Center. The URL to this system is <https://aar.iirx.net/Account/Login?ReturnUrl=%2f>

4.2 Establishing and Managing a User Account

A user must request and establish an account with the AAR through the following link: <https://aar.iirx.net/Account/AccountRequest>

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4.3 Initial Application Process

Each facility must apply for initial *certification* via the online system. The user is responsible for completing the application as specified in the online user guide.

4.3.1 Upon submission of a completed application package, the Director—Tank Car Safety (hereinafter “Director”) will review the application. The Director may request additional information to support the application. If *AAR* does not receive all required or requested information, the application cannot be processed.

4.3.2 Once the completed application package has been reviewed and accepted by the *AAR*, the following applies:

4.3.2.1 The facility may conditionally start work on the *activities* for which it has applied for *certification*; however, the facility shall not release any products resulting from their *activities* until the facility receives *AAR certification*. This conditional provision allows the facility to be prepared to demonstrate the minimum technical demonstration capabilities required during the on-site *audit*;

4.3.2.2 The Director will authorize the *AAR* auditing agency representing (the Tank Car Committee) to schedule and perform the on-site *audit* of the facility per paragraph 4.4; and

4.3.2.3 The *audit* agency will designate a lead auditor and will assign the appropriate *audit* team based on the *certification* elements sought in the facility application. The Tank Car Committee may assign its members or *AAR* staff as additional *audit* team participants, as it deems appropriate.

4.4 On-Site Audits

4.4.1 The purpose of the on-site *audit* is to enable the *audit* team to directly witness the facility perform minimum technical demonstration requirements per paragraph 3.6.

4.4.2 The lead auditor will contact the facility to schedule the on-site *audit*, at which time the facility must confirm both the *audit* date(s) and its readiness to demonstrate all the minimum technical capabilities. These acknowledgments will be documented in the *audit* fee letter sent to the facility.

4.5 Facility Responses to Adverse Audit Findings, Requests for Reconsideration, Denial or Withdrawal of Certification, and Appeals

The procedures for facility responses to adverse *audit* findings, denial or withdrawal of *certification*, requests for reconsideration, and appeals are set forth in *AAR MSRP-J*, Specification M-1003.

4.6 Revocation of Quality Assurance Certification

Certification will be revoked if the facility fails to maintain a quality assurance program per *AAR MSRP-J*, Specification M-1003.

4.7 Revocation of Technical Certification Elements

Individual *certification* elements will be revoked if the facility fails to demonstrate the minimum technical capabilities per this appendix.

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4.8 Certification

4.8.1 The AAR Quality Assurance Committee and AAR Tank Car Committee jointly approve *certification*; however, the Tank Car Committee has final authority over granting *certification*.

4.8.2 *Certification* to this specification is in effect for a period of 3 years, subject to annual compliance *audits* per Table B.5.

Table B.5 M-1003 certification cycle

Year	M-1003 Certification
0	<i>Initial Certification Audit</i>
1	<i>Compliance Audit</i>
2	<i>Compliance Audit</i>
3	<i>Recertification Audit</i>

4.8.3 *Certification* applies to a single facility traceable to its *station stencil*. If a company desires that more than one facility be certified, each facility must be certified independently.

4.9 Maintaining Certification

4.9.1 General

4.9.1.1 To maintain *certification* to an *activity*, the facility must also maintain the *certification* elements and associated dependencies as specified in Table B.1.

4.9.1.2 The facility is responsible for uploading the most current QA manual and completed QASE into the online system 60 calendar days in advance of the next regularly scheduled *audit*. Additionally, the lead auditor may request the facility to provide *inspection and test* plans.

4.9.1.3 The Tank Car Committee reserves the right to perform scheduled and unannounced on-site *audits* of a facility at any time to ensure compliance with this appendix.

4.9.1.4 Railroads, car owners, and certified facilities have the responsibility to report improper or *unapproved tank car activity* to the Executive Director for review by the Tank Car Committee. The Executive Director may authorize an unannounced on-site *audit* of a facility and may request copies of quality records on subject cars from the involved parties.

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4.9.2 Specific Conditions

To maintain *certification* to activity code B24, the facility must demonstrate the *repair level* in accordance with Table B.6.

Table B.6 Certification schedule and RL1/RL2 requirements

Year	M-1003 Certification	RL1	RL2
1	Initial <i>Certification Audit</i>	A	B
2	<i>Compliance Audit</i>	A	C or D
3	<i>Compliance Audit</i>	A	C or D
4	<i>Recertification Audit</i>	A	B

Key for Table B.6	
Symbol	Meaning
A	RL1 Demonstration Required
B	RL2 Demonstration Required
C	If the facility can provide evidence that they have performed RL2 on a <i>tank car tank</i> since the last inspection, then no demonstration of RL1 or RL2 is required
D	If the facility provides no evidence that they have performed RL2 on a <i>tank car tank</i> since last inspection they must, at a minimum, demonstrate RL1 to retain <i>repair level 2 (RL2) repair level</i> status.

4.10 Fees

All service fees associated with initial applications, *audit* administration, and quality assurance on-site *audits* are listed in the *Office Manual of the AAR Interchange Rules*, Appendix E. Unpaid service fees will result in denial or revocation of *certification*.

4.11 Procedure for Change Notification

This section outlines the procedures for a facility to notify the Director of changes to their *certification*. Depending upon the scope of the change, the facility may be subject to an on-site *audit* to validate the change.

4.11.1 Change in Ownership or Location

4.11.1.1 If a facility has a change in ownership, the new facility owner is responsible for submitting an Exhibit B-3 to the Director within 30 days of the change in ownership. The Exhibit B-3 must be accompanied with a transition plan and specified timeline. This notification will initiate the Tank Car Committee’s consideration of the transfer of *approval*.

4.11.1.2 If the facility has a change in physical location only, the facility is responsible for submitting an Exhibit B-3 to the Director. The facility must indicate in the comment section that there is no change to *certification* elements, personnel, processes, procedures, or equipment.

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4.11.2 Adding Certification Elements

4.11.2.1 A facility may add *certification* element(s) at any time after initial *certification* by completing the Exhibit B-3 Change Request Form and submitting it to the Director for consideration. The addition of *certification* elements will result in a recertification on-site *audit* of all *certification* elements, including the newly added elements. This is done so that the facility complies with the annual evaluation requirements for all *certification* elements.

4.11.2.2 The on-site *audit* generally will be scheduled no sooner than 90 days from the date the Exhibit B-3 is accepted by the Director. The facility cannot add *certification* elements 60 days prior to the next scheduled *audit*.

4.11.2.3 Once the Exhibit B-3 is accepted, the facility can start work on the newly added *certification* elements; however, it shall not release the newly added *activity* until the facility receives *AAR certification*. This provision allows the facility to be prepared to demonstrate the minimum technical demonstration capabilities during the on-site *audit*.

4.11.3 Withdrawing Certification or Certification Elements

A facility may withdraw its entire *certification* or a *certification* element(s) at any time in the *certification* cycle by completing an Exhibit B-3 and submitting it to the Director. The facility must include the effective date of withdrawal and a statement specifying which *certification* element(s) the facility wants withdrawn from its *certification*.

4.12 Certification Live Registry

4.12.1 Use the following URL to view the certified *tank car facility* registry:

[LINK](#)

4.12.2 The online system provides a live registry of certified facilities. There is a specific registry for *tank car facilities* that includes the following:

- QA code/*station stencil*
- Facility name
- Facility city
- Facility state
- *Activity codes*
- *Material groups*
- *Repair level* capability
- *Service equipment* category

This registry can be exported for further query capability.

4.13 Exhibits

- Exhibit B-1 Subcontractor Evaluation Sheet
- Exhibit B-3 Application for Tank Car Facility Technical Certification and Change Notification Form
- Exhibit B-3A Certification Additional Information Form

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4.14 AAR Staff Contact for This Appendix

For questions, comments, or interpretations of this appendix contact the following:

Director—Tank Car Safety
Association of American Railroads
425 Third Street SW, Suite 1000
Washington, DC 20024
Phone: 202-639-22602
E-mail: mforister@aar.org

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APPENDIX B



ASSOCIATION
OF AMERICAN
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EXHIBIT B-1

SUBCONTRACTOR EVALUATION SHEET

Each facility shall complete and retain a copy of this form for each subcontractor required by Appendix B. A company representative responsible for the activity shall attest that the subcontractor uses appropriate equipment, procedures, and personnel to meet the requirements of this specification. This form expires one year after the date verified below.

Part 1: Subcontractor

1 Company Name

2 Address

3 City

4 State/Province

5 Zip/Postal Code

6 Country

Part 2: Primary Subcontractor Contact

7 Name

8 Title

9 Office Phone

10 Cell Phone

11 Fax

12 Email Address

Part 3: Subcontractor Activity

13 Select the applicable activities provided to the Certified Facility :

Personnel

Process

Equipment

Service

Product

For each activity identified above, explain how the company representative responsible for that activity verifies that the subcontractor understands and conforms to the requirements of the Association of American Railroads *Manual of Standards and Recommended Practices, Section C Part III, Specification for Tank Cars (M-1002)*.

14 Personnel

15 Processes

16 Equipment

17 Service

18 Product

Part 4: Company Representative

19 Company Name

20 Name

21 Title

22 Office Phone

23 Cell Phone

24 Fax

25 Address

26 City

27 State/Province

28 Zip/Postal Code

29 Country

30 Signature (Attesting)

31 Date Verified [MM/DD/YYYY]

32 Date of Expiration [MM/DD/YYYY]

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EXHIBIT B-3

**APPLICATION FOR TANK CAR FACILITY TECHNICAL CERTIFICATION
AND CHANGE NOTIFICATION FORM**

This form is both the application for AAR Technical Certification for a single tank car facility and used as change notification as required by paragraph 3.10. This application must be accompanied by an initial payment as required by paragraph 3.13. This form is part of the application package (see paragraph 3.1.2), which must be submitted to

Executive Director—Tank Car Safety
Association of American Railroads
425 Third Street, SW Suite 1000
Washington, D.C. 20024

Part 1: General Application Information

1 Application for Initial Certification Inspection Recertification Inspection Change Notification

2 Application Date [MM/DD/YYYY]

3 Do you have a valid M-1003 Quality Assurance Program Certification? Yes No

If "No," the facility must apply for M-1003 QAP certification. (NOTE: In addition to technical certification, QA certification is required in order to perform any tank car activity listed in Part 4 of this application and in Appendix B Table B.2.)

4 Applicable to facilities requesting certification for manufacturing (A19) and/or assembling (B78) tank cars: Do you have a valid S-2034 Car Builder Certification? Yes No

If "No," the facility must apply for S-2034 Car Builder Certification.

5 If you are an existing AAR Registered Tank Car Facility, provide the following:

What is your Station Stencil?

Do you prefer to keep the same Station Stencil? Yes No

Part 2: Tank Car Facility Information

6 Station Stencil (Assigned by AAR; however Station Stencil request can be made in field 36 Comments)

7 Company Name

8 Address 9 City

10 State/Province 11 ZIP/Postal Code 12 Country

Part 3: Primary Contact at Facility

13 Name 14 Title

15 Office Phone 16 Cell Phone 17 Fax

18 Email Address

Part 4: Applicant

19 Is the applicant the contact identified in Part 3 and located as identified in Part 2?

Yes (if so, skip this part) No

20 Company Name

21 Name 22 Title

23 Address 24 City

25 State/Province 26 ZIP/Postal Code 27 Country

28 Office Phone 29 Cell Phone 30 Fax

31 Email Address

Part 5: Recipient of Certification from AAR

32 Select the Recipient (NOTE: This facility must have the ability to produce the certification letter upon request.)

Applicant (Part 4) Primary Contact (Part 3)

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APPENDIX B

**EXHIBIT B-3
APPLICATION FOR TANK CAR FACILITY TECHNICAL CERTIFICATION
AND CHANGE NOTIFICATION FORM**

Part 6: Facility Certification Information

NOTE: Certified facility must be capable of performing, or arrange to have performed, all associated tank car activities for which the facility is certified.

33 Select activity codes that apply:

- 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

34 Select each applicable material group (1, 2, 3, 4, 7) or N/A:

- MG 1 TC-128 Included MG 2 MG 3 MG 4 MG 7(s) N/A

35 Select a repair level capability if applying for B24 and/or B83:

- RL1—Demonstrate 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.
- RL2—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.

Part 7: Fee Information

36 Is the initial payment, as required by paragraph 3.13 of Appendix B, attached? Yes
(NOTE: AAR will not process application without initial payment)

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EXHIBIT B-3

**APPLICATION FOR TANK CAR FACILITY TECHNICAL CERTIFICATION
AND CHANGE NOTIFICATION FORM**

37 Comments

This is to attest that the information provided in this application meets all requirements of M-1002, Appendix B, and that all information required by M-1002, Appendix B, Form B-3A, has been included.

38 Applicant's Name

39 Applicant's Signature

40 Company

41 Signature Date [MM/DD/YYYY]

42 Title

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**ASSOCIATION
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**EXHIBIT B-3A
CERTIFICATION ADDITIONAL INFORMATION FORM**

This form must be completed and provided as part of the application package per Appendix B, paragraph 3.1.2, for tank car facility certification. The intent of the term "In-House" used in this form is to identify if the facility has on-site the item, personnel, process, equipment, service, or product. It is not intended to mean having the item, personnel, process, equipment, service, or product within an organization, company, or corporation or at another facility.

Any reference to an appendix within this form implies an appendix within M-1002 unless otherwise specified.

If the facility subcontracts any of the services or equipment listed below or listed in Appendix B paragraph 2.7.1, a copy of the Exhibit B-1 Subcontractor Evaluation Sheet must be included with the application.

Part 1: Equipment

- 1 Does the facility subcontract any equipment necessary to perform the tank car activities for which technical certification is requested?
 Yes No

- 2 Does the facility possess the post-weld heat-treatment equipment for unit and/or local treatment in accord with Appendix W, paragraph 17.0, and Appendix R, paragraph 20.0?
 In-house Subcontracted N/A to tank car activities at this facility

- 3 Does the facility have the welding equipment necessary to perform the tank car activities for which technical certification is requested?
 In-house Subcontracted N/A to tank car activities at this facility

- 4 Does the facility have welding gauges necessary to perform the tank car activities for which technical certification is requested?
 In-house Subcontracted N/A to tank car activities at this facility

- 5 Does the facility possess hardness testing equipment necessary to perform the tank car activities for which technical certification is requested?
 In-house Subcontracted N/A to tank car activities at this facility

- 6 Does the facility possess hydrostatic equipment for tank and heater coil testing necessary to perform the tank car activities for which technical certification is requested?
 In-house N/A to tank car activities at this facility

- 7 Does the facility possess pressure relief valve test equipment necessary to perform the tank car activities for which technical certification is requested?
 In-house Subcontracted N/A to tank car activities at this facility

- 8 Does the facility have a transfer table or other mechanism to simulate AAR minimum curve requirements?
 In-house N/A to tank car activities at this facility

- 9 Does the facility have possession of or access to a scale for weighing cars?
 In-house N/A to tank car activities at this facility

- 10 Does the facility have designated level track for adjustment of side bearings and coupler height?
 In-house N/A to tank car activities at this facility

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**EXHIBIT B-3A
CERTIFICATION ADDITIONAL INFORMATION FORM**

11 Does the facility have the proper storage for the following items in-house?

	Yes	N/A to Tank Car Activities at This Facility
Welding Electrodes/Wire	<input type="checkbox"/>	<input type="checkbox"/>
Service Equipment	<input type="checkbox"/>	<input type="checkbox"/>
Gaskets	<input type="checkbox"/>	<input type="checkbox"/>
Fasteners	<input type="checkbox"/>	<input type="checkbox"/>
Valves and Fittings	<input type="checkbox"/>	<input type="checkbox"/>

12 Does the facility have the sufficient flux and/or rod ovens in use to support the operations per Appendix W and AWS D15.1?

- Yes No N/A to tank car activities at this facility

13 Does the facility possess, or has access to, any other equipment necessary to perform the tank car activities for which technical certification is requested?

- Yes No
 If "Yes," has the information required above been included with this form?

Part 2: Welding Procedures

14 Does the facility perform welding to tank car tanks?

- Yes No (If "Yes," the items in this part must be addressed and the facility must provide the supporting documentation with this form.)

15 Current qualification test results for a material listed in each material group for which certification is requested, including a copy of Welding Procedure Qualification Record (PQR), Appendix W, Fig. W13, with the following:

- a. Data illustrating preparation of abutting plate edges
 - b. Tabular data outlining welding-essential variables as prescribed by Appendix W used in welding plate of various thicknesses for each material group for which certification is requested.
 - c. Tests performed on an approved plate material for tank fabrication as listed in Appendix M, paragraph 3.0.
- The information required above has been included with this form.

16 List of welders, by name and identification symbol, qualified per Appendix W at the facility. One or more welders qualified as defined in Appendix W for each material group for which certification is requested must be employed at the facility. One copy of Welder Performance Qualification Test (WPQT), Appendix W, Fig. W14, must be included for each material group for which certification is requested.

- The information required above has been included with this form.

Part 3: Nondestructive Examination/Testing (NDE, NDT, NDI)

17 Does the facility have an NDT written practice administered by an NDT Level III as required by Appendix T, paragraph 1.4.1?

- Yes No If "No," explain:

18 Provide the name of the NDT Level III:

The NDT Level III is

- In-house Subcontracted

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**EXHIBIT B-3A
CERTIFICATION ADDITIONAL INFORMATION FORM**

19 Does the NDT Level III meet the qualification requirements of Appendix T?

- Yes No (If "No," the application will be placed in suspense until such time as the facility provides a statement that the NDT Level III is qualified to Appendix T)

20 Identify the NDT methods that are applicable and not applicable to the tank car activities for which technical certification is requested, and identify whether the nondestructive testing is performed by facility personnel in-house and/or subcontracted:

Method	Applicable	Not Applicable	In-House	Subcontracted
Liquid Penetrant (PT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnetic Particle (MT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ultrasonic (UT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ultrasonic Thickness (UTT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leak Testing (LT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bubble Leak Test (BT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (describe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiographic (RT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visual Inspection (VT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remote Visual Inspection (RVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acoustic Emission (AE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thermal/Infrared (IR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21 List of facility NDT personnel certified per Appendix T, including name, NDT level of certification, NDT method, and certification expiration date.

- The information required above has been included with this form.

Part 4: Organization and Personnel

The items in this part must be addressed and the facility must provide the supporting documentation applicable to the tank car activities for which technical certification is requested.

22 Current organization charts of engineering, production, and quality assurance personnel (including mobile unit personnel). A statement describing key personnel responsible for supervising engineering, manufacturing/production, repair, nondestructive testing/examinations, welding, and ensuring quality in compliance with AAR standards, including the following:

- a. Name and Title
- b. Outline of duties
- c. Delegated authority
- d. Level to which certified (for nondestructive testing (NDT), welding inspection, and coating/lining inspection)
- e. Experience, education, and training

- The information required above has been included with this form.

Part 5: Additional Information Required for Recertification Only

23 If exhibit R-1 forms are prepared, provide a description of how these documents are originated, processed, and stored.

- The information required above has been included with this form.

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**EXHIBIT B-3A
CERTIFICATION ADDITIONAL INFORMATION FORM**

Part 6: Publications and Documents

24 The facility must possess the following latest publications that are applicable to the tank car activities for which technical certification is requested; and any other documents applicable to the facility's tank car activities:

- AAR *MSRP*, Section C, Standard S-2034
- AAR *MSRP*, Section C Part II, Design, Fabrication, and Construction of Freight Cars (M-1001)
- AAR *MSRP*, Section C Part III, Specifications for Tank Cars (M-1002)
- AAR *MSRP*, Section J, Specifications for Quality Assurance (M-1003)
- Field Manual of the AAR Interchange Rules*
- Office Manual of the AAR Interchange Rules*
- Other Publications required by the *AAR Field Manual of the Interchange Rules*, Rule 1.5.b
- AAR circulars and Casualty Prevention circular letters
- Title 49 Code of Federal Regulations, Parts 171-180
- Title 49 Code of Federal Regulations, Parts 215, 231
- Transportation Dangerous Goods (TDG) regulations
- CGSB Standard CAN/CGSB 43.147-2005

MSRP = Manual of Standards and Recommended Practices

NOTE: A list of all current AAR *MSRP* publications and how they can be ordered is provided in M-1002.

Part 7: Remarks

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