Pressure Piping Alternative Test Methods Procedure Requirements

AB-519

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Table of Contents

FOREWORD

As provided for under Section 30(2) of the Pressure Equipment Safety Regulation (PESR), the Administrator in the pressure equipment discipline has established that ABSA document AB-519 "*Pressure Piping Alternative Test Methods: Procedure Requirements"* specifies requirements for quality management systems and for procedures pertaining to the use of alternative pressure piping test methods by an Owner-User organization.

Minimum Requirements for an Owner-User Procedure That Allows [1]Alternative Test Methods in Lieu of Hydrostatic Leak Testing for Pressure Piping Constructed to ASME B31.3

1.0 INTRODUCTION

This document outlines the minimum requirements that must be included in an Owner-User integrity management system procedure that would allow the use of alternative test methods for an ASME B31.3 closure weld, without ABSA acceptance of each occurrence. The provision to utilize alternative test methods without ABSA acceptance of each specific occurrence is only applicable to an Owner-User company (i.e., AQP-8XXX series Certificate of Authorization Permit holder) with an in-house Chief Inspector that has requested authorization to utilize the alternative test methods within the scope of their Owner-User program and has implemented a procedure for this activity that has been accepted by ABSA. The AB-519 procedure may also be utilized to document justification and approval for alternative test methods (i.e. initial service leak testing per ASME B31.3, paragraph 345.7) on category D fluid service piping systems that will not be leak tested in accordance with B31.3 paragraphs 345.4, 345.5 or 345.6. The PESR & ASME B31.3 Pressure Piping System Leak Testing Decision Chart included as Figure 1, on page 3 of this document, provides a guide to the combined PESR and construction code requirements for leak testing.

An Owner-User company that does not have an in-house Chief Inspector may implement a procedure that meets the requirements outlined within this document to prepare the necessary justification to use alternative test methods, but would have to obtain specific ABSA acceptance (i.e., from the applicable ABSA field Inspector) for each closure weld that would not be hydrostatically leak tested in accordance with the PESR.

ABSA policy documents are living documents that are reviewed periodically to ensure that they are aligned with current industry practices. We would welcome any suggestions you have to improve this document. Please provide your comments to inspections@absa.ca.

2.0 DEFINITIONS

Closure Weld - The final weld connecting piping systems and components that will not be leak tested in accordance with ASME B31.3 paragraphs 345.4, 345.5 or 345.6;

a) between two piping systems made of new materials that have not been in service and have separately been successfully leak tested, or

[1] **The "Alternative Test Methods" terminology used throughout this document and the associated sample forms is as referred to in Section 30 of the Alberta Pressure Equipment Safety Regulation, and must not be confused with the ASME B31.3 paragraph 345.9 Alternative Leak Test terminology, as these are different subjects.**

b) between a piping system made of new materials that has not been in service and has been successfully leak tested and a piping system that either is or has been in service. In this case the condition of the portion of the piping system that is or has been in service is important to the quality of the closure weld.

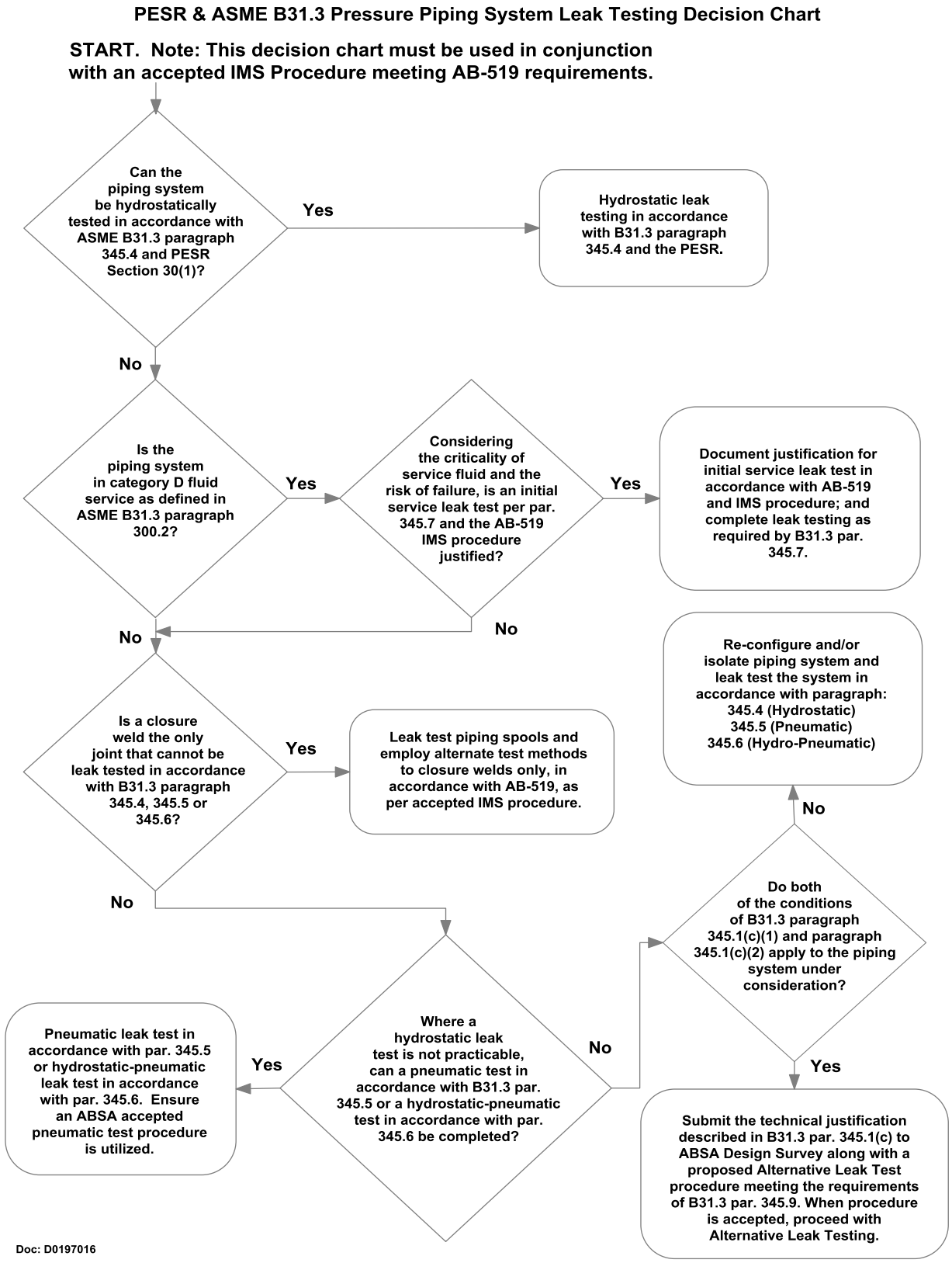
In-Process Examiner - The "owner's Inspector" as described in ASME B31.3 paragraph 340 or a competent person delegated by the owner's Inspector, as described in paragraph 340.4(c), to perform the specified inspection activity. The personnel performing in-process examination shall not perform the production work (e.g. the welder, fitter, etc), and shall be acceptable to the owner.

3.0 BACKGROUND AND REGULATORY REQUIREMENTS

Section 30(1) of the PESR requires that "all pressure piping leak tests must be conducted using the hydrostatic method". The PESR also provides in Section 30(2) that "despite subsection (1), the Administrator may accept, for a specific pressure piping system, alternative test methods that are allowed in a code or standard that is declared in force". Therefore an ABSA Inspector may act on behalf of the Administrator in this regard, if it is within their delegation of powers, to accept, for a specific pressure piping system, alternative test methods under the PESR. Additionally, the Administrator has authorized the acceptance of Owner-User procedures for alternative test methods that meet the requirements outlined in this document without specific submission for each closure weld, in the case of an Owner-User company with an in-house Chief Inspector.

Within PESR Section 6, the ASME B31.3 Process Piping code is declared in force. Although ASME B31.3 permits the use of an initial service leak test in lieu of the hydrostatic leak test for Category D fluids, because of the superseding PESR requirement for hydrostatic testing [i.e., Section 30(1)] of all pressure piping, the owner must apply the process described in this requirements document to justify initial service leak testing in accordance with B31.3 paragraph 345.7. Additionally, in ASME B31.3 there are alternative test methods described as well as a provision to exempt certain welds (closure welds) from the required leak tests. In paragraph 345.2.3(c), a closure weld is described as "the final weld connecting piping systems and components which have been successfully tested in accordance with paragraph 345…". It goes on to say that these welds "need not be leak tested provided the weld is examined in-process in accordance with paragraph 344.7 and passes with 100% radiographic examination in accordance with paragraph 344.5 or 100% ultrasonic examination in accordance with paragraph 344.6".

FIGURE 1:


PESR & ASME B31.3 Pressure Piping System Leak Testing Decision Chart
START. Note: This decision chart must be used in conjunction with an accepted IMS Procedure meeting AB-519 requirements.
Can the piping system be hydrostatically tested in accordance with ASME B31.3 paragraph 345.4 and PESR Section 30(1)?
Yes
Hydrostatic leak testing in accordance with B31.3 paragraph 345.4 and the PESR.
No
Is the piping system in category D fluid service as defined in ASME B31.3 paragraph 300.2?
Yes
Considering the criticality of service fluid and the risk of failure, is an initial service leak test per par. 345.7 and the AB-519 IMS procedure justified?
Yes
Document justification for initial service leak test in accordance with AB-519 and IMS procedure; and complete leak testing as required by B31.3 par. 345.7.
No
No
Is a closure weld the only joint that cannot be leak tested in accordance with B31.3 paragraph 345.4, 345.5 or 345.6?
Yes
Leak test piping spools and employ alternate test methods to closure welds only, in accordance with AB-519, as per accepted IMS procedure.
Re-configure and/or isolate piping system and leak test the system in accordance with paragraph: 345.4 (Hydrostatic) 345.5 (Pneumatic) 345.6 (Hydro-Pneumatic)
No
No
Do both of the conditions of B31.3 paragraph 345.1(c)(1) and paragraph 345.1(c)(2) apply to the piping system under consideration?
Yes
Where a hydrostatic leak test is not practicable, can a pneumatic test in accordance with B31.3 par. 345.5 or a hydrostatic-pneumatic test in accordance with par. 345.6 be completed?
No
Yes
Pneumatic leak test in accordance with par. 345.5 or hydrostatic-pneumatic leak test in accordance with par. 345.6. Ensure an ABSA accepted pneumatic test procedure is utilized.
Submit the technical justification described in B31.3 par. 345.1(c) to ABSA Design Survey along with a proposed Alternative Leak Test procedure meeting the requirements of B31.3 par. 345.9. When procedure is accepted, proceed with Alternative Leak Testing.
Doc: D0197016

4.0 CHECKLISTS AND SAMPLE FORMS FOR OWNER-USER PROCEDURES

The following checklists outline minimum Alberta requirements, which meet or exceed the ASME B31.3 requirements, for an Owner-User procedure permitting the use of alternative test methods in lieu of hydrostatic leak testing for a closure weld within a pressure piping system constructed in accordance with the Alberta Safety Codes Act and B31.3. Sample forms are also provided as Appendices of this requirements document for guidance in procedure development.

The Owner-User company procedure must be submitted to and be accepted by ABSA prior to use. This procedure acceptance will usually be as part of the Owner-User integrity management system implementation audit process.

An Owner-User company with an in-house Chief Inspector that has implemented a procedure complying with all of the following requirements would be authorized to use alternative test methods in lieu of a hydrostatic leak test for closure welds under the scope of their Owner-User integrity management system.

An Owner-User company that does not have an in-house Chief Inspector may implement procedures complying with all of the following requirements and use this procedure to justify the use of alternative test methods in lieu of a hydrostatic leak test. In such cases each submission for a specific closure weld that would use alternative test methods would require acceptance from the applicable ABSA field Inspector. The Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request form or equivalent document would be submitted to the ABSA field Inspector to initiate the request for acceptance of alternative test methods for the specific closure weld, unless the alternative test methods had already been accepted as part of the pressure piping design submission (i.e., IMS Procedure Requirements for Closure Welds checklist item 19).

IMS Procedure Requirements for all Closure Welds		
	Requirement	**Covered**
1	The procedure must identify the scope of the procedure (i.e., closure welds between piping systems made from new materials only, or closure welds between piping systems made from new materials and a piping system that is or has been in service, or both).	☐
2	The procedure must indicate that it is to be applied on a **per weld basis** and that approval must be obtained **before** work can begin. A method of providing documented evidence of the considerations and approvals required must be included in the procedure (e.g., a sample Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request Form is available).	☐
3	The procedure must indicate who is required to approve the use of the procedure and how that approval will be documented (i.e., an Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request form, or equivalent). The Chief Inspector or an individual with equivalent authority must approve procedure use, as well as the Designer of the piping system (see # 8 and 9 below). **The Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request form, or equivalent document that is developed as part of the AB-519 IMS procedure, must be submitted along with the IMS procedure for acceptance by ABSA. A sample form to document approvals is provided as Appendix 1.**	☐

IMS Procedure Requirements for all Closure Welds		
	Requirement	**Covered**
4	The procedure must require that technical justification for not completing the hydrostatic pressure test is given and must require that all other test methods that have been explored are listed. Examples of justifications (acceptable & not) would be: (a) Ambient temperature below freezing temperature of water. This is not justification alone as other test fluids appropriate for low temperature testing applications may be used, at temperatures below the freezing temperature of water. (b) Acceptable technical justification may be that residual water will contaminate the process and the potential energy of a pneumatic test exceeds recognized safety hazards. (c) Another acceptable justification may be that the closure weld being made is a tie-in to a piping system that is not designed for the additional stress caused by a hydrostatic test (i.e., because the supports are not designed for the additional weight of the water) and the potential energy of a pneumatic test exceeds recognized safety hazards.	☐
5	The procedure must indicate who is required to supervise/track the use of the procedure and who is required to perform the in-process examination. (e.g., This is probably two different people. Supervision of the procedure would most likely be the Owner-User Chief Inspector and the person conducting the in-process examinations would be the In-Process Examiner.) ***NOTE:*** **The personnel performing in-process examination shall not perform the production work (e.g. the welder, fitter, etc), and shall be acceptable to the owner.**	☐
6	The procedure must indicate the piping Code of Construction that the procedure applies to (i.e., ASME B31.3, not ASME B31.1).	☐
7	It must identify the limitations of when the procedure can be used; service conditions (i.e., pressure, temperature, fluid service, etc), thickness, type of weld (i.e., butt-weld, socket-weld), applicable piping sizes, and indicate that outside of these limitations ABSA acceptance of the specific alternative test method is required. If the AB-519 procedure will include provisions to document justification for service leak testing of category D fluid service piping systems this must also be identified or if another procedure is utilized for this purpose the relevant process shall be identified.	☐
8	Applicable piping design stress calculations and other engineering analysis in accordance with the Code of construction are required irrespective of the test method; however, as part of the alternative test method procedure it is required that the Designer, as described in ASME B31.3 paragraph 301.1, verifies and re-affirms that the applicable stress calculations and other engineering analysis have been completed and that the piping stresses meet the Code acceptance criteria. The construction Code defines the temperatures, pressures, and forces applicable to the design of piping, and states the consideration that shall be given to various effects and their consequent loadings. For example: All B31.3 piping design and construction must consider piping stresses and include a formal flexibility analysis unless exempted by one of the following criteria (Ref. B31.3 319.4.1): (a) The piping duplicates, or replaces without significant change, a system operating with a successful service record. (b) Can readily be judged adequate by comparison with previously analyzed systems. (c) Is of uniform size, has no more than two points of fixations, no intermediate restraints, and falls within the limitations of the equation given in 319.4.1(c). It should be noted that the equation given in 319.4.1(c) is not applicable to piping systems used under severe cyclic conditions.	☐
9	The piping system Designer must be required to document their re-affirmation and approval on the Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request form.	☐

IMS Procedure Requirements for all Closure Welds		
	Requirement	**Covered**
10	The procedure must state that all piping components (e.g., piping spools) must be hydrostatically leak tested prior to final closure weld completion. The exception, which should be explained in the procedure, is for piping systems in Category D fluid service which may be subjected to an initial service leak test when justified; as described within the procedure (e.g., after consideration of the criticality of the service fluid and the risk of failure the initial service leak testing approval is documented on the Alternative Test Methods in Lieu of Hydrostatic Pressure Test Request form).	☐
11	100% RT/UT of final butt-weld is required.	☐
12	100% MT/PT of root pass and final weld is required for butt-welds and 100% MT/PT of final weld for all other types of closure welds. MT/PT of the final weld will be completed after the weld has been allowed to slow cool to ambient temperature. The requirement for butt-weld root pass MT/PT is not intended to apply where conducting the examination would contravene WPS heating/cooling requirements.	☐
13	All RT exposures shall be completed by a qualified or Certified Exposure Device Operator (CEDO) and interpreted by a CGSB or SNT-TC-1A Level II or Level III examiner. All other NDE shall be completed and interpreted by a CGSB or SNT-TC-1A Level II or Level III examiner. The criteria for interpretation shall be as required for the applicable fluid service, provided by ASME B31.3, Table 341.3.2. The timing of the NDE shall be identified (e.g., delayed NDE is advised if hydrogen contamination is possible).	☐
14	An initial service leak test on start up, as described in ASME B31.3 paragraph 345.7, and control of the initial pressurization is required for the closure weld joint.	☐
15	The procedure must include, as an attachment, a generic ITP (or Travel Sheet) for the In-Process Examination that addresses the items listed in Step 3 of this checklist **A sample form to document in-process inspections/examinations is provided as Appendix 2.**	☐
16	The procedure must indicate the minimum qualifications and competency of the welder and the individual performing the In-Process Examination (Welder – B pressure & applicable WPQ performance variables for the scope of work, In-Process Examiner – 'owner's Inspector' as defined by B31.3 or a competent person delegated by the owner's Inspector).	☐
17	The welding must be done using a registered WPS that is appropriate for the scope of work.	☐
18	The work must be performed by a pre-approved contractor with an ABSA certified quality program to construct B31.3 piping. The contractor's quality system shall be appropriate for the scope of work.	☐
19	If the design requires submission to ABSA Design Survey (i.e., volume > $0.5m^3$) then the piping design submission must identify any closure welds, and the use of the accepted Owner-User alternative test methods procedure must be noted in the submission. Regardless of whether the design is required to be submitted for design registration, it is good practice to identify closure welds at the design stage.	☐

If the Owner-User wishes to include closure welds between a piping system made of new materials that has not been in service and has been hydrostatically tested and a piping system that either is or has been in service the AB-519 procedure must include the following additional considerations:

Additional IMS Procedure Requirements for Closure Welds That are Tie-Ins		
	Requirement	**Covered**
1	The procedure must require that the piping that is/has been in service (existing pipe) can be traced to the material specification and grade (i.e., the same requirement as is applied to material used in new construction).	☐
2	The procedure shall require an examination to verify the thickness of the existing pipe material at the area where the closure weld is to be made.	☐
3	Visual examination of the existing pipe, once cut, is required. The In-Process Examiner shall ensure that there are no defects or foreign material on or inside the pipe that would affect the quality of the weld.	☐
4	MT/PT of butt-weld preparation is required.	☐
5	Process contamination of existing piping material shall be addressed. For sour service, a bake out before welding may be required and hardness testing of the final weld may also be required. For other process fluids, process contamination of the pipe material due to the process fluids and operating conditions must be considered by the Designer, to determine if any mitigation actions are needed to assure production of a sound weld.	☐
6	Consideration must be given as to whether a flexibility analysis of the existing piping system must be completed to ensure safety of the completed piping system.	☐

A method of documenting In-Process Examination (e.g., In-Process Examination travel sheet) must be developed as part of the procedure and submitted to ABSA along with the procedure for acceptance. The method of documentation shall contain the following requirements (i.e., each step shall have accept/reject criteria established).
Verification of each step must be documented and signed off by the In-Process Examiner. The final sign-off documenting that the all applicable examinations have been completed and all of the specified requirements have been met shall be by the owner's Inspector.
All non conformances must be reported to the Chief Inspector immediately for follow up.

IMS Procedure Requirements for In-Process Examination Travel Sheet		
	Requirement	**Covered**
1	Verification that joining procedure variables are acceptable (e.g., filler material confirmation, position, etc., as specified within B31.3 paragraph 344.7.1).	☐
2	Verification of Welder qualifications (i.e., WPQ performance variables).	☐
3	Joint preparation & cleanliness.	☐
4	Storage & distribution of consumables (e.g., storage of low hydrogen electrodes must comply with the electrode manufacturer's specifications).	
5	Fit-up, Joint clearance and internal alignment prior to joining. The internal misalignment criteria for girth butt welds shall be no more than: ➢ 1/16" for pipe wall thicknesses up to and including ¼" ➢ ¼(t) for pipe wall thicknesses up to and including ¾" ➢ 3/16" for pipe wall thicknesses greater than ¾"	☐
6	Preheat and interpass temperature, as applicable.	☐
7	Condition of the root pass after cleaning. External visual examination and, when accessible, internal visual examination. MT/PT non-destructive examination for butt-welds.	☐

IMS Procedure Requirements for In-Process Examination Travel Sheet		
	Requirement	**Covered**
8	Slag removal and in-process weld condition between each weld pass (any suspected defect shall be cause for further NDE to verify the finding). Each weld pass shall be examined and any defects identified shall be satisfactorily removed before welding the next pass.	☐
9	In-Process monitoring of WPS parameters – including heat input for low temperature applications.	☐
10	Weld reinforcement limitations (B31.3 Table 341.3.2 provides minimum req.).	☐
11	Visual Examination of the completed weld (B31.3 Table 341.3.2 provides minimum req.).	☐
12	NDE of completed weld butt-welds utilizing RT/UT; and MT/PT of all completed welds (B31.3 Table 341.3.2 provides minimum acceptance requirements).	☐
13	Final sign-off by the owner's Inspector certifying that all in-process inspection and examination requirements have been met. Note: When closure welds are completed in accordance with this procedure the Alternative Test Methods in Lieu of Hydrostatic Leak Test Request Form and In-Process Inspection/Examination Travel Sheet (or equivalent records) for the closure weld are the documentation and certification that the final closure weld has been completed in accordance with the Safety Codes Act and Regulations. These two forms must be archived in the owners' files along with the Pressure Piping Construction and Test Data Reports for the piping system(s) made of new materials, as required by PESR Section 31(1). **The In-process Inspection/Examination Travel Sheet, or equivalent document that is developed as part of the AB-519 IMS procedure, must be submitted along with the IMS procedure for acceptance by ABSA. A sample form to document approvals is provided as Appendix 2.**	☐

APPENDIX 1: SAMPLE ALTERNATIVE TEST METHODS IN LIEU OF HYDROSTATIC LEAK TEST REQUEST FORM

Facility:		Project Number:
Drawing Number:	Line Size:	Closure/Tie-In Weld ID:
Pipe Sch. or wall thickness:	Line material spec:	
Fitting Sch. or wall thickness:	Fitting material:	
Design Pressure:	Design Temp.:	Design Minimum Temp.:
Operating pressure:	Operating temperature:	Fluid Service type:
Verification that all piping system components have been hydrostatically leak tested: ☐ Yes ☐ No (ref: B31.3 – 345.2.3) ☐ N/A Category D Fluid		
Welding Contractor:		
Weld procedure specification number:		

Postweld heat treatment: ☐ Yes ☐ No Impact Tested WPS Required: ☐ Yes ☐ No

Reason for Not Completing Hydrostatic Leak Test

Note: For Category D fluid service piping systems an initial service leak test may be substituted for the hydrostatic leak test when justified by the Owner.

Alternative Test Methods Considered

Flexibility evaluation done: ☐ Yes ☐ No Engineering comparison to similar system done: ☐ Yes ☐ No

Calculations done by: ☐ Hand ☐ Computer analysis

Comments

Submitted by: Signature: Date:

Designer Approval: Date:

Chief Inspector Approval: Date:

APPENDIX 2: SAMPLE IN-PROCESS INSPECTION/EXAMINATION TRAVEL SHEET

Job #:	Drawing/Line #:	Date Worked:
Joint Type:	WPS #:	Welder Symbol/File #:
Pipe Diameter and Schedule:	Material Specification:	

Inspections and Examinations

Check or verify each step - accept or reject results based upon specified criteria and indicate acceptance with initial.

In-Process Examination	Acceptance Criteria / Recorded Values or Data	Accept / Reject	In-Process Examiner Initial/Date
Alternative Test Methods in Lieu of Hydrostatic Leak Test Request Form Completed – Designer and Chief Inspector Approval Documented			
WPS Registered and Acceptable for scope of Work			
Welder Qualifications Verified	B Pressure Welder & WPQ for applicable performance variables		
Joint Preparation & Cleanliness	As per WPS and B31.3 – par. 328.4		
Fit-up: The internal misalignment criteria for girth butt welds shall be no more than: ➢ 1/16" for pipe wall thicknesses up to and including ¼" ➢ ¼(t) for pipe wall thicknesses up to and including ¾" t = _____ Maximum Internal Misalignment = _____ ➢ 3/16" for pipe wall thicknesses greater than ¾"			
Root Gap (As per WPS, record value)	Root Gap:		
Misalignment (record value)	Misalignment:		
Welding Consumables Verified - Actual Consumables Used:	Root Pass: Fill & Cap:		
Welding Consumables Controlled in Accordance With Manufacturer's Specifications			
Preheat/Interpass Temperature (As per WPS, record value)	Preheat: Interpass:		
Visual Examination of Root Pass			
NDE Completed on Root Pass**: MT or PT	ASME B31.3 (Minimum requirements provided in Table 341.3.2)		
In process monitoring of WPS parameters (As per WPS, including heat input)	Heat Input: (if applicable)		
Visual Examination Between Weld Passes; Clean and Acceptable (record number of weld passes examined)	Total # of passes:		
Weld Reinforcement (internal & external) Acceptable	ASME B31.3 (Minimum requirements provided in Table 341.3.2)		
Completed Weld Visually Acceptable	ASME B31.3 (Minimum requirements provided in Table 341.3.2)		
NDE of Final Weld Acceptable**: RT or UT	ASME B31.3 (Minimum requirements provided in Table 341.3.2)		
MT or PT	ASME B31.3 (Minimum requirements provided in Table 341.3.2)		
Initial Service Leak Test Visual Examination Acceptable	Record Test Pressure:		
Alternative Test Methods in Lieu of Hydrostatic Leak Test Request Form, QC Documents, NDE Reports, and In-Process Inspection/Examination Travel Sheet added to job file.			

Owner's Inspector Name: Signature: Date:

**** NDE to be completed and interpreted by CGSB or SNT-TC-1A Level II or Level III Examiner except for RT exposures only, which may be performed by a qualified or certified CEDO.**

APPENDIX 3: SAMPLE INITIAL SERVICE LEAK TEST TRAVEL SHEET

(Non-Mandatory Form; for Owners wishing to document initial service leak tests)

Job #:	Drawing/Line #:	Date Completed:

For Initial Service Leak Test Examination of Closure Welds and/or Category D Fluid Process Piping Systems
Check each step, accept or reject and indicate acceptance with initial and date.

Piping System Examination	Acceptance Criteria / Recorded Values or Data	Accept / Reject	Initial/Date
Alternative Test Methods in Lieu of Hydrostatic Leak Test Request Form Completed – Designer and Chief Inspector Approval Documented			

Sketch of Category D Fluid Piping System Examined During Initial Service Leak Test as Documented Below:

As per CSA B51, clause 8.3, all welded joints, including structural attachment welds to pressure containing components, shall not be painted or covered before the visual examination during leak testing.

Piping Construction QC Documents, NDE Reports, In-Process Inspection/Examination Travel Sheet etc. Reviewed and Verified.			
Visual Examination of Pressure Piping System (if service fluid is gas or vapour visual examination will be made at the time of preliminary check – see next step)	ASME B31.3 Table 341.3.2		
Preliminary Check (if service fluid is gas or vapour) Visual examination of joints per. Par. 341.4.1(a) completed.	At lesser of ½ test pressure or 170 kPa (25 psi) per ASME B31.3 345.5.5		
Pressure Gradually Increased in Steps (As per ASME B31.3 345.5.5 and 345.7.2)	Pressure Steps:		
Initial Service Leak Test (record service pressure value) All joints and connections examined for leaks per. Par. 345.2.2(a).	Record Test Pressure:		
Alternative Test Methods in Lieu of Hydrostatic Leak Test Request Form, QC Documents, NDE Reports, In-Process Inspection/Examination Travel Sheet and Initial Service Leak Test Travel Sheet added to job file.			

Owner's Inspector Name: Signature: Date:

5.0 REVISION LOG

Edition #	Rev #	Date	Description
1	1	2010-07-07	Changed Revision #
		2010-07-07	Page 2: Title was specific to closure welds, the document addresses more than closure welds.
			Page 2: Added decision chart to help facilitate navigation of requirements.
		2010-07-07	Page 2: Added title “Definitions”
		2010-07-07	Page 3: Added “In-process Examiner ” to address practice in common use.
		2010-07-07	Page 5: Changed terminology to “closure weld” from “closure and tie-in welds” to clarify intent of requirements.
		2010-07-07	Page 6: Changed reference from “methanol or glycol” to “other fluids” based on industry feedback.
		2010-07-07	Page 7: Item 11: Clarified RT/UT for butt-welds not for other closure weld types (e.g., socket welds)
		2010-07-07	Page 7: Item 12: Added word “contravene” to avoid creating conflict with WPS heating/cooling requirements.
		2010-07-07	Page 7: Item 13: Clarified exposure device operator requirements. Added SNT to be consistent with QC programs.
		2010-07-07	Page 7: Item 14: Clarification - Initial service test only for closure weld joint.
		2010-07-07	Page 8 Item 5: Changed from will to may as in some cases a bake-out is not essential.
		2010-07-07	Page 9: Item 13: Added text in this paragraph to clarify certification of closure weld.
		2010-07-07	Page 10: Deleted reference to closure weld in category D fluid service from this note.
		2010-07-07	Page 12: Indicated this form is non-mandatory.
		2010-10-12	Page 11: Corrected type EDO – changed to CEDO Did not change the revision date for this typo.
1	2	2014-01-06	Reposted for an editorial change to correct the Issued/Revision Date – no changes to technical information
2	0	2019-07-02	Reposted for an editorial change to correct the Issued/Revision Date – no changes to technical information.
2	1	2019-10-10	Page 1: Added contact for document.

		2019-10-10	Page 2: Clarified requirement of In-Process Examiner.
		2019-10-10	Page 5: Clarified requirement of In-Process Examiner in item 5.
2	2	2020-06-08	Revised: email contact information; and in-process examiner definition to align with current edition of B31.3.